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## **SOCIAL AND SPATIAL DIVERSIFICATION OF SOCIAL EXCLUSION (WITH SPECIAL EMPHASIS ON KUJAWSKO-POMORSKIE VOIVODESHIP)**

**Summary:** The main cause of social exclusion is poverty, but the authors say that poverty is not synonymous with social exclusion. The authors assume that poverty is an essential dimension of social exclusion – perhaps the most important one, which apart from the remaining (selected) objective factors, will consist of characteristics social exclusion in Poland, with particular emphasis on the situation in kujawsko-pomorskie voivodship. An article in the theoretical section attempts to sort out the discussion on the issue of social exclusion, the relationship between poverty and social exclusion. Moreover focuses on the measurable factors illustrating this issue and its spatial differentiation.

At the very beginning to the analysis of spatial diversity of social exclusion was the review and selection of diagnostic variables characterizing this problem. Then using linear alignment method, referred as Perkal's synthetic indicator, was made the classification of surveyed voivodships (from the point of view of the obtained indicators of the level of of threat to its inhabitants by social exclusion). In addition, as a supplement to Perkal's synthetic indicato, was used Ward's agglomeration method.

The main part of the article focuses on the subjective analysis of selected factors conducive to social exclusion. The study assumes that social exclusion is not the same as economic scarcity, that's why were taking into account indicators that cover a wide range of socio-economic phenomena, also affecting non-economic aspects of life, including: registered unemployed persons unemployed for more than 1 year in the total number of unemployed persons; at risk of relative poverty line; at risk of "legal" poverty rate; at risk of extreme poverty rate; average monthly per capita disposable income in the household; numer of persons in families benefiting from social assistance due to poverty per 1000 inhabitants; percentage of dwellings equipped with bathroom; indicator of the test result in lower secondary school in mathematics and natural science; percentage of children covered by pre-school education.

At the end examined subjects were sorted according to the value of Perkal's index and the classification of the voivodships was performed. Again particular attention at this stage of the analysis was put on the situation of kujawsko-pomorskie voivodship.

**Key words:** social exclusion, poverty, voivodship, Perkal's synthetic indicator, Ward agglomeration method.

## 1. INTRODUCTION

Reducing the scale of poverty and social exclusion is one of the five development objectives of “the Europe 2020 strategy for smart, sustainable and inclusive growth”. The issue of social exclusion is still very common, concerns numerous people and various social groups, and takes different forms, character and severity. In addition to unemployment, poverty and social inequality, social exclusion can be regarded as the basic barrier that hinders social progress and integration.

## 2. QUANTIFICATION OF SOCIAL EXCLUSION

In order to present the topic highlighted in the title of this article, it is necessary to clarify the notion of “social exclusion”, which is not an easy task as this phenomenon is defined in different ways due to its complexity. This ambiguity and multidimensional nature contribute to the existence of different data concerning social exclusion – everything depends on the adopted methodological solutions, definitions, and what social exclusion symptoms will be taken into account. The authors of the study fully share the opinion that social exclusion is not synonymous with poverty, but they assume that poverty comprises one of significant aspects of social exclusion. Hence, social exclusion has been generally defined for the purposes of this paper as the combination of six aspects of deprivation including employment, poverty, income, living conditions, education, and access to goods and services. Quantification of the above-mentioned dimensions has allowed to develop the synthetic indicator of social exclusion risk in voivodeships.

To ensure that severity of the social exclusion risk in voivodeships is determined, the first part of the research procedure applied a multidimensional analysis which included monetary and non-monetary determinants conducive to social exclusion. The analysis of social exclusion severity in voivodeships was conducted on the basis of a set of diagnostic variables in two time periods: the first one for the year 2016 and the second one for the year 2006<sup>1</sup>. Such an assumption was intended to verify the accepted thesis claiming that the problem of social exclusion in spatial terms is characterized by a significant durability. This assumption suggests that an overlap exists between four dimensions of the Polish space diversities including the historically developed level of development and wealth, transformation processes, social attitudes as well as the efficiency of local governments [Hryniewicz 2009; Gorzelak 2009].

At the stage of selecting the measuring instruments – diagnostic variables to analyse severity of the social exclusion risk on a regional basis, there were

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<sup>1</sup> Because of the methodological changes that occurred between 2006 and 2016 and that prevent the comparability of data for the variables: persons who were granted social benefit under the decision – poverty per 1 thousand citizens; adults participating in education or training; a percentage of flats with a bathroom, the latest available data was used for the study.

followed such principles as relevance from the perspective of the analysed phenomenon, unambiguity and preciseness of their definition, logicity of mutual correlations, maintained proportionality of the representation of partial phenomena, measurability (the ability of a numerical expression of the parameter level) and the availability and completeness of statistic data for the studied objects [Młodak 2009]. It is noteworthy that the choice of variables in each study is saddled with a certain amount of the researcher's subjectivity which cannot be eliminated due to the multidimensional and complex nature of development processes determining the risk of social exclusion. Nevertheless, the material scope of the analysis results from the substantive criterion for the selection of variables and from the availability of statistical data. These criteria provided the basis for developing a set of potential diagnostic variables. Another stage of the selection of indicators included the analysis of the correlation matrix regarding individual variables, conducted to eliminate strongly correlated variables (with a similar information load). In spite of the correlation between poverty variables, these variables were not removed from the area of the analysis. This was intentional because these variables, on one hand, reveal different aspects of the analysed phenomenon and, on the other hand, they emphasize the importance of poverty for the issue of social exclusion. The next stage focused on identifying the nature of diagnostic meters, i.e. the division into stimulants and destimulants<sup>2</sup>. Having considered the character of the variables, they were standardized and, as a result, all variables expressed in standardized units became comparable and can be cumulated. This allowed for the calculation, for each voivodeship, of the Perkal synthetic index that shows severity of the social exclusion risk using the following formula:

$$M_k = \frac{\sum_{j=1}^n t_{ij}}{m}$$

where:

$M_k$  – severity of the social exclusion risk,

$t_{ij}$  – standardized value of observation in an  $i$ -case and a  $j$ -variable,

$m$  – number of parameters included in the analysis.

Then, the analysed units were divided according to the values of the Perkal synthetic indicator and voivodeships were classified for the year 2006 and 2016. The division of the studied territorial units into groups according to the severity of the social exclusion risk was conducted based on a three-mean method.

The synthetic indicator for the severity of the social exclusion risk in voivodeships was calculated using 10 diagnostic variables (Table 1).

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<sup>2</sup> The term of stimulant is understood as a variable whose growing values are evaluated positively from the perspective of a given phenomenon, whereas a destimulant is a variable whose increasing values are evaluated negatively from the point of view of a given phenomenon – here it is social exclusion.

**Table 1. A set of diagnostic variables in the study on the severity of the social exclusion risk in voivodeships**

Symbol	Variables
<b>Employment</b>	
X <sub>1</sub>	The percentage of the registered unemployed people remaining jobless longer than 1 year in the total number of citizens
<b>Poverty</b>	
X <sub>2</sub>	The indicator of the extreme poverty risk <sup>3</sup>
X <sub>3</sub>	The indicator of the relative poverty risk <sup>4</sup>
<b>Poverty (dok)</b>	
X <sub>4</sub>	The indicator of the statutory poverty risk <sup>5</sup>
X <sub>5</sub>	People who received a social welfare benefit from under the decision – poverty per 1 thousand citizens
<b>Income</b>	
X <sub>6</sub>	The average monthly disposable income per head
<b>Living conditions</b>	
X <sub>7</sub>	The percentage of flats with a bathroom
<b>Education</b>	
X <sub>8</sub>	The pass rate of the secondary school leaving examinations (%)
X <sub>9</sub>	Adults participating in education or training (at the age of 25-64 years) (%)
<b>Availability of services</b>	
X <sub>10</sub>	The percentage of children covered by pre-primary education (3-6 years)

The analysis of the social exclusion risk degree was based on ex-post indicators. They are defined as the set of diagnostic indicators including the most complete and accurate picture of the analysed phenomenon. The generated set of indicators consisted, inter alia, of the information on the situation in the labour market regarding people particularly exposed to social exclusion – the unemployed people remaining jobless for a year or longer. Such a long period without work can develop dependence on social assistance establishments and,

<sup>3</sup> The indicator of the extreme poverty risk, that is, the percentage of people in the households, where the expenditure level (including also the value of free articles and natural consumption) was lower than the extreme poverty threshold (minimum existence) indicating the level of satisfying needs below which there is a biological risk to human life and psychophysical development.

<sup>4</sup> The indicator of the relative poverty risk, that is, the percentage of people in the households, where the expenditure level (including also the value of free articles and natural consumption) was lower than the relative poverty threshold adopted at the level of 50% of the average monthly expenses established at the level of all households considering the so-called OECD equivalence scale.

<sup>5</sup> The indicator of the statutory poverty risk, that is, the percentage of people in the households, where the expenditure level (including also the value of free articles and natural consumption) was lower than the so-called statutory poverty threshold, i.e. the amount which pursuant to the applicable law on state social benefits establishes a claim to a pecuniary benefit from the social assistance system.

primarily, may permanently damage the professional career and the standard of living resulting from it.

To ensure that the meaning of poverty in the implication of social exclusion is emphasised, the analysis considered different poverty thresholds referring to various aspects of poverty. Adopting a poverty threshold at the minimum existence level allows to estimate the scale of extreme poverty below which there is a biological risk to human life and psychophysical development. Considering the so-called statutory threshold indicates the size of the group of people who in accordance with applicable provisions are entitled to claim a pecuniary benefit from the social assistance system. In turn, establishing a relative poverty threshold at the level of 50% of the average monthly amount spent by Polish households allows to identify those whose consumption level considerably differs from the average level. The indicator which also concerns the problem of poverty and the sphere of support (and often beneficiaries' attachment) from social assistance establishments is an index that illustrates the number of people who have been conferred a social benefit on the grounds of poverty per one thousand citizens. As the law states, social assistance comprises a significant element of state social policy – established to provide assistance to persons and families who are in a difficult life situation and are unable to handle it using own resources and possibilities<sup>6</sup>. Despite undeniable advantage of the activities provided by state assistance establishments, there is a common view that they are not adapted to the changing reality of the current system. Social assistance establishments, and therefore the entire system, are frequently assessed as ineffective and dysfunctional [Miruć 2014], and that is why do not match current problems. In consequence, social work is focussed on apparent actions and volume and not on the quality of these activities. The present social assistance system does not even reduce the scale of social problems or the number of social assistance beneficiaries but the system itself contributes to helplessness or powerlessness of these beneficiaries who treat it as a permanent life activity [Zawadzki 2015]. Therefore, the system effectively contributes to boosting their sense of social exclusion or even actual social exclusion.

Another cardinal determinant of social marginalisation is the income level of the population –expressed in the article as an average monthly disposable income per head. It is a crucial measure of prosperity and a factor which determines satisfying the needs of citizens. A disposable income is intended for expenses and savings of households.

The evaluation of the general social marginalization risk also included the partial indicator related to living conditions – the percentage of households provided with a bathroom the lack of which suggested substandard housing conditions. Against common opinions and standards, there are still numerous households in Poland without a sanitary installation and a spatial differentiation can be still observed in this respect.

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<sup>6</sup> Article 2 of the Law of 12 March 2004 on social assistance, OJ of 2015, Item 163, 693.

Within the framework of education whose lack or low level imply the risk of social exclusion, the analysis included the pass rate of the secondary school leaving examinations and the indicator illustrating the educational activity of adults – adult individuals participating in education or training (aged between 25 and 64 years). An insufficient formal education level, the lack of qualifications or skills are factors which not only contribute to economic deprivation (related to low remunerations and increased unemployment risk), but also to socio-cultural deprivation. The need for continuous updating of knowledge, gaining new skills, continuing education, and participating in courses and trainings allow for adapting to new working techniques and methods as well as provide greater opportunities to adapt to the changing circumstances in the labour market. Besides, studies have shown that there is a correlation between the education level and the socio-economic status, social prestige, the place occupied in the social relations structure and occupational mobility [Nowak 2012].

In addition, no access or limited access to goods and services is an undeniable, non-critical dimension of deprivation. However, it is a more complex issue as access can be analysed from different perspectives. First of all, it is the financial aspect, namely, the cost of goods and services with regard to the purchasing power of the population. Secondly, the spatial availability is important, that is, the density of the chain of the offices, where particular services are rendered and transport access to these offices, mainly by means of public communication (which is particularly essential for the elderly, less fit and in a more difficult economic situation). What is more, most data allow to conduct only quantitative analyses, without much information on the quality of goods and services [Smętkowski, Gorzelak, Płoszaj et al. 2015]. Due to the above-mentioned limitations in this paper, the analysis also included the percentage of children aged 3-6 covered by pre-primary education as an indicator representing the availability of educational-care services.

It should be highlighted once again that the analysed diagnostic indicators do not exhaust the descriptive and diagnostic possibilities of social exclusion, but they only propose a spatial approach to this issue and result from both subjective and substantive choices of the authors. Undeniably, their ongoing improvement is required so that they could accurately reflect the multidimensional character of social exclusion and allow for a better evaluation of the role and effectiveness of the policy focused on combating social exclusion as intended by the authors.

### **3. SPATIAL DIVERSIFICATION OF SOCIAL EXCLUSION**

In accordance with the adopted methodology, voivodeships were classified on a straight-line basis according to the synthetic indicator calculated based on diagnostic variables in 2016 and 2006, then they were allocated to groups with different levels of social exclusion risk (Table 2).

**Table 2. Classification of voivodeships according to the Perkal synthetic index**

Social exclusion risk severity	2006		2016	
	grouping principle	voivodeships	grouping principle	voivodeships
very high	$(M_s) < 0.26$	świętokrzyskie warmińsko- -mazurskie	$(M_s) < 0.38$	warmińsko- -mazurskie podkarpackie świętokrzyskie lubelskie
high	$0.26 < (M_s) < 0.51$	podkarpackie <b>kujawsko- -pomorskie</b> lubelskie podlaskie	$0.38 < (M_s) < 0.54$	<b>kujawsko- -pomorskie</b> podlaskie wielkopolskie zachodniopomorskie
medium	$0.51 < (M_s) < 0.65$	dolnośląskie łódzkie zachodniopomorskie lubuskie wielkopolskie pomorskie	$0.54 < (M_s) < 0.71$	łódzkie małopolskie opolskie pomorskie lubuskie
low	$(M_s) > 0.65$	małopolskie opolskie śląskie mazowieckie	$(M_s) > 0.71$	dolnośląskie śląskie mazowieckie

Source: own study based data GUS.

Before presenting the results of the analysis it is necessary, however, to emphasise that the issue of social exclusion in its basic meaning has an individual dimension, whereas its analysis at the voivodeship level concerns aggregated values. Methodology adopted by the authors illustrates indicator values without the possibility of assessing the layout of population values observed in the study. Therefore, in the voivodeships with a high synthetic index the likelihood of determining social exclusion among citizens will be lower than in the voivodeships with low values of this index.

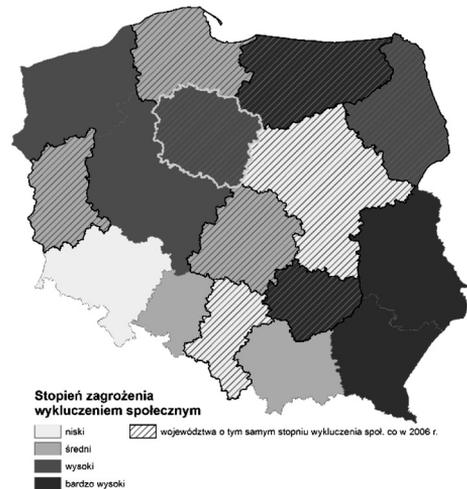
In 2016, the Perkal synthetic indicator representing the severity of social exclusion risk in voivodeships ranged from 0.18 to 0.88. Kujawsko-Pomorskie voivodeship with the Perkal Index of 0.40 was in the group of voivodeships with high severity of the social exclusion risk. In addition to Kujawsko-Pomorskie voivodeship, this group also included such voivodeships as Zachodniopomorskie, Wielkopolskie and Podlaskie. The voivodeships which were more exposed to social exclusion included Lubelskie, Świętokrzyskie, Podkarpackie and Warmińsko-Mazurskie – the Perkal index achieved in the study classified these regions into

the group of very high social exclusion risk severity. The remaining eight Polish voivodeships, namely, Lubuskie, Pomorskie, Opolskie, Małopolskie and Łódzkie were classified as the ones whose citizens were moderately exposed to social exclusion, whereas the residents of such voivodeships as Mazowieckie, Śląskie and Dolnośląskie were affected by this problem to a small extent.

**Figure 1. Voivodeships according to severity of the social exclusion risk in 2006**



**Figure 2. Voivodeships according to severity of the social exclusion risk in 2016**



Source: own study using ArcGis.

The results gathered in the study indicate that the differences concerning the severity of the social exclusion risk between voivodeships are quite permanent in the horizon of 10 years (Fig.1, Fig. 2). **Within a decade, 9 out of 19 voivodeships did not change their assignment group according to the social exclusion risk concerning citizens** (they are striped on the map). These voivodeships included Mazowieckie and Śląskie (in 2006 and 2016 they were in the low-risk group), