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The base of institutions in county centres in Poland

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THE BASE OF INSTITUTIONS IN COUNTY CENTRES IN POLAND

ABSTRACT. A number and variety of existing institutions condition functional diversification of a town. Determination of institutional basis of investigated central places as nine institutions representative for county centres has enabled to distinguish and classify 374 towns in Poland. Varied numbers of coexisting institutions in particular towns have been applied to classify county centres and to determine their importance in the system of central places. In the 20th century, representative institutions, despite their various origins and historical development, proved a tendency to concentrate and co-exist in the same or almost the same towns (county centres) all over the country.

KEY WORDS: institution, central place, county, Poland.

INTRODUCTION

Contemporary institutions have been undergoing intensive development and transformations, which result from the general technological progress and social transformations, which took place in the 20th century. Most of the existing institutions are connected with the service aspect of human activity. When related to a town, institutions determine the stage of its complexity (Szajnowska-Wysocka, 1995). A number and variety of existing institutions condition functional diversification of a town. The institutional diversification results from the size of a town and occurrence of its central functions (Christaller, 1933).

Assumptions of the theory of central places include, among other factors, servicing a given area by the central place that is performing central functions

for the inhabitants of the place and the surrounding settlement units (Haggett, 2001). Those functions are carried out by appropriate institutions concentrated in the central place. It is always possible to distinguish, among many towns, groups of central places performing the same or similar activities. Those activities are the groups of institutions creating a centrality level.

County centres have been chosen due to the specific situation, which has existed in Poland since 1st June 1975, when the county level of government administration ceased to exist. For hundreds years till that date, counties had existed as separate units of administration division, possessing appropriate county institutions (Petryszyn, 2004). Obviously for such a long time, types of institutions, scope of their tasks, locations as well as the range of activities of particular institutions had changed. After 1975, many county institutions continued to function as so called special institutions. They were usually organised in the same towns to provide smooth functioning of the public life.

Vast possibilities to locate county institutions in particular towns in the period of 1975-1988 inspired the author to investigate occurrence of those institutions in the last year before introducing the new territorial organisation in Poland (Petryszyn, 2003). Short-term stabilization of types and numbers of institutions in Polish towns occurred in that time. The choice of the subject has also been influenced by the lack of scientific investigations covering all county centres in Poland. In fact, Z. Chojnicki, T. Czyż (1972) investigated the problem of county towns, but they analysed only their spatial distribution.

GOALS AND A RANGE OF THE INVESTIGATIONS

Characteristic base of institutions, which occur in county towns, has been the subject of the investigations. The following goals of the investigations have been set: identification of groups of institutions representative for county towns, classification of county centres and determination of regional varieties in the spatial layout of selected county centres.

The collected data concerning the selected institutions have covered all Polish towns (875 towns in 1998). Telephone directories, issued for each of the former 49 voivodeships, have been the main source of information on location of the institutional basis.

The main analytic research method belongs to the group of methods called by K. Polarczyk (1980) an *arbitrary method of standard typology*. The selected typology method enables to determine, which of the selected institutions may be assumed as representative for the given level of centrality, by analysis of simultaneous occurrence of typical institutions in the centres at the investigated level of centralism. The determined group of institutions becomes a factor, which helps to establish to which level of centrality particular towns belong. The me-

thod was suggested by R. Dickinson (1947) and applied by M. Chilczuk (1963) and J. Everson, B. Fitzgerald (1976).

Such common instruments as an arithmetic mean or quotient determinants of density have also been applied (Runge, 1992). An index of the *mean population served by a county centre* has been suggested as the following formula:

$$P_o = \frac{L}{N}$$

Where: L – population in the given region,
N – number of county centres in the given region.

A method of graphs, belonging to a group of cartographic methods, has been applied to analyse the distance between selected county centres in regions. The method uses a “Wrocław dendroid”, which spans rectilinearly all the centres (Kostrubiec, 1972). It has been applied to measure for example the urban settlement net in Łódź voivodeship (Sobczyński, Głowacka, 2000).

