

## The impact of changes in administrative status on the tourist functions of cities: a case study from Poland

Katarzyna Przybyła, Marian Kachniarz, Alina Kulczyk-Dynowska & David Ramsey

To cite this article: Katarzyna Przybyła, Marian Kachniarz, Alina Kulczyk-Dynowska & David Ramsey (2019) The impact of changes in administrative status on the tourist functions of cities: a case study from Poland, *Economic Research-Ekonomiska Istraživanja*, 32:1, 578-603, DOI: [10.1080/1331677X.2018.1559072](https://doi.org/10.1080/1331677X.2018.1559072)

To link to this article: <https://doi.org/10.1080/1331677X.2018.1559072>



© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 11 Apr 2019.



Submit your article to this journal [↗](#)



Article views: 365




View related articles [↗](#)



View Crossmark data [↗](#)

# The impact of changes in administrative status on the tourist functions of cities: a case study from Poland

Katarzyna Przybyła<sup>a</sup> , Marian Kachniarz<sup>b</sup> , Alina Kulczyk-Dynowska<sup>c</sup>  and David Ramsey<sup>d</sup> 

<sup>a</sup>Department of Spatial Economics, Wrocław University of Environmental and Life Sciences, 50-357 Wrocław, Poland; <sup>b</sup>Department of Spatial Economics, Wrocław University of Environmental and Life Sciences, Wrocław, Poland; <sup>c</sup>Department of Spatial Economics, Wrocław University of Environmental and Life Sciences, Wrocław, Poland; <sup>d</sup>Faculty of Computer Science and Management, Wrocław University of Science and Technology, Wrocław, Poland

## ABSTRACT

This article analyses transformations in the tourist functions of Polish cities in the years 2005–2016. The trajectory of these changes is assessed according to the status of a city resulting from administrative reforms. The first stage of the research is based on the theory of the economic base of a city using two measures – the index of surplus workers (ISW) and Florence's index of specialisation (FIS). Changes in the level and structure of employment are analysed, with particular emphasis on employment in tourism. In the second stage of the study, based on a group of diagnostic features characterising the tourist functions carried out by cities, taxonomic synthetic measures were constructed, which reflect the level of development of these functions. This information is summarised in the form of an analysis of divergence in the level of tourist functions using the Wilcoxon signed-rank test and the Student's *t*-test. This analysis confirmed the hypothesis about the positive impact of the status of voivodship capital on the dynamics of changes in tourist functions.

## ARTICLE HISTORY

Received 4 December 2017  
Accepted 10 December 2018

## KEYWORDS

tourist functions of a city;  
economic base of a city;  
territorial administration  
reform; regional policy

## 1. Introduction

The changes in the territorial division of Poland have created a specific research laboratory for socio-economic transformations resulting from administrative reforms. In particular, how they affect the development processes of cities which have either retained or lost their status as a voivodship capital. Poland is an appropriate object for such research as its settlement system is characterised by a high level of polycentrism, unique on the European scale (ESPON *Final Report 2007*). Additionally, it should be borne in mind that Poland is experiencing the final phase of market

**CONTACT** Katarzyna Przybyła  [katarzyna.przybyla@upwr.edu.pl](mailto:katarzyna.przybyla@upwr.edu.pl)  Wrocław University of Environmental and Life Sciences, Department of Spatial Economics, *ul. Grunwaldzka 55*, 50-357 Wrocław, Poland

© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

transformation, which is coupled with intensive modernization processes. This enhances the processes of replacing decaying functions with ones presenting greater development potential.

The objectives of this article are as follows:

- diagnosing the role and dynamics of tourist functions in the economic structures of voivodship cities in Poland;
- analysing the relationship between a city's status (whether it lost or retained the function of voivodship capital) and the trajectory of changes in the tourist function.

The time range of the study covers the years 2005–2016. The changes which occurred in this period will be analysed. This research is important for determining the distance between the cities analysed in terms of the selected aspect of development. Moreover, it enables the identification of groups of cities presenting a similar level.

Until 1998 Poland was divided into 49 voivodships, which were the basis for territorial government administration. The perspective of joining the European Union and entrusting regions with the implementation of regional policy required reform of this division and the creation of larger, economically stronger voivodships. Following this administrative reform, which came into force on 1 January 1 1999 (Przybyła & Kachniarz, 2017), 16 new voivodships were established in Poland, similar in size to the regions in the European Union countries. At the same time, in place of the existing 49 regional capitals, only 18 retained this function – the present voivodship cities. Fourteen of them, i.e., Białystok, Gdańsk, Katowice, Kielce, Kraków, Lublin, Łódź, Olsztyn, Opole, Poznań, Rzeszów, Szczecin, Warszawa and Wrocław are the seats of both the voivodship governor and the voivodship regional-government bodies. In two voivodships these functions were separated. In the Kujawsko-Pomorskie voivodship, the city of Bydgoszcz is the seat of the voivodship governor, whereas the city of Toruń is the seat of the voivodship parliament and the marshal's office. Similarly, in the Lubuskie voivodship, Gorzów Wielkopolski is the seat of the voivodship governor, while Zielona Góra is the voivodship of regional-government authorities (Przybyła, 2014) (Figure 1).

## 2. Background

Changes in the economic structures of European cities are reflected in the decreasing share of traditional industries. Multifunctional centres, capable of replacing these declining functions with the development of new ones are more resistant to these changes. The diversification of the economic base of a city enhances the development potential of an area (Dziewoński & Iwanicka-Lyrowa 1977, p. 268; Hall, 2006, pp.8–14; Raszkowski & Głuszczyk, 2015, pp. 1375–1385; Mayer et al., 2016, pp. 11–20; Raszkowski & Bartniczak, 2018, pp. 225–245). As the abundant subject literature shows, tourism is such a complementary function which influences society and the economy in various aspects (see: Pivcevic & Pranicovic, 2012; Vujko & Gajic,



**Figure 1.** Map of the administrative regions in Poland (after the territorial reforms in 1999).

Source: Przybyła K., Kachniarz M., Heldak M. (2018), The Impact of Administrative Reform on Labour Market Transformations in Large Polish Cities, *Sustainability*, 10.

2014; Butnaru et al., 2018). Therefore, many European cities are investing in tourism, in attractions and in the so-called conference industry, promoting themselves as the hosts of global events.

The increasingly important role of tourism in metropolises and global cities has been observed by Spirou (2011), whereas Harvey (1989) not only noticed its impact on changes in the economic structures of cities, but also on their image. The potential of tourism in the restructuring of old industries is described, among others, by Lorentzen & Hansen, (2012), Parysek (2004), Twardzik (2009) and Judd & Fainstein (1999). It may even result in the spatial reorganisation of cities, examples of which were presented by Agarwal (2002) and Hayllar et al. (2008). However, Hospers (2002) warned against excessive optimism in using tourism as a remedy for deindustrialization.

The problem of the relationship between the functions of capital cities and the dynamics of tourism development is addressed in studies by Therborn (2002), Maitland & Newman (2009), Maguire (2005) and Hall (2002). They found positive correlations between possessing the function of capital city and the level of

development of tourist functions. This influence results from two aspects – a symbolic dimension and an administrative-business one. With regard to the first aspect, a capital is usually a cultural centre, saturated with iconic symbols of the country. The accumulation of facilities and assets is conducive to the development of ‘prestige zones’, which attract visitors (national museums, galleries, theatres, operas, monuments, but also modern skyscrapers, sports arenas, etc.). It can even be assumed that administrative capitals receive priority with regard to symbolic investments. With regard to the second aspect, capitals usually represent political and economic centres, concentrating both administrative and business activities associated with the functions of controlling the state and economy. Current changes in the model of urban tourism are based on a conglomerate of these two trends creating ‘entertainment machines’ (Clark, 2004). Material heritage only plays the role of a background for recreation and entertainment related to café and club culture or shopping.

However, one must bear in mind that the function of being a capital city is not always attractive to its visitors. Some of its traits may constitute a barrier to the development of tourism. The study by Ritchie & Peirce (2007) approaches the development of tourism in this light. In their view, the identification of cities with the seat of politicians and bureaucrats may result in them being perceived as ‘boring’ and ‘administration-oriented’. In addition, certain social phenomena, such as the existence of impoverished districts of a city (Świąder et al., 2016), an aging population (van Hoof & Kazak, 2018), or the emigration of affluent residents to the outskirts (Tokarczyk-Dorociak et al., 2018; Krajewski, 2016), can have a negative influence on the image of a city, as well as the urban landscape of a city and the surrounding area (Krajewski, 2017).

The majority of the aforementioned studies are limited to national capitals, in which the described impact is most explicit, whereas there is no analogous discussion covering lower-level (regional) capitals. The second characteristic of the studies cited is their presentation of the capital city – tourism relationship in a static system, without taking into account situations in which the city gains or loses the function of being a capital. This is obviously due to the limited scope for carrying out such research – such situations occur relatively rarely, particularly among national capitals. From this perspective, the restoration of Berlin’s function as the capital of Germany is an interesting example. Despite this, however, according to Novy & Huning (2009) the city has not gained the rank of a ‘global city’ competing with London or Paris. One decisive factor here is the decentralised character of the German administration (lack of a clear concentration of power in the capital) and the polycentric system of economic and financial administrative centres (the triad: Hamburg - Munich - Frankfurt).

Summing up this review of the subject literature, it can be concluded that publications on the role of tourism in urban development are relatively abundant. Many fewer studies focus on the relationships between the capital and tourist functions of cities; moreover, they mainly refer to national capitals. There is a clear gap in the subject literature concerning empirical studies on actual changes in tourist functions with regard to administrative reforms. There is a similar deficit in the research covering regional capitals, and hence at a lower level than national capitals.

The research subject defined in this study (trajectories of changes in tourist functions in the former and current regional capitals of Poland) is exactly in line with the deficits specified above. A favourable context for such research (a peculiar 'historical window') was provided by the regional administration reforms carried out in Poland. Thus it seems that this study is an opportunity to fill in gaps in the knowledge regarding processes involved in changing the tourist functions of the largest cities in Poland. This specific example can become the basis for performing more extensive European and worldwide syntheses.

### 3. Research method

The first stage of the research is based on the theory of the economic base of an area. This theory is one of the most popular concepts explaining the developmental processes that take place on a regional or local scale, e.g., in a city. Its basic assumption is to make export activity the basis for the development of an area, i.e., meeting the needs of the inhabitants of other territorial units, domestic or foreign. The most important element stimulating economic growth is, according to this concept, the external demand for the goods or services produced in a given area. Companies and business sectors producing for export form the so-called economic base of a region or city. The development of this base provides multiplier effects in the form of the development of related sectors, subcontractors, as well as the market for local and regional services (Grosse, 2002, p. 26).

