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Spatial Variations in the Level of Socio-Economic Development of Rural Areas in Poland vis-à-vis Transformation Dynamics in the Pre-Accession Period¹

Abstract: *The aim of the research project was to find an answer to the question whether spatial variations in the level of socio-economic development of rural Poland are gradually disappearing thanks to the cohesion policy pursued in the country or still growing despite this policy. It was assumed that the course of ongoing transformation is dependent on two factors: cohesion policy and the well-known regularity that the effectiveness of investment is higher in more-developed areas. Additionally, an attempt was made to determine how the discussed processes are influenced by policies pursued by local authorities. The analysis was performed on a set of 2,171 local units (LAU 2). The research showed that the high level of socio-economic development is statistically strongly correlated with high transformation dynamics. Meanwhile, correlations between the existing level of development and the activity of local authorities and between transformation dynamics and the activity of local authorities are statistically insignificant.*

The most important conclusions from the research are as follows:

- *Spatial variations in the level of socio-economic development of rural areas are growing despite the policy to even out disparities (cohesion policy);*
- *The actual development dynamics is very weakly correlated with the activity of local authorities in exploiting instruments to stimulate development;*
- *Other factors (e.g. the location rent) have greater influence on spatial variations in development than the cohesion policy pursued.*

Keywords: *cohesion policy, local development, spatial variations*

Introduction

Poland, including its rural areas, is a country exhibiting very strong spatial variations in economic and social development, particularly with respect to settle-

¹ This article has been written as part of a project carried out by IRWiR PAN and funded by the Ministry of Science and Higher Education.

ment structures, availability of infrastructure, agrarian structures, educational structures, etc. These disparities are largely due to differences in the historical development of individual regions. To put it simply, today's spatial variations result to a large extent from the fact that throughout the 19th century Poland was partitioned and occupied by three countries – Russia, Prussia and Austro-Hungary – and in consequence developed under three different economic systems. Additionally, as a result of World War II, Poland's borders were shifted, with the eastern lands of pre-war Poland annexed by the Soviet Union and the western border of the country shifted westwards to the line of the Odra and Nysa Łużycka (Oder and Neisse) rivers. The German population living in the former German territories was relocated to Germany and replaced by Poles, most of them resettled from the former Polish territories in the east.

In contrast to the remaining countries of the former “Eastern Bloc,” the Polish agrarian structure was based on family farms. A majority of large farms, which occupied around 20% of agricultural land, were state-owned farms located in the western and northern part of Poland (former German territories). This sector has already been privatised. The agrarian structure of the family-farming sector showed and still shows very strong variations: apart from southern sub-regions, where the average farm size is around 3 hectares, there are sub-regions where the average farm size exceeds 10 hectares.

There are also great differences in average village size, population density, population structure, character of migration processes (the prevalence of migrations for permanent settlement or of daily commuting to work), established patterns of cooperation, neighbourly help, education expectations from one's children, etc.

One common characteristic of rural areas, however, is that the share of the agricultural function in their economic structure is still too large as regards employment, the structure of livelihood, etc. This is why national programmes for socio-economic development emphasise the need for agricultural restructuring and multifunctional development of rural areas.

The objective of the research project carried out at IRWiR PAN was to search for an answer to the question whether the cohesion policy pursued in the period preceding Poland's EU entry indeed contributed to evening out disparities among individual Polish regions or whether there was a tendency for these disparities to grow further as a result of other factors, like for example the location rent, greater attractiveness of areas with well-developed infrastructure, etc. To find an answer, the researchers tried to determine variations in the level of development and variations in the dynamics of pro-development transformation. If a correlation between them were negative, it would mean that the applied instruments of the cohesion policy were effective; if a correlation were positive, it would mean that the trend for the disparities to grow was stronger. The lack of any such correlation could be interpreted as the stabilisation of existing disparities.

Diagram of the research process

An important problem was to define the notion of level of socio-economic development in such a way so that it could be useful in relation to areas showing very marked structural differences and, as a result, developing according to different strategic objectives. The point was to ensure that the evaluation criteria placed a possibly equal emphasis on very different strategic directions of development depending on the previously established structures and functions of individual areas. For this reason, it was assumed that the goal of local development is to create local structures able to generate decent incomes for the residents and satisfy their diverse aspirations. Of course this objective can be achieved by means of many different methods, which are difficult to compare on a single continuum. For these reasons, the analysis of the level of socio-economic development was based on many empirical variables grouped into sub-components and components.

The researchers decided that the level of socio-economic development is defined by two components – economic and social – assigned appropriate weights. The economic component comprised five sub-components: 1. the degree of deagrarianisation of the economic structure, 2. the level of development of the agricultural sector, 3. the level of development of the non-agricultural sector, 4. the extent to which the local labour market is balanced, 5. the level of affluence and availability of infrastructure. The social component comprised three sub-components describing: 1. the population structure, 2. the local education system, 3. social activity (Figure 1).

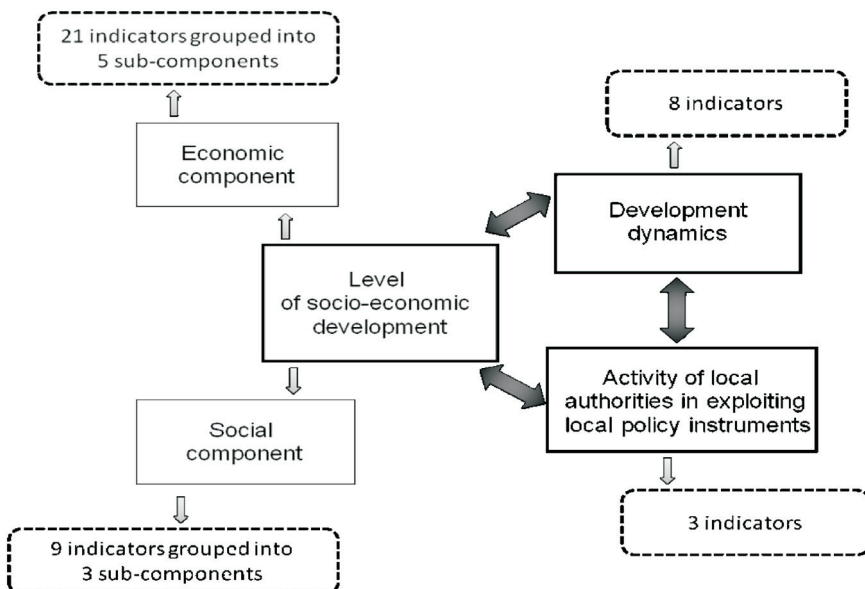


Figure 1. Diagram of the research process

Structure of indicators used in the research project

Each of the sub-components required selecting an appropriate base of empirical indicators, determining their relative weights and adopting a method to construct a synthetic measure on the basis of several variables. Synthetic measures for individual sub-components (with appropriate weights assigned with the use of the expert's method) were used to construct measures for components. The latter measures were then used to evaluate the level of socio-economic development of the local system.² One can add that 30 indicators were used to determine the level of socio-economic development. However, it is necessary to explain how the sub-components of the research construct were understood.

The degree of deagrarianisation of the local economy described proportions between the agricultural and non-agricultural sectors from the point of view of their contribution to employment, providing livelihoods for the local community, etc. The description of the agricultural sector was based on the assumption that this sector is well developed when it has a high percentage of large high-output commercial farms run by people with sufficiently high qualifications. It was also assumed that the non-agricultural sector is well developed when both the number of businesses and employment in them are high. However, the situation is unfavourable when public services – local government, schools, health service, police, etc. – have a high share in non-agricultural employment.

Each of the two sectors – agricultural and non-agricultural - can be well-developed or poorly-developed, irrespective of whether the local labour market is balanced or unbalanced. The authors took into account both the scale of open unemployment and hidden unemployment on family farms. Family farms which have a fragmented agrarian structure – such a structure is typical of the southern regions of Poland – are particularly prone to hidden unemployment and the irrational use of working time of individual members of the farming household. In Polish conditions, this factor was very important because of the specific way in which the scale of unemployment in rural areas is statistically registered.

The last sub-component, describing the affluence of the local system and the availability of infrastructure, contained information about the availability of infrastructure, the ability of the local economy to generate sources of revenue for the local budget and the percentage of population dependent on social assistance (de-stimulants).