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When selecting institutions the author has tried to cover the biggest possible number of them from various fields of social life (administration, health service, education etc.) However, certain limitations, caused by availability of data have occurred. Therefore, only such institutions, which character allowed providing complete telephone-address data, have been selected. The function of a county centre has been determined by means of particular institutions included in scientific papers of various authors. Hospitals and secondary schools have been the most frequently mentioned. Courts, police and fire departments have also been mentioned quite often. Apart from those, B. Jałowiecki (1993) has also mentioned a tax office and Sanepid (Sanitary and Epidemiological Station) and M. Koter (1999) a county (“rejon”) office.

At the beginning 20 institutions have been taken to analyse. After thorough analysis of occurrence of particular institutions in towns in former Katowice and Opole voivodeships (Petryszyn, 2003) nine institutions have been selected: 1) county employment office, 2) tax office, 3) Police county headquarter, 4) county headquarter of fire department, 5) county court, 6) county sanitary and epidemiological station, 7) general hospital for at least 100 beds, 8) emergency ambulance transport, 9) school of art. The above mentioned institutions, have been considered as representative for county centres in 1998, during investigations of towns in the whole country.

Each of the selected institutions has its own genesis, history of development and its own range of tasks and activities undertaken in the given social-geographic space (Petryszyn, 2005). General courts are the oldest institutions dating back to the early Middle Ages. History of institutions collecting taxes, also dating back to the Middle Ages, is almost as old as the history of courts. The next representative institution defined as a district police headquarter in this investigation is a functional part of a larger institution called Police. The term *police*, had wider meaning during the First Republic than today as its duties covered all matters connected with the public order and management, including administration of towns and other properties. Police functions were most frequently connected with administrative division of the country. Establishing hospitals is also related to the Middle ages. The history of fire departments in Poland began as late as in the 19th century, when special fire-fighting units were organized. The net of the other institutions started to form in the 20th century.

Significant variation of the time of formation as well as the way to reach the current range of task and organization system in the country space have been observed in all the investigated institutions. However, all the above mentioned institutions have one common feature. At least one rung of their organisation structure has been located in the same or almost the same towns in the whole country.

According to the address data an inventory of occurrence of the 9 representative institutions in all towns in the country has been prepared. Existence of the investigated institutions has been determined in 425 towns, which is almost a half of the total of towns in Poland. The total numbers of towns in the country with particular institutions are presented in Table 1.

Table 1. Total numbers of towns in Poland with particular representative institutions

REPRESENTATIVE INSTITUTION	A	B	C	D	E	F	G	H	I
Number of towns	366	307	335	276	307	317	362	349	246

a - county employment office, b - tax office, c - Police county headquarter, d - county headquarter of fire department, e - county court, f - county sanitary and epidemiological station, g - general hospital for at least 100 beds, h - emergency ambulance transport, i - school of art.

Source: The author's investigation results.

Despite different numbers of centres with particular representative institutions, coexistence of the investigated institutions in a large number of towns in the whole country has been observed. It proves that the institutions have not been located incidentally in towns, but they are concentrated in particular central places. Only less than 10% of the 425 investigated towns have one of the

institutions. Occurrence of only one of the institutions in a town, from the typological point of view is considered to be insignificant, as the method assumes necessary coexistence of institutions in a given town. Therefore, 51 towns with a single institution have been excluded from further investigations. Hence, coexistence of the institutions representative for a county centre has been confirmed in 374 towns in the whole country.

CLASSIFICATION OF COUNTY CENTRES

Due to division of the country into relatively small territorial units - 49 old voivodeships, and introduction of a new territorial division - 16 large voivodeships (regions) on 1st January 1999, the empiric data base have had to be transformed into the new regional system. Current voivodeships have been treated as areas - regions where further investigation results are presented.

Population is the easiest and also one of the most important factors applied to classify a town (Szymańska, 1989). The number of inhabitants has been used during the investigation to measure the *size* of a central place. While, the base of the representative institutions in the centres has become a base for typology and classification of central places. The investigated institutions show tendency to group in particular towns. Hence, following the method of standard typology, coexistence of selected institutions in particular towns has been determined as a base to distinguish types of central places at the county level. Varied numbers of coexisting institutions in particular towns have been applied to classify county centres and to determine their *importance* in the system of central places.

The towns with the maximum group of institutions have been defined as completely formed, stable county centres and a separate A class, the class of a complete group (9) of representative institutions has been created for them. The towns with 5 to 8 institutions have been divided into two classes of stable county centres: a B class - a large group (7-8) of representative institutions and a C class - a medium group (5-6) of representative institutions. The rest of the towns with less than a half of the coexisting institutions have been defined as unstable county centres and a D class - a small group (2-4) of representative institutions has been created for them.

The total number of county centres from the whole country covered by the classification is equal to 374 ones. The number of centres is the highest in Mazowiecki, Śląski and Wielkopolski regions and the least of them have occurred in Opolski and Świętokrzyski regions. Most of the county centres belong to the A class (Table 2). The centres belonging to the A class are also dominating in most of the regions. Special structure of county centres occurs in Lubuski region. The number of towns belonging to the D class is equal to the number of the A class, which proves significant differences in importance of the centres.

The B class, the second one is also varied in number in different regions. The least number of towns belongs to the C class, only 33 ones in the whole country. Relatively large number of towns belongs to the last D class; more than to the C class, but half of the B one.

Table 2. Total number of county centres covered by the classification

REGION	CLASSES OF COUNTY CENTRES			
	A	B	C	D
Dolnośląski	13	12	3	-
Kujawsko-Pomorski	8	10	1	3
Lubelski	11	6	2	4
Lubuski	7	2	2	7
Łódzki	14	4	-	3
Małopolski	13	5	-	6
Mazowiecki	12	19	5	3
Opolski	10	-	1	2
Podkarpacki	14	5	2	1
Podlaski	8	2	4	1
Pomorski	13	4	-	4
Śląski	20	5	2	8
Świętokrzyski	6	6	1	-
Warmińsko-Mazurski	7	11	3	1
Wielkopolski	18	10	4	1
Zachodniopomorski	10	6	3	6
POLAND	184	107	33	50

A class - a complete group (9) of representative institutions, B class - a large group (7-8) of representative institutions, C class - a medium group (5-6) of representative institutions, D class - a small group (2-4) of representative institutions.

Source: The author's investigation results.

When analysing distribution of county centres in the whole country and in particular regions, special attention has been paid to existing interrelations between spatial distribution of the centres and population density in the particular regions. Therefore, three coefficients have been calculated for a given region and for the country (Table 3). Population density (G_L) is the first coefficient, the second one is density of county centres (G_{OP}). Apart from them a third one has been suggested; mean number of people served by a county centre (P_o). In 1998 population density in particular regions varied from 60 persons/km² in Warmińsko-Mazurski region to 397 persons/km² in Śląski region. The lowest density of county centres occurred in Podlaski region (7 centres/10,000 km²), and the highest in Śląski region (28 centres/10,000 km²). The values of the mean number

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of people served by a county centre varied from 57,000 persons/centre in Lubuski region to 139,000 persons/centre in Śląski.

Table 3. Population density (G_L), density of county centres (G_{Op}) and mean number of people served by a county centre (P_0)

REGION	G_L [PERSONS/KM ²]	G_{Op} [CENTRES/10 000 KM ²]	P_0 [PERSONS/CENTRE]
Dolnośląski	149	14	105,000
Kujawsko-Pomorski	117	12	95,000
Lubelski	89	9	97,000
Lubuski	73	13	57,000
Łódzki	146	12	127,000
Małopolski	212	16	134,000
Mazowiecki	142	11	130,000
Opolski	116	14	84,000
Podkarpacki	118	12	96,000
Podlaski	61	7	82,000
Pomorski	119	11	104,000
Śląski	397	28	139,000
Świętokrzyski	114	11	102,000
Warmińsko-Mazurski	60	9	67,000
Wielkopolski	112	11	102,000
Zachodniopomorski	76	11	69,000
POLAND	124	12	103,000

Source: The author's investigation results.

The above results show that both population density and, slightly less, density of county centres vary significantly in particular regions. In case of the mean number of people served by a county centre the differences in the regions are smaller. Apart from that the mean values in the whole country have been determined and they are equal to 103,000 people served by a centre and density of county centres - 12 centres per 10,000 km².

Diagrams showing differences of the values in regions have been prepared to analyse correlations between the three coefficients. First interrelation between density of county centres and population density has been investigated. Direct proportional increase of the values of both coefficients has been observed (Fig. 1). Observations of the coefficient values show that increase of population density influences development of new county centres, what in turn causes increase of the general density of county centres. The diagram shows regions of similar values of population density and different density of the county centres. Higher density of the county centres characterises the regions in the west part of Poland, especially those with relatively large number of the D class centres (e.g. Lubuski, Zachodniopomorski). Lower density of the county centres (at the similar popula-

tion density) has been observed in the regions in the east Poland (Podlaski, Lubelski), where settlement net is less developed. Correlation coefficient between the number of centres and population in particular regions has been calculated to prove the relation. The obtained value of the coefficient (0.9126) proves very high directly proportional interrelation of the investigated features.

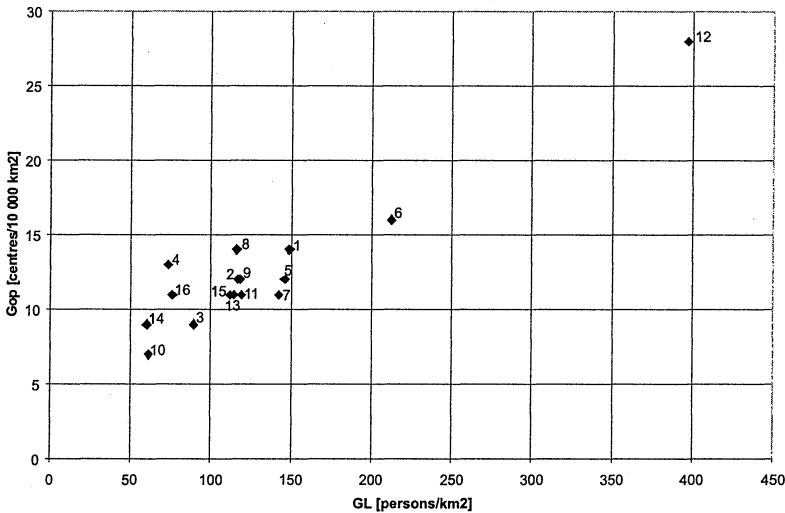


Fig. 1. Interrelation between density of county centres (G_{op}) and population density (G_L) in regions; (1 – Dolnośląski, 2 – Kujawsko-Pomorski, 3 – Lubelski, 4 – Lubuski, 5 – Łódzki, 6 – Małopolski, 7 – Mazowiecki, 8 – Opolski, 9 – Podkarpacki, 10 – Podlaski, 11 – Pomorski, 12 – Śląski, 13 – Świętokrzyski, 14 – Warmińsko-Mazurski, 15 – Wielkopolski, 16 – Zachodniopomorski)

The diagram showing interrelation between the mean number of inhabitants served by a county centre and population density in the region shows that the mean numbers of people served by a given centre are higher in more densely populated regions (Fig. 2). However, interrelation of those two coefficients existed only till the level of approximately 150 persons/km² and 130,000 persons served. Slight increase of the mean value of people served by a county centre has been observed in two regions (Małopolski and Śląski) with much higher population density.

That means, that higher population density influences only formation of new county centres and does not increase the mean value of people served by a single centre. It has been determined that the value of 130-140 thousand of people served by a centre is the mean value of possible servicing in the most densely populated regions of the country. That value considers urbanized regions with very high population density, having at least one urban agglomeration. The mentioned coefficient is in the range of 60 – 100 thousand people in rural regions and the ones having large areas covered with forests.

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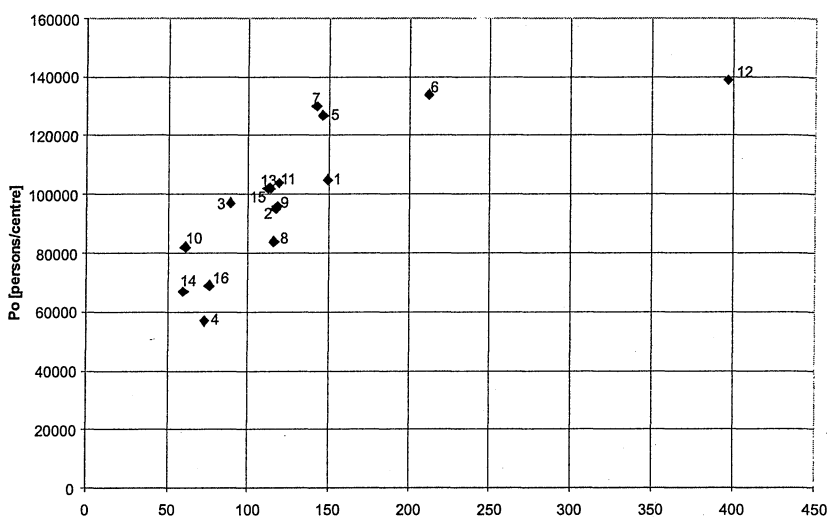


Fig. 2. Interrelation between the mean number of inhabitants served by a county centre (P_0) and population density (G_1) in regions; (1 – Dolnośląski, 2 – Kujawsko-Pomorski, 3 – Lubelski, 4 – Lubuski, 5 – Łódzki, 6 – Małopolski, 7 – Mazowiecki, 8 – Opolski, 9 – Podkarpacki, 10 – Podlaski, 11 – Pomorski, 12 – Śląski, 13 – Świętokrzyski, 14 – Warmińsko-Mazurski, 15 – Wielkopolski, 16 – Zachodniopomorski)

VARIATION OF COUNTY CENTRES IN THE REGIONAL SYSTEM

Analysis of regional differences, considering county centres and their spatial distribution has been carried out in each of the sixteen regions, according to an established system (Petryszyn, 2003). First, selected county centres have been described in each of the regions, considering their class and location. Then, importance of the classified centres has been compared with their size. Minimum distance between the centres has also been determined by spanning the “Wrocław dendroid” in each of the regions.

COMPARISON OF COUNTY CENTRES WITH THE FORMER AND THE CURRENT COUNTY TOWNS

Considering practical application of the obtained investigation results, the net of the determined county centres has been compared with the net of the county towns which existed till 1975 and the net of the current ones. There were 392 counties, including 78 urban counties, in Poland in 1974. However, some of the towns played a double role, a county town and an urban county. Comparison of the net of those towns with the net of determined county centres shows that

only two former county towns (Dąbrowa Białostocka and Niemodlin) were not selected as counties in 1998.

Apart from that, a large group of centres appeared, which were not county towns in 1974. Those centres have been called *new* county centres. Distribution of the new county centres is not regular. Most of them have appeared in the south of Poland in Śląski and Małopolski regions, while no new county centres have been created in 5 regions (Dolnośląski, Łódzki, Podlaski, Świętokrzyski and Warmińsko-Mazurski).

On 1st January 1999, 326 towns became the seats of a county (“starostwa powiatowe”) or a town council with county competence or both institutions in the same place. On 1st January 2002 the number of counties increased by 8 units, hence, the number of county towns has increased to 334.

When comparing the net of the county centres and the current county towns it has been observed that only two towns did not fulfil the criterion of a county centre in 1998 (Polkowice and Bieruń). Thirty two county centres with varied possibilities to perform the tasks of a county town have been noted. Most of the discussed regions occur in north, north-west and south regions of Poland. Four stable county centres belonging to the B class (Bystrzyca Kłodzka, Nowa Ruda, Miastko and Biskupiec) have marked their strongest position.

Table 4. Comparison of the number of the selected county centres, the number of the former county towns and the number of the current county towns

REGION	NUMBER OF COUNTY CENTRES		NUMBER OF COUNTY TOWNS		
	1998	1974	1999	2004	
Dolnośląski	28	28	26	26	
Kujawsko-Pomorski	21	19	19	19	
Lubelski	23	20	20	20	
Lubuski	16	15	11	12	
Łódzki	21	21	20	21	
Małopolski	22	18	19	19	
Mazowiecki	38	36	37	37	
Opolski	12	13	11	11	
Podkarpacki	21	20	20	21	
Podlaski	15	16	14	14	
Pomorski	21	20	18	19	
Śląski	34	28	31	32	
Świętokrzyski	13	13	13	13	
Warmińsko-Mazurski	22	22	17	19	
Wielkopolski	33	32	31	31	
Zachodniopomorski	24	22	19	20	
POLAND	364	343	326	334	

Source: The author’s investigation results.

Comparison of the number of the selected county centres, the number of the former county towns and the number of the current ones leads to interesting results (Table 4). The number of the county towns between 1974 and 2004 decreased only by 9 units. However, there have been more changes as 23 old county towns did not become counties again and 14 new ones appeared. Regional comparison of the former and the current county towns shows that their number has decreased in 8 of the regions (most of them in Lubuski and Warmińsko-Mazurski), it has not changed in 4 regions and increased also in 4 ones.

The final number of the determined possible county centres is larger by 21 towns from the number in 1974 and even much larger – by 30 units - from the current number of the county towns. 11 centres were not counties in the past and they are not counties at present.

CONCLUSION

Determination of institutional basis of investigated central places as nine institutions representative for county centres has enabled to distinguish and classify 374 towns in Poland. However, in 1998 only 364 towns were determined as county centres after estimation of their importance, size, location and their development possibilities. The other 10 towns, which did not fulfil the criteria of a county centre, were determined as *local* centres, the centres of lower level of centrality than a county.

In the 20th century, representative institutions, despite their various origins and historical development, proved a tendency to concentrate and coexist in the same or almost the same towns (central places) all over the country. In the light of the above observations and the fact that in 1988 county centres were established in the same towns (except two), as they had been in 1974 it may be stated that county level of central places has been very stable.

Apart from that, some detailed observations have been made. Considering all 364 county centres, their average density in the whole country is equal to 12 centres per 10,000 km² and the average number of people served by a centre is 106,000 people (inhabitants of a county centre and an additional area). The coefficient of population served by a county centre varies depending on population density in particular regions, but it does not exceed 140,000 people. It has been determined that 130,000 – 140,000 is an average number of people that can be served in the most densely populated regions of the country. Average distances between county centres vary from 12 km in the Śląski region to 31 km in the Podlaski region. In the other regions, the distances are less varied and they range from 20 to 29 km.

Four classes of county centres (A, B, C, and D) have been distinguished according to the number of institutions coexisting in particular towns. In 1998,

50% of the selected towns belonged to class A, almost 30% were in the range of the class B, the least numerous was the class C – only 9% and the class D was a little bigger as – 11% of the centres belonged to that class.

Two basic types of county centres distribution in Poland have been established. Type 1 – characterised by a relatively even distribution of county centres, which may be exemplified by the Wielkopolski region. In certain regions, the even distribution occurs as a circular form or a linear system located along the main communication routes. Type 2 – a concentrated system (agglomeration) of county centres, which occur in different forms depending on geographic and historical conditions; i.e. polycentric Katowice agglomeration (the highest concentration of the centres from 2 – 8 km in the core to 9 – 13 km in the surrounding zone), polycentric Rybnik agglomeration (lower number of centres and larger distances), linear Gdańsk agglomeration (location parallel to the sea coast and the distance 7 – 12 km) and monocentric agglomerations around some of large towns (concentration of centres hardly visible due to a vast area of the main town).

Comparison of county centres importance and their size have not proved any direct relations of those features, however it has revealed interesting data. All county centres over 40,000 inhabitants (except some of them located in large municipal complexes) belong to the class A, the centres over 20,000 but less than 40,000 have been mostly classified as the class A or B, while the centres below 20,000 have varied significantly (class A, B, C or D), with no obvious relation to their size.

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