In accordance with this theory, the people employed in a given city can be divided into two groups: an endogenous group consisting of people working for the needs of the city itself and its residents and also an exogenous group covering those who work, in some way, 'for export', that is to satisfy the needs of the inhabitants of other areas.

Such a division of the employment structure in a city enables us to distinguish two basic groups of a city's functions:

- endogenous (service oriented) functions: performed by those sectors of a city's economy which primarily serve the local population and determine, to a great extent, the city's attractiveness to its residents,
- exogenous functions (city-forming, specialised ones): performed by those sectors of the city's economy which serve not only the local population, but predominantly people residing in other areas; such sectors constitute the economic base of a city, their development results in an inflow of revenue to the city and a rapid growth in endogenous activity, ultimately leading to multi-dimensional development of a city (Słodczyk, 2001, p. 64). Enterprises from these sectors, especially ones of a regional character, should be supported by public authorities (Malizia & Feser, 1999, p. 54).

Two methods for measuring the economic base of a city are applied in this article – the index of surplus workers (ISW) and Florence's index of specialisation (FIS).

The employment rate in an exogenous sector can be determined using the ISW. This is done by comparing the actual employment structure in a city with the structure adopted as the basis for reference, for example the structure of employment in a given country or region (Słodczyk, 2001 p. 70). A negative value of the ISW reflects deficiencies in a particular field, which have to be supplemented by importing products from other areas. A positive value indicates the large share of an exogenous sector within an area. Since these measures depend on the population of a city, their values relative to the population of a city should be used for the purpose of comparison.

FIS enables the identification of specialised functions ( $FIS > 1$ ), decisive for the importance of a city in a region or country. The higher the value of this coefficient, the higher a city's level of specialisation in a given sector of the economy. It should be added that both FIS and ISW have been comprehensively characterised in earlier studies (cf. Przybyła, 2010, p. 294; Przybyła Z. & Przybyła K., 2011, p. 240). The agricultural sector was excluded from the study, as by nature it does not have a city-forming character.

In the second stage of the study, the level of the development of tourist functions in cities is analysed using the model-free synthetic measure  $h_i$ . Synthetic measures allow quantifications of the level of development of a phenomenon using a single number, the description of which usually requires using many diagnostic features (Stanisławski, 2010). Using a synthetic indicator enables effective characterisation and ordering of socio-economic changes occurring within the area studied (Świąder et al., 2016a, p. 197–208). Such an indicator makes it possible to define a ranking of the objects studied, thus giving a more holistic perspective of the analysed problem (Kachniarz, 2011, p.128).

The  $h_i$  indicator is the arithmetic mean of normalised variables. These measures are normalised to lie in the range  $\langle 0;1 \rangle$ . The higher the value of the measure, the more positive the assessment of an object.

First, the features characterising tourist functions in the researched cities were selected and their values were initially analysed. This analysis covered:

1. The Baretje and Defert index (1) – measuring the level of development of accommodation in a given area (Kowalczyk, 2002, p. 58).

$$Tf(t) = \frac{\text{number of accommodation places in the area} \times 100}{\text{population of the area}} \quad (1)$$

2. Charvat index (2) – measuring the number of overnight stays per 100 residents of an area, reflecting the intensity of tourist traffic in the studied area (Lijewski et al., 2008, p. 25).

$$TCh = \frac{\text{number of overnight stays} \times 100}{\text{number of local population}} \quad (2)$$

3. Occupancy density ratio – calculated as the number of accommodation places per  $\text{km}^2$ , reflecting the level of development of tourism infrastructure in an area.



4. 4. Florence's index of specialisation – calculated for the sectors classified in the I (accommodation and food service activities) and R sections (arts, entertainment and recreation) of the Statistical Classification of Economic Activities (NACE Rev. 2) 2007.

For the purposes of making the units of measurement of the individual features and their orders of magnitude comparable, normalisation was carried out based on formula 3:

$$z_{ij} = \frac{x_{ij}}{\max_i x_{ij}} \quad (i = 1, \dots, n; j = 1, \dots, p), \quad (3)$$

where:

$z_{ij}$  – normalised value of the measure of characteristic  $j$  for object  $i$

$x_{ij}$  – value of the measure of characteristic  $j$  for object  $i$

This procedure preserves the variance of the characteristics and the ratios between normalised and non-normalised values, while making the normalised values comparable.

Next, using formula 4, the  $h_i$  measures for the analysed cities were calculated:

$$h_i = \frac{1}{p} \sum_{j=1}^p z_{ij} \quad (i = 1, \dots, n), \quad (4)$$

where:

$h_i$  – value of the model-free synthetic measure for the  $i$ -th object

$p$  – number of characteristics.

It should be added that a similar method for analysing the tourist functions of cities has been used in earlier analyses (cf. Przybyła & Kulczyk-Dynowska, 2018), but are developed to a greater extent in this study.

In the course of analysing the diversity of development processes occurring in the tourist functions within the groups of current and former voivodship capital cities, a non-parametric (Wilcoxon signed-rank) and parametric (Student  $t$ -test) test were used to test the null hypothesis of a lack of difference between the development of tourism in these two groups of cities.

Thus, the development of tourist functions in former (31) and current (18) voivodship capital cities was compared in two ways:

- treating these groups as independent samples;
- treating these groups as pairs (the current capital city/cities of a voivodship were compared with the other cities in the same voivodship – this gave a total of 13 voivodships, as there are no former voivodship cities in the Opolskie, Lubuskie and Świętokrzyskie voivodships).

The following interpretation of the  $p$ -value was applied, using a significance level of 5%:



$0.01 < p < 0.05$  evidence of a difference

$0.001 < p < 0.01$  strong evidence of a difference

$p < 0.001$  very strong evidence of a difference

## 4. Research results

### ***4.1. Transformations in the functional structure of polish voivodship cities with particular emphasis on changes in the tourist function***

For the purposes of this study, data on the number of employees in the capital cities of voivodships, former capital cities and in the whole of Poland for various economic sectors, according to NACE Rev. 2 2007, were collected for the years 2005 and 2016. In addition, information on employment in sectors I and R, closely related to the tourist function, was collected. Both ISW and FIS were calculated for these cities based on the data presented in Table 1 (see tabs. 2, 4). The employment structure in the whole country was adopted as the basis of reference. Moreover, ISW was calculated relative to population size allowing comparisons between cities. As a result, measures of various types of city-forming functions were generated, i.e., measures of employment structure in exogenous sectors (see Table 3).

It is noticeable that the measures of the ISW of the size of exogenous groups increased in the majority of cities (35 out of 49 cities, see Table 2) and sometimes radically, e.g., it more than tripled in Toruń (which was accompanied by highly significant transformations in the functional structure of this city), or in Bielsko-Biała (almost tripled). It should be observed that a decline in this measure was observed in 13 former capital cities of voivodships (Ciechanów, Częstochowa, Koszalin, Krosno, Leszno, Ostrołęka, Płock, Przemyśl, Radom, Sieradz, Skierniewice, Słupsk, Tarnów), but only in one current regional capital – Zielona Góra. The size of the exogenous sectors in this city declined, being 14% smaller than in 2005. The capital cities of the current Polish voivodships remain polyfunctional centres, with various types of services playing a dominant role. It is worth paying attention to the relatively small significance of the industrial sector in the current capitals. In 2016, industry was of key importance for the city-forming aspect of the economy only in Gorzów Wielkopolski. The situation in this respect was much more varied in the group of cities which lost the status of regional capital, as apart from cities which remained strictly industrial centres (Bielsko-Biała, Krosno, Włocławek) this group also included cities implementing a development model based on an extensive spectrum of services (Łomża, Słupsk, Zamość). This observation corresponds to the results of earlier research (Przybyła, Kachniarz, Hełdak, 2018).

When focusing on the tourist functions carried out in current regional capitals (see Table 2), it is noticeable that in 2005 the tourism related sectors contributed to exogenous employment in 16 voivodship capitals (all except Bydgoszcz and Rzeszów), based on sector I of NACE, in 10 of them, and based on sector R, in 15 of them. In nine cities: Kraków, Poznań, Warszawa, Opole, Szczecin, Wrocław, Gdańsk, Olsztyn and Lublin, the sectors related to tourism had shares in exogenous employment. In this group (see Table 3) tourism was of the highest importance for city-forming functions in Kraków (in total from the I and R sectors amounting to an over 18% share

**Table 1.** Employment in the capital cities of the Polish voivodships and in Poland in 2005 and 2016 (according to NACE Rev. 2 2007) as of December 31.

	year	total	sectors:					
			B – F <sup>1</sup>	G – J <sup>2</sup>	I alone <sup>3</sup>	K – L <sup>4</sup>	M – U <sup>5</sup>	R alone <sup>6</sup>
Poland	2005	7835758	2907305	1689882	109742	386037	2737205	111716
	2016	9225051	3120649	2275794	149095	421832	3299150	127469
Biała Podlaska	2005	13528	3470	3485	233	548	5916	181
	2016	13714	3036	4103	201	543	6003	177
Białystok	2005	74655	18589	20031	1321	3926	31713	955
	2016	84819	18577	24212	1669	4176	37716	1101
Bielsko-Biała	2005	59275	24703	12713	938	2448	19258	692
	2016	77352	34112	16891	816	1924	24343	1031
Bydgoszcz	2005	107970	37305	26949	1292	5853	37600	1398
	2016	122378	38383	30153	2005	7765	45957	1245
Chełm	2005	14176	3666	3374	71	689	6403	264
	2016	13466	2889	3709	125	596	6242	253
Ciechanów	2005	12612	3597	2953	57	873	5099	171
	2016	12749	3789	3339	51	493	5052	196
Częstochowa	2005	72800	31290	15176	1039	2900	23307	670
	2016	73887	28272	18239	1260	2173	25144	694
Elbląg	2005	29338	10858	5971	383	1373	11021	461
	2016	27312	9585	5434	574	1085	11176	441
Gdańsk	2005	131132	35122	34625	2467	9778	51265	2108
	2016	163549	34147	49472	3666	12748	67095	2464
Gorzów Wielkopolski	2005	33723	11465	7413	440	1624	12914	528
	2016	39660	14463	8384	571	1728	15002	556
Jelenia Góra	2005	23368	8602	5036	318	1271	8393	546
	2016	22589	7810	5169	246	737	8839	540
Kalisz	2005	31695	13362	6521	264	1571	10178	504
	2016	33203	12245	8962	362	973	10670	540
Katowice	2005	143520	41137	40399	1830	9560	52075	2188
	2016	162890	33810	45034	2313	14224	69734	3792
Kielce	2005	67511	20770	16800	695	3237	26496	1015
	2016	74061	20571	18459	1302	2825	32166	1410
Konin	2005	24687	10000	5307	246	1121	8154	303
	2016	22293	6771	5955	117	993	8510	388
Koszalin	2005	27147	8074	7228	367	1339	10436	512
	2016	33533	10946	9441	515	1327	11783	597
Kraków	2005	249059	64824	66387	7055	13425	103677	5492
	2016	326180	63725	97454	9919	20471	144133	5142
Krosno	2005	24471	12118	4448	147	829	7028	224
	2016	22501	9548	5061	273	475	7394	272
Legnica	2005	28284	10061	6256	345	1351	10484	415
	2016	31653	11414	7048	504	1161	11995	371
Leszno	2005	19450	8190	4494	206	1187	5415	304
	2016	22575	8684	5782	365	973	7090	265
Lublin	2005	102864	21941	26587	1539	6882	47046	1530
	2016	120132	22617	32723	1821	8843	55805	2040
Łomża	2005	12855	3185	3147	135	946	5517	170
	2016	14236	3339	4118	353	514	6227	256
Łódź	2005	197577	59757	46362	2396	12043	78862	3608
	2016	233786	57655	61894	3443	15798	98366	3601
Nowy Sącz	2005	28403	9850	8040	429	1163	9311	351
	2016	32960	11576	9978	531	1113	10279	458
Olsztyn	2005	58874	15496	16660	936	3756	22699	889
	2016	64041	13817	17251	1141	3075	29678	1077
Opole	2005	47186	12431	12705	818	2373	19483	978
	2016	53019	12502	13687	757	2609	24153	1071
Ostrołęka	2005	14173	5381	2296	125	767	5458	188
	2016	16558	5769	3534	212	833	6344	364
Piła	2005	23667	9279	5662	347	1187	7458	301
	2016	23395	8380	6623	352	827	7502	247

(continued)

Table 1. Continued.

	year	total	sectors:					R alone <sup>6</sup>
			B – F <sup>1</sup>	G – J <sup>2</sup>	I alone <sup>3</sup>	K – L <sup>4</sup>	M – U <sup>5</sup>	
Piotrków Trybunalski	2005	23737	9483	4573	254	1076	8596	271
	2016	24833	8584	5005	253	766	10474	276
Płock	2005	43902	20316	8616	668	1709	13165	783
	2016	44700	17056	10354	535	1478	15754	793
Poznań	2005	222248	61045	64896	5046	12937	82438	3360
	2016	244068	49674	68253	3880	15292	110370	3257
Przemysł	2005	17238	3995	3847	185	1039	8269	364
	2016	16913	3618	4538	199	674	8016	354
Radom	2005	48321	14922	11212	434	2510	19536	577
	2016	55144	17819	13858	698	1694	21645	715
Rzeszów	2005	69136	21600	17421	598	3932	26124	771
	2016	86064	21615	22693	1359	3813	37882	945
Siedlce	2005	22667	7504	4904	104	1111	9073	203
	2016	24383	7491	6066	214	686	9935	321
Sieradz	2005	12715	4337	2173	34	538	5659	177
	2016	12290	3991	2490	35	390	5411	126
Skierniewice	2005	13559	4242	2480	59	579	6201	199
	2016	11415	4038	2002	116	433	4896	138
Słupsk	2005	26028	8081	5008	330	1958	10876	506
	2016	26639	8833	5633	504	1551	10606	478
Suwałki	2005	16126	6553	3038	126	707	5754	238
	2016	18920	7408	4123	222	741	6506	293
Szczecin	2005	107684	28076	30944	2090	6714	41456	1872
	2016	111138	22497	34537	2645	6040	47856	1768
Tarnobrzeg	2005	11073	2924	2322	37	670	5137	172
	2016	10347	2439	2161	114	446	5299	192
Tarnów	2005	41054	16164	9442	428	1661	13692	357
	2016	40208	14416	9772	539	1213	14699	427
Toruń	2005	63062	23559	15019	767	3226	21091	1001
	2016	63610	16704	18495	1337	4366	23947	1096
Wałbrzych	2005	31288	13617	5835	203	1280	10358	515
	2016	29929	12088	5100	492	828	11867	568
Warszawa	2005	746068	127231	249087	18803	84920	283410	15822
	2016	896400	116797	286999	20638	112082	379451	14988
Wrocław	2005	32537	14607	5142	105	1379	11250	277
	2016	30676	13466	6013	394	1122	10019	282
Wrocław	2005	189689	48192	50703	4092	13658	76625	2985
	2016	267873	49829	76484	5979	20941	120389	4066
Zamość	2005	17620	4208	4731	197	893	7702	443
	2016	17616	3433	4898	308	749	8431	354
Zielona Góra	2005	37040	8689	10423	510	2593	15282	594
	2016	44646	10392	12814	667	2185	18801	851

1 – industry and construction.

2 - trade; repair of motor vehicles; transport and storage management; accommodation and catering; information and communication trade.

3 – activities related to accommodation and food services.

4 - financial and insurance activities; real estate market.

5 - other services: e.g., education, health care and social aid, public administration and national defence; state social security.

6 – activities related to culture, entertainment and recreation.

Source: The Central Statistical Office. Z-06 Report on employment, salaries and working hours.

in the exogenous sectors) and Poznań (8.9%), whereas the lowest relative importance was recorded in Olsztyn and Lublin (2.3% and 0.9% respectively). An analysis of employment structure indicators in the exogenous sectors for current capitals in 2016, shows that, after 11 years, tourism specific functions were not of a city-forming nature only in Rzeszów and Poznań. At the same time, in eight capital cities:

**Table 2.** ISW values for the analysed cities.

CITY	year	sectors:						exogenous group size
		B – F	G – J	I alone	K – L	M – U	R alone	
Biała Podlaska	2005	-1549,3	567,5	43,5	-118,5	1190,4	-11,9	1758
	2016	-1603,2	719,8	-20,6	-84,1	1098,5	-12,5	1818
Białystok	2005	-9110,3	3930,7	275,4	248,0	5634,3	-109,4	9813
	2016	-10115,6	3287,4	298,2	297,5	7382,2	-71,0	10967
Bielsko-Biała	2005	2710,2	-70,4	107,8	-472,2	-1448,1	-153,1	2710
	2016	7945,4	-2191,5	-434,2	-1613,1	-3320,4	-37,8	7945
Bydgoszcz	2005	-2755,2	3663,9	-220,2	533,7	-116,3	-141,4	4198
	2016	-3015,0	-37,3	27,1	2169,0	2191,0	-446,0	4360
Chełm	2005	-1593,7	316,8	-127,5	-9,4	1451,0	61,9	1768
	2016	-1666,3	387,0	-92,6	-19,8	1426,2	66,9	1813
Ciechanów	2005	-1082,4	233,1	-119,6	251,7	693,3	-8,8	1178
	2016	-523,7	193,9	-155,0	-90,0	492,6	19,8	686
Częstochowa	2005	4279,0	-524,3	19,4	-686,6	-2123,7	-367,9	4279
	2016	3277,5	11,3	65,8	-1205,6	-1280,2	-326,9	3289
Elbląg	2005	-27,3	-356,1	-27,9	-72,4	772,6	42,7	773
	2016	345,9	-1303,8	132,6	-163,9	1408,4	63,6	1754
Gdańsk	2005	-13532,0	6344,7	630,5	3317,6	5457,7	238,4	15120
	2016	-21178,3	9124,9	1022,7	5269,4	8605,1	204,1	22999
Gorzów Wielkopolski	2005	-1047,3	140,2	-32,3	-37,4	1133,8	47,2	1274
	2016	1046,8	-1400,0	-70,0	-85,5	818,4	8,0	1865
Jelenia Góra	2005	-68,2	-3,6	-9,3	119,8	230,0	212,8	350
	2016	168,6	-403,6	-119,1	-295,9	760,5	227,9	929
Kalisz	2005	1602,2	-314,4	-179,9	9,5	-893,8	52,1	1612
	2016	1013,1	770,9	-174,6	-545,3	-1204,4	81,2	1784
Katowice	2005	-12113,3	9447,1	-180,0	2489,3	1940,3	141,8	13877
	2016	-21292,4	4849,5	-319,6	6775,6	11479,7	1541,2	23105
Kielce	2005	-4278,6	2240,4	-250,5	-89,0	2912,9	52,5	5153
	2016	-4482,3	188,4	105,0	-561,6	5679,6	386,6	5868
Konin	2005	840,4	-17,1	-99,7	-95,2	-469,7	-49,0	840
	2016	-770,3	455,4	-243,3	-26,4	537,4	80,0	993
Koszalin	2005	-1998,4	1373,4	-13,2	1,6	952,9	125,0	2328
	2016	-397,5	1168,5	-27,0	-206,4	-209,4	133,7	1169
Kraków	2005	-27584,5	12674,2	3566,9	1154,8	16675,1	1941,1	30504
	2016	-46615,1	16986,3	4647,3	5555,8	27481,4	634,9	50024
Krosno	2005	3038,5	-829,5	-195,7	-376,6	-1520,3	-124,9	3039
	2016	1936,4	-489,9	-90,7	-553,9	-653,0	-38,9	1936
Legnica	2005	-433,2	156,2	-51,1	-42,4	603,8	11,7	760
	2016	706,4	-760,7	-7,6	-286,4	675,0	-66,4	1381
Leszno	2005	973,5	299,4	-66,4	228,8	-1379,3	26,7	1502
	2016	1047,3	212,8	0,1	-59,3	-983,5	-46,9	1260
Lublin	2005	-16224,7	4403,1	98,4	1814,3	11113,3	63,4	17331
	2016	-18021,2	3086,8	-120,6	3349,7	12842,3	380,1	19279
Łomża	2005	-1584,6	374,7	-45,0	312,7	1026,5	-13,3	1714
	2016	-1476,8	606,0	122,9	-137,0	1135,8	59,3	1742
Łódź	2005	-13550,1	3752,0	-371,1	2309,2	9843,9	791,1	15905
	2016	-21430,1	4219,7	-335,4	5107,7	14757,2	370,6	24085
Nowy Sącz	2005	-688,4	1914,5	31,2	-236,3	-610,8	-53,9	1915
	2016	426,3	1846,9	-1,7	-394,2	-1508,5	2,6	2273
Olsztyn	2005	-6348,0	3963,1	111,5	855,5	2133,0	49,6	6952
	2016	-7846,8	1452,3	106,0	146,6	6775,1	192,1	8374
Opole	2005	-5076,4	2528,7	157,1	48,3	2999,9	305,3	5577
	2016	-5433,3	607,4	-99,9	184,6	5191,8	338,4	5984
Ostrołęka	2005	122,4	-760,6	-73,5	68,8	507,1	-14,1	698
	2016	167,8	-550,8	-55,6	75,9	422,4	135,2	666
Piła	2005	497,8	557,9	15,5	21,0	-809,4	-36,4	1077
	2016	465,9	851,5	-26,1	-242,8	-864,7	-76,3	1317
Piotrków Trybunalski	2005	675,8	-546,2	-78,4	-93,4	304,1	-67,4	980
	2016	183,5	-1121,2	-148,4	-369,5	1593,0	-67,1	1776
Płock	2005	4027,0	-852,0	53,1	-453,9	-2170,9	157,1	4027
	2016	1934,9	-673,4	-187,4	-566,0	-232,0	175,3	1935

(continued)

Table 2. Continued.

CITY	year	sectors:						exogenous group size
		B – F	G – J	I alone	K – L	M – U	R alone	
Poznań	2005	-21415,8	16965,4	1933,4	1987,7	4801,8	191,4	23755
	2016	-32889,3	8042,1	-64,6	4131,6	23084,1	-115,5	35258
Przemysł	2005	-2400,8	129,4	-56,4	189,8	2247,4	118,2	2567
	2016	-2103,3	365,6	-74,3	-99,4	1967,4	120,3	2333
Radom	2005	-3006,6	791,0	-242,7	129,4	2656,4	-111,9	3577
	2016	-835,1	254,1	-193,2	-827,6	1923,9	-47,0	2178
Rzeszów	2005	-4051,6	2510,9	-370,3	525,9	1973,3	-214,7	5010
	2016	-7498,7	1461,3	-32,0	-122,4	7103,0	-244,2	8564
Siedlce	2005	-906,1	15,6	-213,5	-5,7	1154,9	-120,2	1170
	2016	-757,3	50,8	-180,1	-429,0	1214,9	-15,9	1266
Sieradz	2005	-380,7	-569,2	-144,1	-88,4	1217,4	-4,3	1217
	2016	-166,5	-541,9	-163,6	-172,0	1015,7	-43,8	1016
Skierniewice	2005	-788,8	-444,2	-130,9	-89,0	1464,5	5,7	1465
	2016	176,5	-814,0	-68,5	-89,0	813,7	-19,7	990
Słupsk	2005	-1576,2	-605,3	-34,5	675,7	1783,8	134,9	2460
	2016	-178,4	-938,8	73,5	332,9	1079,1	109,9	1412
Suwałki	2005	569,8	-439,8	-99,8	-87,5	120,8	8,1	691
	2016	1007,7	-544,5	-83,8	-124,2	-260,3	31,6	1008
Szczecin	2005	-11878,0	7720,6	581,9	1408,8	3839,6	336,7	12969
	2016	-15098,7	7119,6	848,8	958,0	8109,8	232,3	16187
Tarnobrzeg	2005	-1184,4	-66,0	-118,1	124,5	1269,0	14,1	1393
	2016	-1061,2	-391,6	-53,2	-27,1	1598,6	49,0	1599
Tarnów	2005	931,7	588,2	-147,0	-361,6	-649,1	-228,3	1520
	2016	814,4	-147,2	-110,8	-625,6	319,4	-128,6	1134
Toruń	2005	161,1	1418,9	-116,2	119,2	-938,0	101,9	1699
	2016	-4814,0	2802,6	308,9	1457,3	1198,2	217,1	5458
Wałbrzych	2005	2008,2	-912,7	-235,2	-261,4	-571,6	68,9	2008
	2016	1963,6	-2283,4	8,3	-540,6	1163,5	154,5	3127
Warszawa	2005	-149583,0	88187,8	8354,1	48164,2	22791,8	5185,2	159144
	2016	-186437,1	65859,7	6150,4	71092,5	58872,0	2601,8	195824
Wrocław	2005	2534,8	-1875,0	-350,7	-224,0	-115,9	-186,9	2535
	2016	3088,9	-1554,7	-101,8	-280,7	-951,6	-141,9	3089
Wrocław	2005	-22188,4	9794,1	1435,4	4312,8	10362,4	280,6	24469
	2016	-40787,0	10400,5	1649,6	8692,0	24589,7	364,6	43682
Zamość	2005	-2329,6	931,0	-49,8	24,9	1546,9	191,8	2503
	2016	-2526,1	552,2	23,3	-56,5	2131,0	110,6	2683
Zielona Góra	2005	-5054,0	2434,8	-8,8	768,2	2343,1	65,9	5546
	2016	-4710,8	1800,0	-54,6	143,5	2834,3	234,1	4778

Source: authors' compilation.

Kraków, Toruń, Kielce, Gdańsk, Warszawa, Szczecin, Wrocław and Olsztyn, both tourism related sections had shares in exogenous employment. In Kraków, this amounted to 10.6%, for Toruń 9.6%, but for Wrocław and Olsztyn 4.6% and 3.6% respectively.

It should be noted, however, that the importance of tourist functions declined in ten out of 18 current capital cities, as measured by the share in the exogenous group. This is all the more significant as it concerns the group of the largest Polish cities, populated by at least 500,000 residents: the national capital Warszawa, Kraków, Łódź, Wrocław and Poznań (as well as the next largest cities, Gdańsk and Szczecin).

In the group of cities that lost their status of voivodship capital, attention should be paid to: Elbląg, Łomża, Słupsk, Wałbrzych and Zamość, where both tourism related sections had shares in exogenous employment in 2016.

The information presented above can be supplemented by an analysis of the FIS values (see Table 4). As previously mentioned, FIS enables the identification of

**Table 3.** Employment structure indicators in the exogenous sectors of the analysed cities (%).

CITY	year	sectors:				of total	
		B – F	G – J	K – L	M – U	I	R
Biała Podlaska	2005	x	32,28	x	67,72	2,48	x
	2016	x	39,59	x	60,41	x	x
Białystok	2005	x	40,06	2,53	57,42	2,81	x
	2016	x	29,97	2,71	67,31	2,72	x
Bielsko-Biała	2005	100,00	x	x	x	3,98	x
	2016	100,00	x	x	x	x	x
Bydgoszcz	2005	x	87,28	12,72	x	x	x
	2016	x	x	49,75	50,25	0,62	x
Chelm	2005	x	17,92	x	82,08	x	3,50
	2016	x	21,34	x	78,66	x	3,69
Ciechanów	2005	x	19,78	21,36	58,85	x	x
	2016	x	28,24	x	71,76	x	2,89
Częstochowa	2005	100,00	x	x	x	0,45	x
	2016	99,66	0,34	x	x	2,00	x
Elbląg	2005	x	x	x	100,00	x	5,53
	2016	19,72	x	x	80,28	7,56	3,63
Gdańsk	2005	x	41,96	21,94	36,10	4,17	1,58
	2016	x	39,67	22,91	37,41	4,45	0,89
Gorzów Wielkopolski	2005	x	11,00	x	89,00	x	3,71
	2016	56,12	x	x	43,88	x	0,43
Jelenia Góra	2005	x	x	34,24	65,76	x	60,85
	2016	18,15	x	x	81,85	x	24,53
Kalisz	2005	99,41	x	0,59	x	x	3,23
	2016	56,79	43,21	x	x	x	4,55
Katowice	2005	x	68,08	17,94	13,98	x	1,02
	2016	x	20,99	29,33	49,69	x	6,67
Kielce	2005	x	43,47	x	56,53	x	1,02
	2016	x	3,21	x	96,79	1,79	6,59
Konin	2005	100,00	x	x	x	x	x
	2016	x	45,87	x	54,13	x	8,05
Koszalin	2005	x	59,00	0,07	40,94	x	5,37
	2016	x	100,00	x	x	x	x
Kraków	2005	x	41,55	3,79	54,67	11,69	6,36
	2016	x	33,96	11,11	54,94	9,29	1,27
Krosno	2005	100,00	x	x	x	x	x
	2016	100,00	x	x	x	x	x
Legnica	2005	x	20,55	x	79,45	x	1,55
	2016	51,14	x	x	48,86	x	x
Leszno	2005	64,83	19,94	15,24	x	x	1,78
	2016	83,11	16,89	x	x	0,01	x
Lublin	2005	x	25,41	10,47	64,13	0,57	0,37
	2016	x	16,01	17,38	66,61	x	1,97
Łomża	2005	x	21,86	18,25	59,89	x	x
	2016	x	34,79	x	65,21	7,06	3,40
Łódź	2005	x	23,59	14,52	61,89	x	4,97
	2016	x	17,52	21,21	61,27	x	1,54
Nowy Sącz	2005	x	100,00	x	x	1,63	x
	2016	18,75	81,25	x	x	x	0,11
Olsztyn	2005	x	57,01	12,31	30,68	1,60	0,71
	2016	x	17,34	1,75	80,91	1,27	2,29
Opole	2005	x	45,34	0,87	53,79	2,82	5,47
	2016	x	10,15	3,09	86,76	x	5,66
Ostrołęka	2005	17,53	x	9,85	72,62	x	x
	2016	25,19	x	11,39	63,42	x	20,30
Piła	2005	46,23	51,81	1,95	x	1,44	x
	2016	35,37	64,63	x	x	x	x
Piotrków Trybunalski	2005	68,97	x	x	31,03	x	x
	2016	10,33	x	x	89,67	x	x
Płock	2005	100,00	x	x	x	1,32	3,90
	2016	100,00	x	x	x	x	9,06

*(continued)*

Table 3. Continued.

CITY	year	sectors:				of total	
		B – F	G – J	K – L	M – U	I	R
Poznań	2005	x	71,42	8,37	20,21	8,14	0,81
	2016	x	22,81	11,72	65,47	x	x
Przemysł	2005	x	5,04	7,39	87,56	x	4,61
	2016	x	15,67	x	84,33	x	5,16
Radom	2005	x	22,11	3,62	74,27	x	x
	2016	x	11,67	x	88,33	x	x
Rzeszów	2005	x	50,12	10,50	39,39	x	x
	2016	x	17,06	x	82,94	x	x
Siedlce	2005	x	1,33	x	98,67	x	x
	2016	x	4,01	x	95,99	x	x
Sieradz	2005	x	x	x	100,00	x	x
	2016	x	x	x	100,00	x	x
Skierniewice	2005	x	x	x	100,00	x	0,39
	2016	17,83	x	x	82,17	x	x
Słupsk	2005	x	x	27,47	72,53	x	5,49
	2016	x	x	23,58	76,42	5,20	7,78
Suwałki	2005	82,50	x	x	17,50	x	1,17
	2016	100,00	x	x	x	x	3,13
Szczecin	2005	x	59,53	10,86	29,61	4,49	2,60
	2016	x	43,98	5,92	50,10	5,24	1,44
Tarnobrzeg	2005	x	x	8,93	91,07	x	1,01
	2016	x	x	x	100,00	x	3,07
Tarnów	2005	61,30	38,70	x	x	x	x
	2016	71,83	x	x	28,17	x	x
Toruń	2005	9,48	83,51	7,01	x	x	6,00
	2016	x	51,35	26,70	21,95	5,66	3,98
Wałbrzych	2005	100,00	x	x	x	x	3,43
	2016	62,79	x	x	37,21	0,27	4,94
Warszawa	2005	x	55,41	30,26	14,32	5,25	3,26
	2016	x	33,63	36,30	30,06	3,14	1,33
Wrocław	2005	100,00	x	x	x	x	x
	2016	100,00	x	x	x	x	x
Wrocław	2005	x	40,03	17,63	42,35	5,87	1,15
	2016	x	23,81	19,90	56,29	3,78	0,83
Zamość	2005	x	37,20	1,00	61,81	x	7,66
	2016	x	20,58	x	79,42	0,87	4,12
Zielona Góra	2005	x	43,90	13,85	42,25	x	1,19
	2016	x	37,67	3,00	59,32	x	4,90

Source: authors' compilation.

specialised functions, decisive for the national importance of a city, as well as determination of the level of specialisation. A value of  $W \leq 1$  means that a city does not specialise in a given economic sector, i.e., this area of its activity is endogenous in nature. A value in the range  $1.5 < W \leq 2$  indicates a medium level of specialisation, whereas  $W > 2$  indicates that a city is characterised by a high level of specialisation in the given sector.

It is noticeable that in 2005 only Kraków presented a high level of specialisation in activities related to accommodation and catering (section I). In the period leading up to 2016, this level of specialisation declined. However, Kraków retained the highest level of specialisation among the cities analysed (FIS value in 2005 – 2.02, in 2016 – 1.88). The level of specialisation in this sector dropped from medium to low in Warszawa and Wrocław. Poznań lost its medium level of specialisation in this respect. The level of specialisation did not exceed low in any of the other cities.



**Table 4.** FIS values for the group of analysed cities.

CITY	year	sectors:						
		B – F	G – J	I alone	K – L	M – U	R alone	I + R
Biała Podlaska	2005	0,69	1,19	1,23	0,82	1,25	0,94	1,08
	2016	0,65	1,21	0,91	0,87	1,22	0,93	0,92
Białystok	2005	0,67	1,24	1,26	1,07	1,22	0,90	1,08
	2016	0,65	1,16	1,22	1,08	1,24	0,94	1,09
Bielsko-Biała	2005	1,12	0,99	1,13	0,84	0,93	0,82	0,97
	2016	1,30	0,89	0,65	0,54	0,88	0,96	0,80
Bydgoszcz	2005	0,93	1,16	0,85	1,10	1,00	0,91	0,88
	2016	0,93	1,00	1,01	1,39	1,05	0,74	0,89
Chełm	2005	0,70	1,10	0,36	0,99	1,29	1,31	0,84
	2016	0,63	1,12	0,57	0,97	1,30	1,36	0,94
Ciechanów	2005	0,77	1,09	0,32	1,41	1,16	0,95	0,64
	2016	0,88	1,06	0,25	0,85	1,11	1,11	0,65
Częstochowa	2005	1,16	0,97	1,02	0,81	0,92	0,65	0,83
	2016	1,13	1,00	1,06	0,64	0,95	0,68	0,88
Elbląg	2005	1,00	0,94	0,93	0,95	1,08	1,10	1,02
	2016	1,04	0,81	1,30	0,87	1,14	1,17	1,24
Gdańsk	2005	0,72	1,22	1,34	1,51	1,12	1,13	1,23
	2016	0,62	1,23	1,39	1,70	1,15	1,09	1,25
Gorzów Wielkopolski	2005	0,92	1,02	0,93	0,98	1,10	1,10	1,02
	2016	1,08	0,86	0,89	0,95	1,06	1,01	0,95
Jelenia Góra	2005	0,99	1,00	0,97	1,10	1,03	1,64	1,31
	2016	1,02	0,93	0,67	0,71	1,09	1,73	1,16
Kalisz	2005	1,14	0,95	0,59	1,01	0,92	1,12	0,86
	2016	1,09	1,09	0,67	0,64	0,90	1,18	0,91
Katowice	2005	0,77	1,31	0,91	1,35	1,04	1,07	0,99
	2016	0,61	1,12	0,88	1,91	1,20	1,68	1,25
Kielce	2005	0,83	1,15	0,74	0,97	1,12	1,05	0,90
	2016	0,82	1,01	1,09	0,83	1,21	1,38	1,22
Konin	2005	1,09	1,00	0,71	0,92	0,95	0,86	0,79
	2016	0,90	1,08	0,32	0,97	1,07	1,26	0,76
Koszalin	2005	0,80	1,23	0,97	1,00	1,10	1,32	1,15
	2016	0,96	1,14	0,95	0,87	0,98	1,29	1,11
Kraków	2005	0,70	1,24	2,02	1,09	1,19	1,55	1,78
	2016	0,58	1,21	1,88	1,37	1,24	1,14	1,54
Krosno	2005	1,33	0,84	0,43	0,69	0,82	0,64	0,54
	2016	1,25	0,91	0,75	0,46	0,92	0,87	0,81
Legnica	2005	0,96	1,03	0,87	0,97	1,06	1,03	0,95
	2016	1,07	0,90	0,99	0,80	1,06	0,85	0,92
Leszno	2005	1,13	1,07	0,76	1,24	0,80	1,10	0,93
	2016	1,14	1,04	1,00	0,94	0,88	0,85	0,93
Lublin	2005	0,57	1,20	1,07	1,36	1,31	1,04	1,06
	2016	0,56	1,10	0,94	1,61	1,30	1,23	1,07
Łomża	2005	0,67	1,14	0,75	1,49	1,23	0,93	0,84
	2016	0,69	1,17	1,53	0,79	1,22	1,30	1,43
Łódź	2005	0,82	1,09	0,87	1,24	1,14	1,28	1,08
	2016	0,73	1,07	0,91	1,48	1,18	1,11	1,01
Nowy Sącz	2005	0,93	1,31	1,08	0,83	0,94	0,87	0,97
	2016	1,04	1,23	1,00	0,74	0,87	1,01	1,00
Olsztyn	2005	0,71	1,31	1,14	1,29	1,10	1,06	1,10
	2016	0,64	1,09	1,10	1,05	1,30	1,22	1,16
Opole	2005	0,71	1,25	1,24	1,02	1,18	1,45	1,35
	2016	0,70	1,05	0,88	1,08	1,27	1,46	1,15
Ostrołęka	2005	1,02	0,75	0,63	1,10	1,10	0,93	0,78
	2016	1,03	0,87	0,79	1,10	1,07	1,59	1,16
Piła	2005	1,06	1,11	1,05	1,02	0,90	0,89	0,97
	2016	1,06	1,15	0,93	0,77	0,90	0,76	0,85
Piotrków Trybunalski	2005	1,08	0,89	0,76	0,92	1,04	0,80	0,78
	2016	1,02	0,82	0,63	0,67	1,18	0,80	0,71
Płock	2005	1,25	0,91	1,09	0,79	0,86	1,25	1,17
	2016	1,13	0,94	0,74	0,72	0,99	1,28	0,99

*(continued)*

Table 4. Continued.

CITY	year	sectors:						
		B – F	G – J	I alone	K – L	M – U	R alone	I + R
Poznań	2005	0,74	1,35	1,62	1,18	1,06	1,06	1,34
	2016	0,60	1,13	0,98	1,37	1,26	0,97	0,98
Przemyśl	2005	0,62	1,03	0,77	1,22	1,37	1,48	1,13
	2016	0,63	1,09	0,73	0,87	1,33	1,51	1,09
Radom	2005	0,83	1,08	0,64	1,05	1,16	0,84	0,74
	2016	0,96	1,02	0,78	0,67	1,10	0,94	0,85
Rzeszów	2005	0,84	1,17	0,62	1,15	1,08	0,78	0,70
	2016	0,74	1,07	0,98	0,97	1,23	0,79	0,89
Siedlce	2005	0,89	1,00	0,33	0,99	1,15	0,63	0,48
	2016	0,91	1,01	0,54	0,62	1,14	0,95	0,73
Sieradz	2005	0,92	0,79	0,19	0,86	1,27	0,98	0,59
	2016	0,96	0,82	0,18	0,69	1,23	0,74	0,44
Skierniewice	2005	0,84	0,85	0,31	0,87	1,31	1,03	0,67
	2016	1,05	0,71	0,63	0,83	1,20	0,87	0,74
Słupsk	2005	0,84	0,89	0,91	1,53	1,20	1,36	1,14
	2016	0,98	0,86	1,17	1,27	1,11	1,30	1,23
Suwałki	2005	1,10	0,87	0,56	0,89	1,02	1,04	0,80
	2016	1,16	0,88	0,73	0,86	0,96	1,12	0,91
Szczecin	2005	0,70	1,33	1,39	1,27	1,10	1,22	1,30
	2016	0,60	1,26	1,47	1,19	1,20	1,15	1,32
Tarnobrzeg	2005	0,71	0,97	0,24	1,23	1,33	1,09	0,67
	2016	0,70	0,85	0,68	0,94	1,43	1,34	0,99
Tarnów	2005	1,06	1,07	0,74	0,82	0,95	0,61	0,68
	2016	1,06	0,99	0,83	0,66	1,02	0,77	0,80
Toruń	2005	1,01	1,10	0,87	1,04	0,96	1,11	0,99
	2016	0,78	1,18	1,30	1,50	1,05	1,25	1,28
Wałbrzych	2005	1,17	0,86	0,46	0,83	0,95	1,15	0,81
	2016	1,19	0,69	1,02	0,61	1,11	1,37	1,18
Warszawa	2005	0,46	1,55	1,80	2,31	1,09	1,49	1,64
	2016	0,39	1,30	1,42	2,73	1,18	1,21	1,33
Wrocław	2005	1,21	0,73	0,23	0,86	0,99	0,60	0,42
	2016	1,30	0,79	0,79	0,80	0,91	0,67	0,74
Wrocław	2005	0,68	1,24	1,54	1,46	1,16	1,10	1,32
	2016	0,55	1,16	1,38	1,71	1,26	1,10	1,25
Zamość	2005	0,64	1,25	0,80	1,03	1,25	1,76	1,29
	2016	0,58	1,13	1,08	0,93	1,34	1,45	1,25
Zielona Góra	2005	0,63	1,30	0,98	1,42	1,18	1,12	1,05
	2016	0,69	1,16	0,92	1,07	1,18	1,38	1,13

Source: authors' compilation.

In terms of culture, entertainment and recreation oriented activities (sector R) in 2016, a medium level of specialisation was characteristic for Jelenia Góra, Katowice, Ostrołęka, Przemyśl (over the study period the FIS measure increased in each of these cities). In Kraków and Zamość, the degree of specialisation in this sector shrank from medium to low. The remaining urban centres presented, at most, a low level or lack of specialisation in this sector.

The results of analysis of the FIS values, calculated for the I and R sectors combined, NACE Rev. 2 2007, are quite interesting (see Table 4). Kraków displayed the highest, although declining, level of specialisation in tourist functions in the group of cities analysed (2005 – 1.78, 2016 – 1.54). The national capital, Warszawa, was characterised by a decreasing, from medium to low, level of specialisation in this economic sector (2005 – 1.64, 2016 – 1.33).

Fifteen cities (Białystok, Elbląg, Gdańsk, Jelenia Góra, Koszalin, Lublin, Łódź, Olsztyn, Opole, Przemyśl, Słupsk, Szczecin, Wrocław, Zamość and Zielona Góra)

featured a stable, low level of specialisation regarding this function. In Katowice, Kielce, Łomża, Nowy Sącz, Ostrołęka, Toruń and Wałbrzych, tourist functions developed over this period of 11 years and gained a city-forming character, whereas Poznań, Gorzów Wielkopolski, Biała Podlaska and Płock lost their specialisation in tourism functions, which in each case was low in 2005.

In the other cities, the degree of specialisation in tourist functions, measured using this method, were not of an exogenous nature.

#### **4.2. The level of development of tourist functions in the cities analysed using a model-free synthetic measure**

Initial analysis of the values of the characteristics collected for the study (Table 5) leads to the conclusion that the level of development of tourism functions declined in 12 of the analysed cities – Gorzów Wielkopolski (by 31.11%), Kalisz (by 5.41%), Konin (by 40.48%), Nowy Sącz (by 21.92%), Olsztyn (by 5.71%), Ostrołęka (by 18.64%), Piła (by 2.22%), Piotrków Trybunalski (by 5.95%), Przemyśl (by 8.67%), Siedlce (by 6.56%), Skierniewice (by 65.52%) and Zielona Góra (by 23.40%). In the other centres, a comparison of the Baretje and Defert index for 2005 and 2016 indicates an increased level of development of tourism functions. The intensity of tourist traffic went up in 39 of the analysed cities – only Ciechanów, Gorzów Wielkopolski, Kalisz, Konin, Leszno, Ostrołęka, Piła, Skierniewice, Włocławek and Zielona Góra recorded a decline in the value of the Charvat index.

The level of development of tourism infrastructure, as measured by the occupancy density ratio, declined – compared to changes in the values of the two previous indicators – in the largest number of the analysed cities. In 2016, the 14 following cities were characterised by a lower occupancy density ratio compared to 2005: Częstochowa, Gorzów Wielkopolski, Kalisz, Konin, Nowy Sącz, Olsztyn, Ostrołęka, Piła, Piotrków Trybunalski, Przemyśl, Rzeszów, Siedlce, Skierniewice, Zielona Góra. The other cities recorded an increase in the occupancy density ratio. More detailed information is presented in Table 5.

Based on the data from Table 5, supplemented by the FIS values for the combined I and R sectors of NACE Rev. 2 2007 (see Table 4), a model-free synthetic measure of the level of development of tourism functions in the regional capitals was calculated (Table 6).

It is noticeable that the level of development of tourism functions in the analysed cities, as measured by the model-free synthetic measure is highly varied. In 2005, Sieradz was the lowest ranked in this respect, its score being only 16.4% of the value recorded in the highest ranked city, Kraków. In 2016, the lowest ranking was also taken by Sieradz, the value of the measure being only 9.4% of the value for ranking leader, again Kraków. In 2005, among the current voivodship capitals, the lowest ranks were occupied by Bydgoszcz with the value of the measure being 0.205 and Kielce 0.235 (Kraków's score was 0.633). By 2016, this situation had changed and the worst ranking positions were taken by Gorzów Wielkopolski and Zielona Góra, which presented similar results. The values of the measure for these cities constituted 24.7% and 25%, respectively, of the score of the ranking leader.

**Table 5.** Baretje and Defert index, Charvat index and occupancy density ratio for the analysed cities.

CITY	Baretje and Defert index		Charvat index		Occupancy density ratio	
	2005	2016	2005	2016	2005	2016
Biała Podlaska	0,96	1,11	70,73	78,18	11,43	12,98
Białystok	0,54	0,79	61,84	108,80	16,86	23,06
Bielsko-Biała	0,72	1,0 2	85,85	124,80	10,21	14,10
Bydgoszcz	0,53	0,92	45,05	113,26	11,08	18,52
Chełm	0,63	0,71	55,46	58,54	12,34	12,94
Ciechanów*	0,76	1,18	70,24	45,30	10,52	15,88
Częstochowa	1,17	1,24	110,00	137,49	18,04	17,59
Elbląg	0,87	1,05	63,46	121,32	13,83	15,95
Gdańsk	2,12	3,37	193,42	460,78	37,04	59,60
Gorzów Wielkopolski	0,90	0,62	98,49	94,84	13,06	8,90
Jelenia Góra	2,51	2,87	253,16	435,38	20,02	21,19
Kalisz	0,74	0,70	58,31	51,47	11,54	10,41
Katowice	0,84	1,32	104,45	224,34	16,18	23,77
Kielce	0,74	1,23	61,70	132,28	14,17	22,08
Konin	0,42	0,25	48,79	26,69	4,18	2,33
Koszalin	0,42	0,79	47,27	79,46	5,40	8,68
Kraków	2,03	3,93	331,25	653,23	46,92	92,04
Krosno	0,39	0,88	26,14	94,97	4,30	9,30
Legnica	0,51	1,10	65,24	127,00	9,61	19,77
Leszno	0,44	0,45	58,11	55,42	8,88	9,06
Lublin	0,68	0,95	77,19	117,56	16,22	22,07
Łomża	0,28	0,48	25,56	38,12	5,48	9,15
Łódź	0,46	0,97	65,24	130,53	11,99	23,08
Nowy Sącz	0,73	0,57	46,27	60,61	10,88	8,22
Olsztyn	3,50	3,30	151,14	213,95	69,31	64,93
Opole	0,60	1,04	81,13	152,36	7,96	12,77
Ostrołęka	0,59	0,48	45,16	30,89	10,86	8,62
Piła*	1,58	1,15	102,82	99,08	11,52	8,24
Piotrków Trybunalski	0,84	0,79	28,83	52,27	9,97	8,81
Płock	0,32	0,68	42,18	72,83	4,63	9,42
Poznań	1,32	1,68	131,79	258,33	28,83	34,62
Przemysł	1,50	1,37	100,53	130,31	22,77	18,48
Radom	0,31	0,45	35,38	60,50	6,37	8,73
Rzeszów	1,06	1,49	107,28	185,69	31,09	23,85
Siedlce	1,22	1,14	45,27	99,64	29,47	27,47
Sieradz*	0,20	0,26	11,26	19,24	1,73	2,16
Skieniewice*	0,29	0,10	24,91	16,97	4,24	1,37
Słupsk	0,60	0,89	46,95	77,19	13,74	19,02
Suwałki	0,67	1,43	60,56	130,16	7,00	15,09
Szczecin	1,27	1,67	154,78	217,62	17,39	22,53
Tarnobrzeg	0,41	0,56	30,21	39,87	2,40	3,13
Tarnów	0,57	0,81	51,67	82,23	9,35	12,33
Toruń	1,01	2,01	120,97	263,26	18,05	35,17
Wałbrzych	0,17	0,74	15,75	92,54	2,49	9,94
Warszawa	1,26	1,64	183,00	322,43	41,27	55,63
Włocławek	0,51	0,75	76,49	60,03	7,21	9,99
Wrocław	1,14	1,74	177,06	302,85	24,65	37,83
Zamość	1,55	2,31	101,71	166,82	34,43	49,77
Zielona Góra	0,94	0,72	86,71	70,10	19,21	3,62

\*- due to no data being available for 2016, the values from the previous year were used.

Source: authors' compilation.

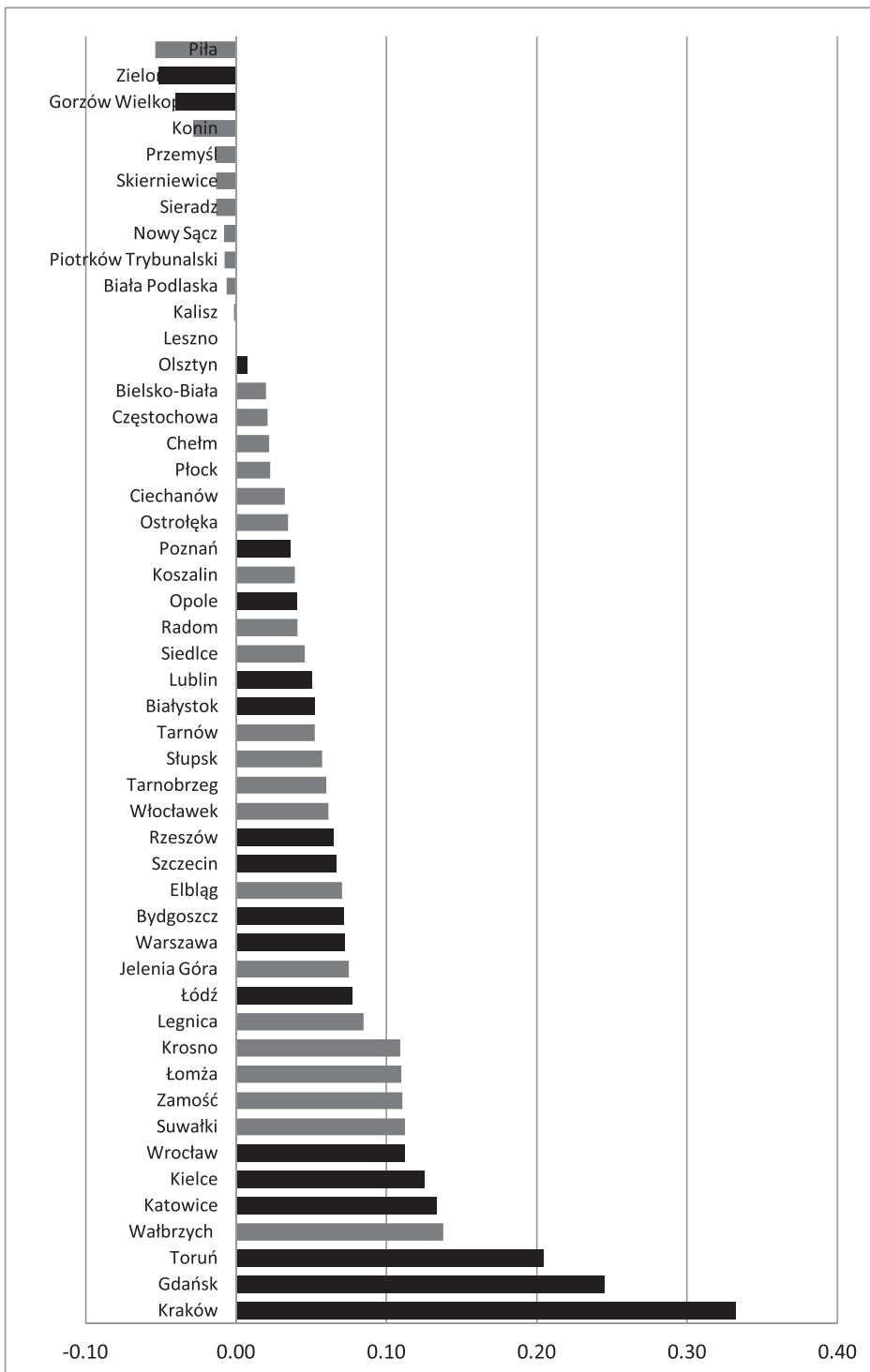
In 2005, the best ranking among former voivodship capitals was taken by Jelenia Góra (value of the measure 0.494). Eleven years later, it also occupied the first position in this group (2016 score 0.570, 59% of the value recorded for Kraków).

**Table 6.** The values of the  $h_t$  model-free synthetic measure arranged in ascending order for the analysed cities (based on data from 2005 and 2016).

City	2005	city	2016
Sieradz	0,104	Sieradz	0,091
Krosno	0,122	Skierniewice	0,121
Skierniewice	0,134	Konin	0,138
Wałbrzych	0,137	Piotrków Trybunalski	0,194
Tarnobrzeg	0,138	Radom	0,195
Włocławek	0,140	Tarnobrzeg	0,198
Radom	0,154	Włocławek	0,201
Łomża	0,160	Leszno	0,205
Konin	0,167	Kalisz	0,220
Tarnów	0,176	Nowy Sącz	0,222
Ciechanów	0,194	Ciechanów	0,226
Ostrołęka	0,194	Ostrołęka	0,229
Suwałki	0,197	Tarnów	0,229
Piotrków Trybunalski	0,201	Krosno	0,231
Leszno	0,204	<i>Gorzów Wielkopolski</i>	0,233
<i>Bydgoszcz</i>	0,205	Chełm	0,234
Chełm	0,212	Płock	0,236
Płock	0,213	<i>Zielona Góra</i>	0,242
Legnica	0,217	Piła	0,253
Koszalin	0,220	Koszalin	0,259
Kalisz	0,221	Bielsko-Biała	0,263
Nowy Sącz	0,230	Biała Podlaska	0,265
<i>Kielce</i>	0,235	Łomża	0,270
Łódź	0,238	Wałbrzych	0,275
Siedlce	0,242	<i>Bydgoszcz</i>	0,276
Bielsko-Biała	0,243	Siedlce	0,288
Słupsk	0,253	Legnica	0,302
<i>Białystok</i>	0,255	Częstochowa	0,303
Elbląg	0,260	<i>Białystok</i>	0,307
<i>Lublin</i>	0,265	Suwałki	0,309
Biała Podlaska	0,271	Słupsk	0,310
<i>Gorzów Wielkopolski</i>	0,273	Łódź	0,315
<i>Katowice</i>	0,276	<i>Lublin</i>	0,316
<i>Opole</i>	0,280	<i>Opole</i>	0,320
Częstochowa	0,282	Elbląg	0,330
<i>Rzeszów</i>	0,291	Przemysł	0,340
<i>Zielona Góra</i>	0,293	<i>Rzeszów</i>	0,356
<i>Toruń</i>	0,299	<i>Kielce</i>	0,360
Piła	0,307	<i>Katowice</i>	0,410
Przemysł	0,354	<i>Szczecin</i>	0,436
<i>Szczecin</i>	0,370	<i>Poznań</i>	0,437
<i>Wrocław</i>	0,392	<i>Toruń</i>	0,503
<i>Poznań</i>	0,400	<i>Wrocław</i>	0,505
Zamość	0,411	Zamość	0,522
<i>Gdańsk</i>	0,483	<i>Warszawa</i>	0,565
<i>Warszawa</i>	0,493	Jelenia Góra	0,570
Jelenia Góra	0,494	<i>Olsztyn</i>	0,630
<i>Olsztyn</i>	0,623	<i>Gdańsk</i>	0,728
<i>Kraków</i>	0,633	<i>Kraków</i>	0,966

Source: authors' compilation.

Graph 1 illustrates the difference between the values of the indicator in 2005 and 2016 for each city. Positive values correspond to an increase in the value of this indicator, and hence in the level of the development of tourism functions in a given city, whereas negative values indicate a decrease in the importance of these functions in a city. To summarise, in 38 out of the 49 cities, the most rapid development of tourism functions was observed in Kraków, Gdańsk and Toruń. A decline was recorded in 11



**Graph 1.** Increase/decrease in the value of the  $h_i$  indicator.

**Table 7.** The situation in 2005 – higher level of development in current capitals ( $p < 0.001$ ).

	Mean value	Standard deviation
Capital cities	0.3502	0.1297
Former capital cities	0.2189	0.0846
All	0.2671	0.1205

Source: authors' compilation.

**Table 8.** The situation in 2016 – higher level of development in current capitals ( $p < 0.001$ ).

	Mean value	Standard deviation
Capital cities	0.4392	0.1888
Former capital cities	0.2579	0.0960
All	0.3245	0.1618

Source: authors' compilation.

**Table 9.** Changes in the years 2005–2016.

Increase in the value of the indicator	Mean value	Standard deviation
Capital cities	0.0889	0.0951
Former capital cities	0.0390	0.0477
All	0.0574	0.0722

Source: authors' compilation.

cities, including two of the current voivodship capitals – Gorzów Wielkopolski and Zielona Góra.

A comparison of the level of development of tourism functions according to the status of a city was carried out using the Wilcoxon signed-rank test and the Student's *t*-test (Table 7 and 8). These tests were used to compare the level of development of such functions at the beginning and end of the study period, as well as the rate of development during this period. The conclusions of this analysis do not depend on the test applied.

In 2005 and 2016, in 12 of the 13 current voivodships where at least one former capital city was also located, the measure of development for the capital was higher than the average measure for the former capital cities in the same voivodship. The exception was the Lubelskie voivodship, which is probably due to the fact that Zamość is a popular city among tourists with a centuries-long history and extensive tourist base.

The research also covered the transformations which took place between 2005 and 2016 (Table 9). The increase in the values of the indicator is significant for the capitals, former capitals and overall ( $p < 0.001$  in each case). The average increase in the indicator is greater in the current capitals than in the former ones ( $p < 0.05$ ). In turn, variance in the growth of the indicator is clearly higher among current capitals than in the case of the former ones ( $p < 0.001$ , F test), which suggests that the average increase in the indicator among capital cities depends on a small number of 'stars' (primarily Kraków, but also Gdańsk and Toruń).

Among the voivodship capitals, the value of the indicator fell only in Zielona Góra and Gorzów Wielkopolski (both cities are the capitals of the Lubuskie voivodship). Among the former capitals, both Zamość and Jelenia Góra present well-developed tourism functions. A certain level of stagnation can be observed in the Łódzkie voivodship (Piotrków Trybunalski, Sieradz, Skierniewice – in all cases the value of the



indicator declined) and, to some degree, in the Wielkopolskie voivodship (Kalisz, Konin, Leszno, Piła).

### **Limitations of the study**

The results of the study are based on data from the Polish Central Statistical Office (GUS), which do not cover businesses which employ fewer than nine people. Such firms are not required to register their data with GUS. Since this phenomenon affects various sectors of the economy to a similar degree, this should not significantly affect the conclusions. A somewhat more important limitation of the study lies in the existence of the ‘informal economy’, i.e., unregistered economic activity. According to recent research the share of the informal economy in the overall level of economic activity has systemically fallen and in 2016 was estimated to be 19.2%, which is similar to the mean level in the EU (Łapiński et al., 2016). However, the structure of the informal economy indicates that tourism (catering and accommodation) plays a relatively large role. The development of services by the sharing economy (e.g., Airbnb, Uber) and the lack of appropriate legal regulation with regard to such business models will probably lead to a loosening of control over the informal economy and its possible expansion in the tourism sector. Hence, it is necessary to take into account the fact that these results probably underestimate the role of tourism in the employment structure. In addition, it is likely that the effect of the informal economy is stronger in large cities.

### **Plan for future research and practical implications**

The above comments should be taken into account in future research. In particular, the level of employment in the informal economy should be estimated. Unfortunately, this is problematic due to a lack of reliable sources. Gaining such information must thus be based on an investigation of a representative sample of entrepreneurs. From this point of view, it is postulated that statistical data should be supplemented by the results of qualitative research, which will be used to appropriately weigh the data from traditional sources.

Both the results of the study presented here and the perspectives for future studies have important practical implications. First, this study is a retrospective comparison of the development trajectories of cities that retained the status of regional capital with cities which lost this status. This gives a greater understanding of the consequences of administrative reform. Secondly, these conclusions may be used in a prospective analysis when planning an appropriate policy for regional development. Knowledge regarding the differing effects of administrative reform will help lead to better control over developmental processes and avoiding the negative consequences of certain reforms.

## **5. Conclusions**

This article has analysed the role and dynamics of tourism functions in the economic structures of voivodship capitals in Poland, and attempts to determine the

relationship between the status of a city (losing or retaining the function of voivodship capital) and the trajectory of changes in terms of tourism functions. Thus, the authors tried to meet the objectives defined in the introduction.

In the first part of the study, the significance of tourism functions in the economies of the cities analysed was determined. First, this was based on the theory of the economic base of a city and by conducting an in-depth analysis of the number of employees in various economic sectors. The results enable us to answer the question as to what extent tourism forms the economic base of regional capitals. The majority of Polish voivodship capitals are polyfunctional centres with well-developed service sectors, including tourism oriented services. It is worth noting, however, that in half of the 18 cities analysed the importance of tourism functions, as measured by the share in the exogenous group, recorded a decline. This is all the more significant, as it was particularly observable in the group of the largest Polish cities, those with at least 500,000 residents. This is not attributable to lower levels of employment in the tourism sectors (Sections I and R of NACE Rev. 2 2007) – on the contrary, the corresponding levels of employment went up. However, the dynamics of employment in other NACE sectors, constituting the economic base of the analysed cities, was even higher (predominantly in services). It is worth emphasising that between 2005 and 2016 the size of exogenous groups increased in 17 out of the 18 current regional capitals. It can be assumed that this result is a derivative of dynamic development processes taking place in regional capitals, and also in the structures of their economies.

Next, based on the Baretje and Defert index and the Charvat index, as well as the occupancy density ratio, a synthetic measure was constructed and used to develop a ranking of the cities analysed in terms of their tourism functions. The first position was taken by Kraków – a city with great traditions in tourism. In the vast majority of the cities studied (in 39 out of 49), the scope of tourism oriented activities expanded in the years 2005–2016, although the differing dynamics of this phenomenon according to the status of a city is worth emphasising. The value of this indicator declined in only 10 out of 49 cities, which indicates a relative fall in the share of tourism in the functional structure of these cities.

In the second stage of the study, a comparison of the level and rate of development of tourism functions in the groups of current and former voivodship capitals was carried out using the Wilcoxon signed-rank test and the Student's *t*-test. These tests confirmed differences between these two groups of cities. In 2005, the former voivodship capitals already had lower levels of development of tourism functions compared with the cities which retained this status. This situation was repeated in 2016. However, the distance between these two groups of cities was larger. Overall, tourism services in Poland developed significantly in the period 2005–2016, and thus it can be assumed that retaining the status of voivodship capital functioned as an incentive for the even faster development of tourism functions. Hence, the trajectory of the development of tourism functions depends on administrative changes, e.g., whether a city retains or loses the role of regional capital.

Both the results of this research and the methodology proposed in the study have practical applications. The use of such tools enables the implementation of decision support systems by local authorities (Kazak & Szewrański, 2013; Kazak, van Hoof &

Szewrański, 2017) and hence supports modern decision making processes, which should serve as the basis of advanced regional policy, aiming at higher coherence of the polycentric urban system.

## ORCID

Katarzyna Przybyła  <http://orcid.org/0000-0002-9717-1599>

Marian Kachniarz  <http://orcid.org/0000-0003-3574-5398>

Alina Kulczyk-Dynowska  <http://orcid.org/0000-0002-1312-3224>

David Ramsey  <http://orcid.org/0000-0002-7186-1436>

## References

- Agarwal, S. (2002). Restructuring seaside tourism. *Annals of Tourism Research*, 29(1), 25–55. doi:10.1016/S0160-7383(01)00002-0
- Butnaru, G. I., Miller, A., Nita, V., & Stefanica, M. (2018). A new approach on the quality evaluation of tourist services. *Economic Research-Ekonomska Istraživanja*, 31(1), 1418–1436. doi:10.1080/1331677X.2018.1477611
- Clark, T. N. (2004). *The City as an Entertainment Machine*. Research in Urban Policy, 9, Elsevier – JAI Press, Amsterdam, ISBN 0-76231-060-X.
- Dziewoński, K., & Iwanicka-Lyrowa, E. (Eds.) (1977). Rozmieszczenie i migracje ludności a system osadniczy Polski Ludowej [Distribution and migration of population vs. settlement system of People's Republic of Poland]. *Prace Geograficzne*, 117, Warsaw: IG PAN.
- ESPON project 1.4.3. Final Report (2007). *European Community ESPON Programme*, Luxembourg.
- Grosse, T. G. (2002). Przegląd koncepcji teoretycznych rozwoju regionalnego [The review of theoretical concepts of regional development]. *Studia Regionalne i Lokalne*, 1(8), 25–48.
- Hall, C. M. (2002). Tourism in Capital Cities. *Tourism*, 50(3), 235–248.
- Hall, P. (2006). Seven types of capital city. In D. L. A. Gordon (Ed.), *Planning Twentieth Century Capital Cities*. New York: Routledge.
- Hayllar, B., Griffin, T., & Edwards, D. (Eds.) (2008). *Urban Tourism Precincts*. Oxford: Elsevier [CrossRef]
- Harvey, D. (1989). *The Condition of Postmodernity*. Oxford: Blackwell.
- Hospers, G. (2002). Industrial Heritage Tourism and Regional Restructuring in the European Union. *European Planning Studies*, 10(3), 397–404. doi:10.1080/09654310220121112
- Judd, D. R., & Fainstein, S. S. (Eds.) (1999). *The Tourist City*. New Haven, Connecticut: Yale University Press.
- Kachniarz, M. (2011). *The Diversification of Efficiency in Public Services*. Hradec Economic Days 2011, Economic Development and Management of Regions, part II, Hradec Kralove: University of Hradec Kralove.
- Kazak, J., & Szewrański, S. (2013). Indicator-based environmental assessment of spatial planning with the use of Community Viz. In I. Ivan, P. Longley, J. Horak, D. Fritsch, J. Cheshire, T. Inspektor (Eds.) *GIS OSTRAVA 2013 - Geoinformatics for City Transformation*. Ostrava: Vsb-Tech Univ Ostrava.
- Kazak, J., van Hoof, J., & Szewrański, 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. doi:10.1016/j.rser.2017.03.039
- Kowalczyk, A. (2002). *Geografia turystyki [Geography of tourism]*. Warsaw: PWN.
- Krajewski, P. (2016). Landscape changes in selected suburban area of Bratislava (Slovakia). In L. Halada, A. Baca, M. Boltizar, *Landscape and Landscape Ecology: Proceedings of the 17th International Symposium on Landscape Ecology*. Bratislava, Slovakia: Institute of Landscape Ecology, Slovak Academy of Sciences, 110–117.

- Krajewski, P. (2017). Assessing Change in a High-Value Landscape: Case Study of the Municipality of Sobotka, Poland. *Polish Journal of Environmental Studies*, 26(6), 2603–2610. doi:10.15244/pjoes/70896
- Łapiński, G., Peterlik, M., & Wyznikiewicz, B. (2016). *Szara strefa w polskiej gospodarce w 2015 r. [The informal economy in Poland in 2015]*. Gdańsk: Instytut Badań nad Gospodarką Rynkową.
- Lijewski, T., Mikułowski, B., & Wyrzykowski, J. (2008). *Geografia turystyki Polski [The geography of tourism of Poland]*. Warsaw: PWE.
- Lorentzen, A., & Hansen, C. J. (2012). *The City in the Experience Economy. Role and Transformation*. London: Routledge.
- Maguire, J. (2005). *Power and Global Sport: Zones of Prestige, Emulation and Resistance*. London: Routledge.
- (2009). Maitland, R., & Newman, P. (Eds.). *World Tourism Cities: Developing Tourism off the Beaten Track*. London and New York: Routledge.
- Malizia, E. E., & Feser, E. J. (1999). *Understanding Local Economic Development*. New Jersey: Rutgers, Centre for Urban Policy Research.
- Mayer, H., Sager, F., Kaufmann, D., & Warland, M. (2016). Capital city dynamics: Linking regional innovation systems, locational policies and policy regimes. *Cities*, 51, 11–20.
- Novy, J., & Huning, S. (2009). New tourism (areas) in the ‘New Berlin’. In R. Maitland, P. Newman (Eds.), *World Tourism Cities*. London: Routledge.
- Parysek, J. (2004). Transformacja społeczno-gospodarcza i jej konsekwencje w miastach polskich [Socio-economic transformation and its impact in Polish cities]. In J. Ślodziak (Ed.), *Rozwój miast i zarządzanie gospodarką miejską [Urban development and urban economy management]*. Opole: University of Opole Press.
- Pivcevic, S., & Pranicic, D. G. (2012). Innovation activity in the hotel sector – the case of Croatia. *Economic Research-Ekonomska Istraživanja*, 25(sup1), 337–363. doi:10.1080/1331677X.2012.11517568
- Przybyła, K., & Kulczyk-Dynowska, A. (2018). Transformations and the level of tourist function development in Polish voivodship capital cities. *Sustainability*, 10(6), 2095. Vol doi: 10.3390/su10062095
- Przybyła, K. (2010). *Wpływ specjalnych stref ekonomicznych na kształtowanie się bazy ekonomicznej miast [The impact of special economic zones on the economic base development in cities]*, Wrocław: Wrocław University of Environmental and Life Sciences Press.
- 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. Vol. doi: 10.3390/su10082860
- Przybyła, Z., & Przybyła, K. (2011). *The transformations in the functional structure of Jelenia Góra. Hradec Economic Days 2011, Economic Development and Management of Regions, part II*, Hradec Kralove: University of Hradec Kralove.
- Raszowski, A., & Bartniczak, B. (2018). Towards Sustainable Regional Development. Economy, Society, Environment, Good Governance Based on the Example of Polish Regions. *Transformations in Business & Economics*, 17(2), 225–245.
- Raszowski, A., & Głuszczyk, D. (2015). Regional creativity factors. Towards new dimensions of regional development. In T. Löster, T. Pavelka (Eds.), *The 9th International Days of Statistics and Economics*, Prague: Libuše Macáková, Melandrium.
- Ritchie, B. W., & Peirce, S. (2007). *National Capital Tourism: Marketing, Planning and Development Issues*. Gold Coast, Australia: Sustainable Tourism CRC (Cooperative Research Centre for Sustainable Tourism).
- Ślodziak, J. (2001). *Przestrzeń miasta i jej przeobrażenia [City space and its transformations]*. Opole: University of Opole Press.
- Spirou, C. (2011). *Urban Tourism and Urban Change. Cities in Global Economy*. London: Routledge.

- Stanisławski, M. (2010). Ocena efektywności restrukturyzacji wybranego sektora gospodarki w Polsce z wykorzystaniem taksonomicznego miernika rozwoju społeczno – gospodarczego [The assessment of restructuring effectiveness of a selected economy sector in Poland using the taxonomic measure of socio-economic development]. *Bank I Kredyt*, 41(6), 85–104.
- Świąder, M., Szewrański, S., & Kazak, J. (2016a). The local development index as a tool for the evaluation of socio-spatial inequities, *Hradec Economic Days 2016, part.3* (pp. 1055–1066), Hradec Kralove: University of Hradec Kralove.
- Świąder, M., Szewrański, S., & Kazak, J. (2016). Spatial-Temporal Diversification of Poverty in Wrocław. *Procedia Engineering*, 161, 1596–1600. doi:10.1016/j.proeng.2016.08.632
- Therborn, G. (2002). Monumental Europe: the National Years: on the Iconography of European Capital Cities. *Housing, Theory and Society*, 19(1), 26–47. doi:10.1080/140360902317417976
- Tokarczyk-Dorociak, K., Kazak, J., & Szewrański, S. (2018). The impact of a large city on land use in suburban area – the case of Wrocław (Poland). *Journal of Ecological Engineering*, 19(2), 89–98. doi:10.12911/22998993/81783
- Twardzik, M. (2009). Zmiana funkcji handlowej małych miast w woj. śląskim [Change in the trading functions of towns in the region of Silesia]. In: T. Marszał (Ed.) *Funkcja usługowa małych miast [The service sector in towns]*, Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
- van Hoof, J., & Kazak, J. (2018). Urban ageing. *Indoor and Built Environment*, 27(5), 583–586. doi:10.1177/1420326X18768160
- Vujko, A., & Gajic, T. (2014). Opportunities for tourism development and cooperation in the region by improving the quality of tourism services – the ‘Danube Cycle Route’ case study. *Economic Research-Ekonomska Istraživanja*, 27(1), 847–860. doi:10.1080/1331677X.2014.975517