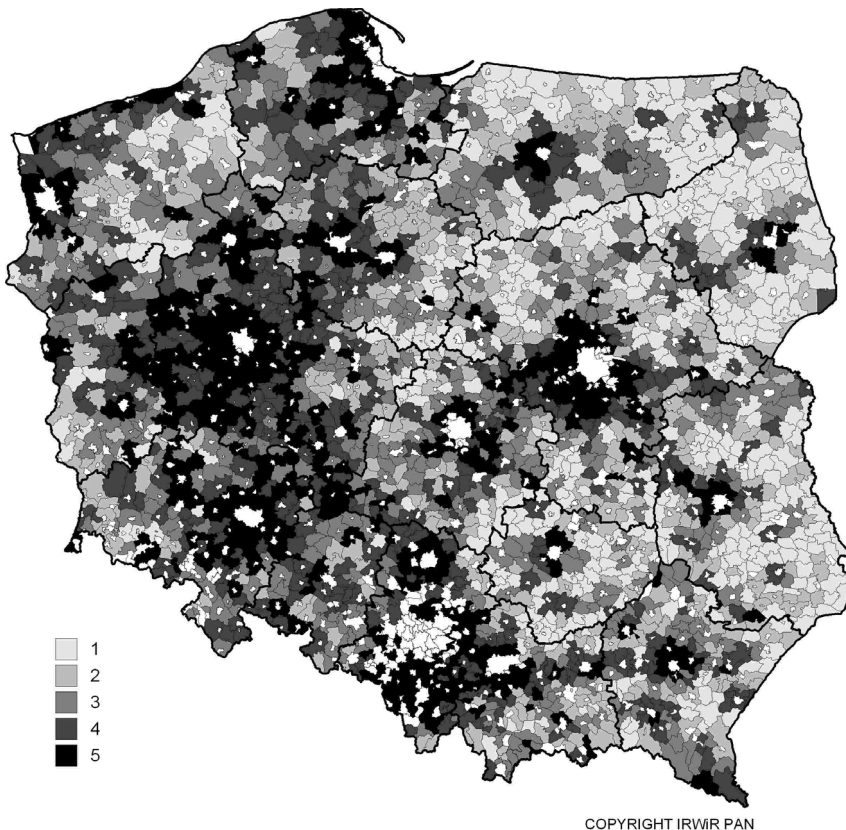
As has been mentioned above, the social component comprised sub-components describing the population structure, local education system and social activity. In Poland, there are strong regional variations in the population structure in rural areas. Apart from areas with low population density, a gender structure of the population distorted due to selective migration and an age structure characteristic of the constrictive age pyramid, there are also areas with relatively young

² Details concerning the methodology of the research project are beyond the scope of this paper but can be obtained from the authors.

populations – centres for the concentration of migrants from both rural and urban areas. As a result, the age pyramid model for these areas is close to the expansive pyramid. This has obvious consequences for the quality of the local labour force, the capital of skill, etc. It is noteworthy that in the first group of regions there is a considerable shortage of young women (in some areas the ratio of women to men aged 24–34 is 80 to 100), while in the second group the number of women in this age cohort is larger than the number of men.

The subcomponent describing the local education system evaluated the structure of educational attainment, school achievements and school attendance rates for people of university age. Social activity was measured by civic activity, the ability of the local people to self-organise and mechanisms of election to local government.

Map 1 shows a synthetic picture of spatial variations in the level of socio-economic development based on the above-presented assumptions. For the purpose of the analysis, the distribution of the communes (analysed units) was divided into groups of 20% each, ranging from those with the lowest score (1) to those with the highest score (5). White areas on the map are territorial units which have the status of cities and for this reasons were not covered by the research.



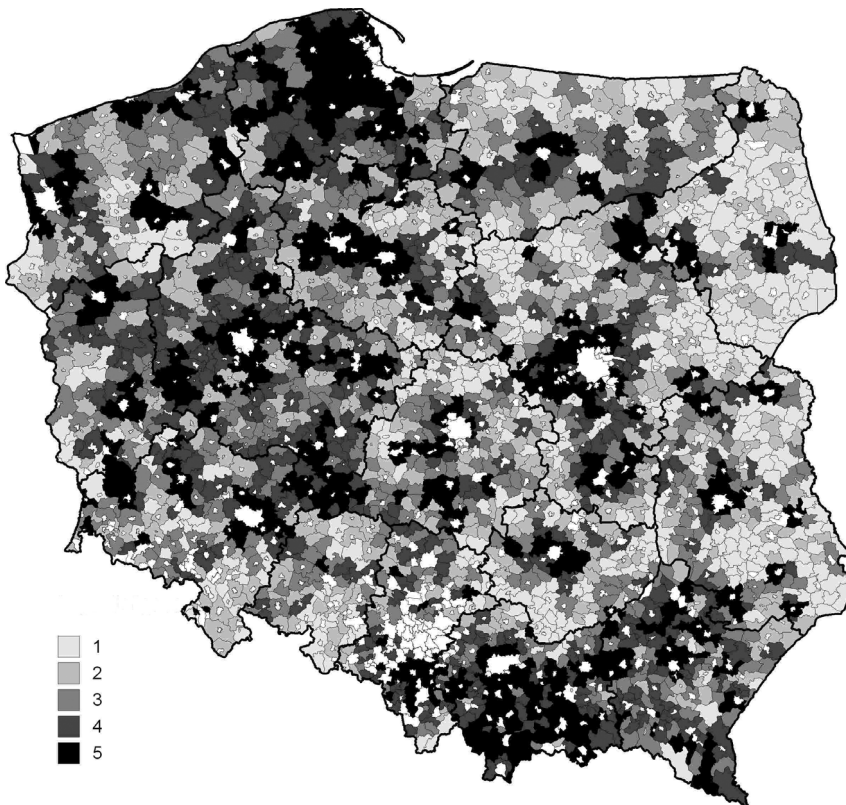
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Map 1. Synthetic measure of the level of socio-economic development of Polish rural areas

Another research problem was to define the notion of transformation dynamics. Eight indicators were selected, each describing an important aspect of this transformation and containing information about pro-development tendencies. The indicators related to processes in the area of public finances at the local level, the direction of change on the local labour market, the scale and structure of changes in the non-agricultural sector, the attractiveness of the area for migrants (in this case the authors used migration effectiveness ratio, i.e. net migration as a proportion of gross migration turnover) and the scale of construction activity.

After assigning weights to the indicators, a synthetic index was built – it showed spatial variations in generalised dynamics of pro-development transformation on the basis of trends noted in the last years of the pre-accession period. The results of the analysis are presented on Map 2. As is the case with Map 1, the distribution of the 2,171 units covered by the research was divided into five quintiles of 20% each.

The third of the basic research notions – the activity of local authorities in exploiting instruments to stimulate development – turned out to be very difficult to analyse because of the adopted assumption that empirical material for all the units covered by the research had to be uniform, i.e. obtained in exactly the



Map 2. Synthetic measure of pro-development transformation dynamics in Polish rural areas

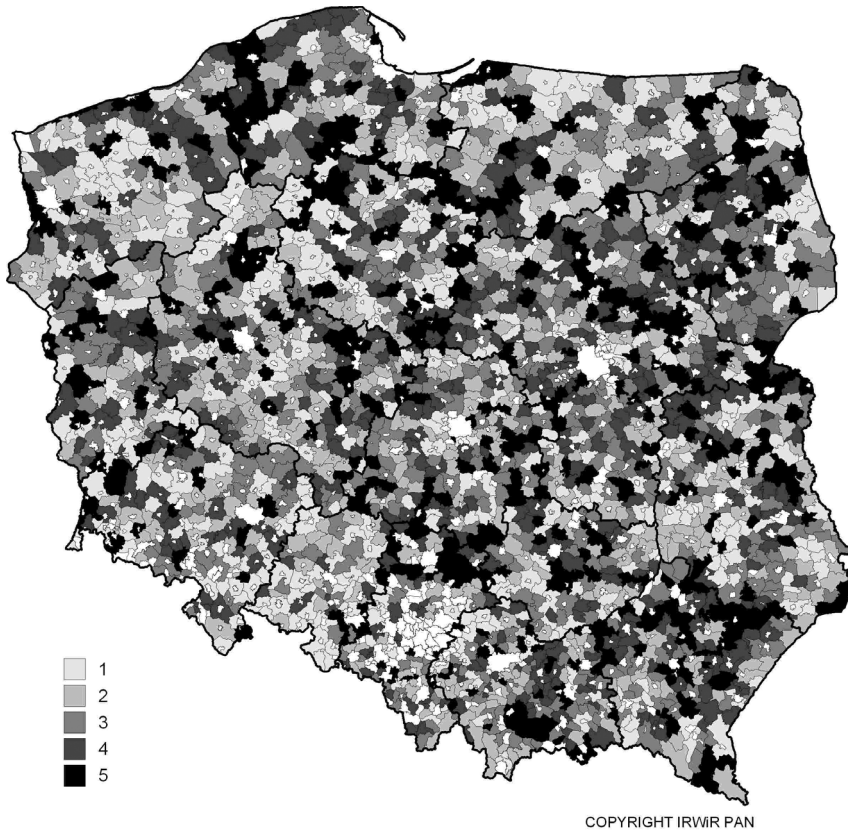
same manner. Meanwhile, national statistics contained only a small amount of data which could be used for the purpose of the research.

Attempts to use other sources of data also encountered numerous constraints. As a result, the researchers managed to put together and verify the credibility of only three indicators, however ones with a considerable cognitive value. The following factors were used as indicators: 1. share of investment spending in the total expenditure from the commune's budget (three years' average), 2. per-capita value of subsidies the commune received from external sources for investment projects being the responsibility of the local government (three years' average), 3. per-capita value of investments for which the commune applied to the paying agency of the SAPARD programme throughout the whole period when this programme was in force (according to formally correct applications submitted by the commune).

It should be explained that in the period covered by the research, local authorities at the commune level had an opportunity to apply for funding for their investment projects from many sources, both national and foreign. To receive this assistance, communes had to take part in grant-type contests. The money was distributed by government agencies, private foundations, foundations associated with the Church, state authorities at the regional level (Poland has 16 regions – provinces), etc. The money came from funds earmarked for environmental protection, the development of education, retraining programmes, counteracting unemployment, the development of rural infrastructure, training courses, the development of enterprise, the preparation of strategic plans for local development, and other funds. The sources of funding included pre-accession funds (e.g. PHARE), loans from the World Bank, assistance from individual European countries and the United States and Church funds. For example, funds for environmental projects were connected with an agreement with Poland's creditors and resulted from the restructuring of Poland's foreign debt.

The third indicator was the value of subsidies for which the communes applied within the pre-accession SAPARD programme - to be exact, the part of the programme intended for local governments and designated for the development of utility infrastructure. The advantage of this indicator is that it shows the activity of local authorities in searching for possible external sources of investment funding. The indicator is not a measure of success of the submitted applications as it takes into account the total value of funding the commune applied for, irrespective of whether the application had been accepted or rejected. Application terms had been identical for all the communes and the value of assistance accounted for up to three fourths of the total value of an investment project.

One of the conditions which the applicants had to meet was that the applications had to be consistent with the commune's strategic local development plan. As the preparation of such plans is a responsibility of local governments at the commune level, communes which had not prepared a strategic document of this kind could not submit applications for funding.



Map 3. Activity of local authorities in exploiting instruments of local pro-development policy

Local governments have important powers with respect to shaping conditions for the development of enterprise and a climate for business. However, the researchers did not manage to collect data of statistical character for this purpose and the problem is the subject of additional field research not covered by this paper.

The measurement results for the three synthetic variables were subject to a correlation analysis. Additionally, after the distributions were plotted on a map it was possible to determine the most important features describing the existing spatial variations both in the level of socio-economic development and the ongoing transformation process.

Findings

It follows from the performed analysis that the dynamics of pro-development transformation is strongly, significantly and positively correlated with the level of development. Meanwhile, the activity of local authorities was of insignificant importance for this dynamics and neither did it determine the level of development. The correlations presented in Figure 2 were the first rough evaluation of

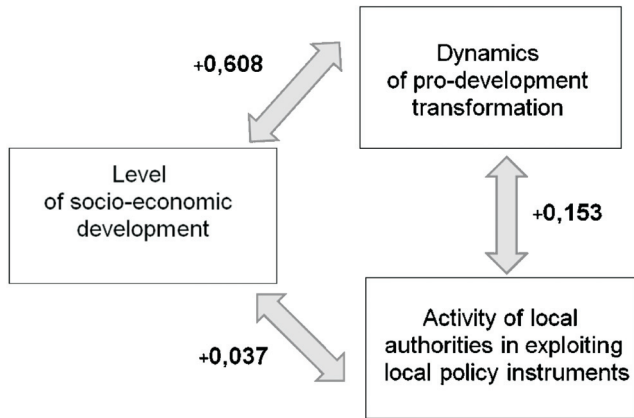


Figure 2. Correlations among spatial distributions of synthetic measures of the level of socio-economic development, transformation dynamics and the activity of local authorities

the effectiveness of cohesion policy goals. They were later verified with the use of more sophisticated research methods, which however confirmed the trends depicted in the chart.

It turns out that, although the policy to even out disparities in the socio-economic development of rural areas is in place, these disparities are not diminishing and even show a rising trend. This means that the applied regional policy instruments are too weak and cannot ensure the achievement of the set goal. Benefits resulting from a decision to locate an investment project in more developed areas are greater than benefits offered by the spatial policy. At the same time, it turns out that there is practically no statistical correlation between the activity of local authorities and the level of socio-economic development: local governments can be active or passive, irrespective of whether the area where they operate is particularly well developed or backward. Their activity can only have a very slight influence on the actual dynamics of the ongoing transformation process, which may mean that the economic policy instruments available to local authorities are relatively weak or used in a wrong way. It is worth remembering that the research covered the period preceding Poland's EU accession, i.e. a period when local policy instruments connected with structural funds had been unavailable in Poland. Now, when Poland is an EU member, the amount of money available for rural development is much higher than under pre-accession programmes.

An analysis of distributions shown on the maps, correlations among them and empirical indicators not presented in this article due to limited space leads to a number of more detailed conclusions:

- The most developed rural areas, which additionally continue to develop fast, form rings around the largest cities. They attract migrants both from remote rural areas and from the city which is the centre of the system (suburbanisation). The direction of these areas' development is not uniform: apart from villages turning into luxury residential areas for wealthy urban dwellers, one

can see the emergence of satellite centres of industry and services as well as dormitory villages for the urban workforce.

- Not all average-sized cities stimulate the emergence of suburban areas developing thanks to proximity to urban markets. Generally, one can say that the more developed the structure of social and economic functions in these cities, the stronger their ties with the surrounding rural areas. Industrial cities whose economies had once been based on a single industrial plant or a single industry which declined under market conditions (e.g. the heavy industry, machine industry, arms industry, steel industry) show the weakest trend to form suburban areas.
- Poland continues to be divided into the western part, more developed and showing a greater transformation dynamics, and the eastern part, which is less developed. This historical division is modified by another trend, associated with location close to larger cities or in remote areas (core and peripheries). This trend indicates that under market conditions the core-periphery continuum is gaining in importance. This continuum repeats itself in hierarchical – national and regional – systems.
- Under market conditions, the strength of influence of some location-related factors changed. The importance of location in the vicinity of larger cities with a well-developed functional structure increased considerably. Location in the vicinity of border crossings turned from a factor with a negative influence on development (in the period when border traffic was strictly controlled and limited) to a factor strongly conducive to development (following the opening of borders when cross-border cooperation became possible).

A typology of communes with the use of E. Diday's dynamic clustering method (1971) was also made. Four factors were taken into account: the level of economic development, the level of social development, the dynamics of transformation in development processes and the activity of local authorities in using instruments of local development policy. This method, non-hierarchical by definition, enabled the identification of four basic groups of communes with similar combinations of indicators. The findings confirmed to a large extent the analysis results obtained with the use of hierarchical methods, however, they allowed additional insights.

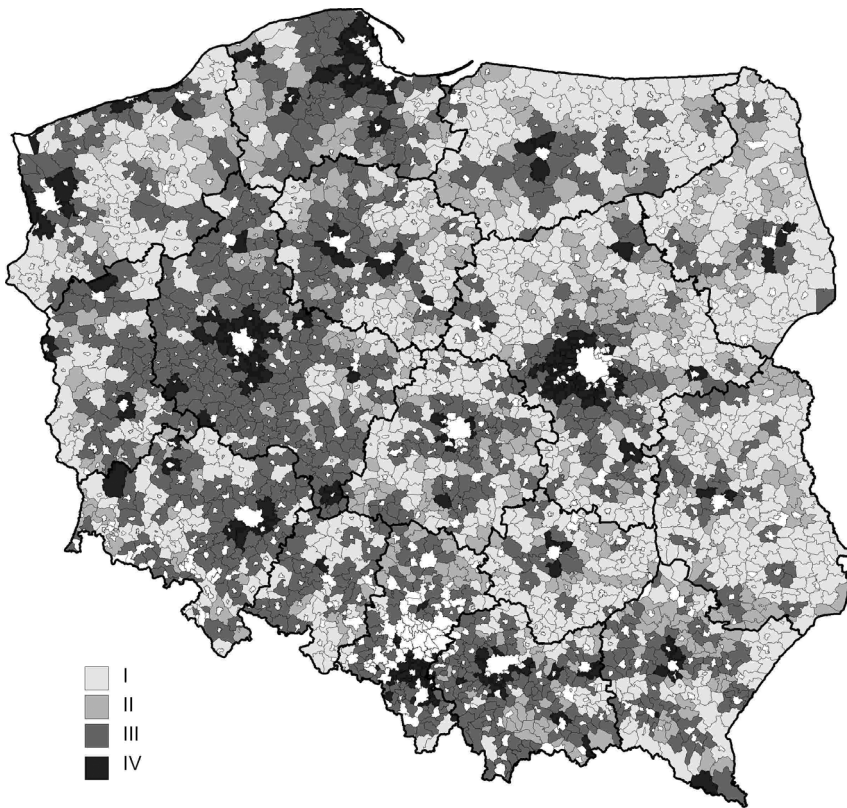
The typological procedure applied to the total population of 2,171 communes revealed that they are divided into four types differing in terms of characteristics, number of residents and location.

Type I is composed of 854 units (39%) for which all the four indicators are markedly lower than average. The communes included in this type are inhabited by 31.5% of the country's total rural population, which means that these units have a relatively low population density. They also experience unfavourable demographic processes (high elderly ratio, relatively poor indicators associated with the structure of education, etc.). A vast majority of these communes are located in the eastern and central part of the country (in the 19th century these areas were occupied by Russia) far from large urban centres. Almost all com-

munes situated in Poland's eastern border area belong to this type. In western Poland, communes of this type are found in areas whose economies had once been dominated by the sector of state-owned farms. These areas are experiencing great social and economic difficulties following the restructuring of this sector (including high unemployment among people with the lowest qualifications, the disintegration of the settlement structure partly transformed into housing estates of agricultural workers).

Type II is composed of 425 communes (19.5%) inhabited by 16.7% of the rural population. These communes show lower than average level of economic development, an average level of social development, average transformation dynamics and a very high level of local authorities' activity. Communes of this type make up most of western Poland, apart from suburban areas and areas of former state-owned farms. In eastern Poland, these communes form transitional zones around large cities (second or third ring of communes) or can be found as suburban areas around medium-sized cities.

Type III is composed of 730 units (33.6%) inhabited by 40.2% of the rural population. What puts it apart from Type II is a lower level of local authorities' activ-



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Map 4. Non-hierarchical typology of communes by level of economic development, level of social development, transformation dynamics and activity of local authorities

ity and a higher level of economic development (close to the country's average). These communes are scattered across the country and form clusters only in few places. This type is often found around well-developed medium-sized cities, along main transport routes and in areas with well-developed industrial or tourist functions (however, not in areas with major tourist attractions).

Finally, Type IV is composed of the smallest number of communes – only 162 (7.5%) – inhabited by 11.6% of the rural population. These communes have the best indicators of the level of socio-economic development and transformation dynamics. Additionally, the activity of local authorities in these communes is higher than average, though slightly lower than that recorded in the communes of Type II. These communes form the first (sometimes second) ring around the largest cities and are located in areas with major tourist assets.

Conclusions

The typology presented above confirms that the existing spatial variations in the level of rural Poland's development result from two factors. One is rooted in history and is the consequence of different development paths of individual Polish regions in the 19th century and the border shifts after World War II. The other is associated with the tendency towards the concentration of well-developed areas around large cities (centres of the settlement structure) and the concentration of backward areas in peripheries. The spatial variations which result from the above-mentioned two factors are modified by sustainable development and cohesion policies only to a slight extent.

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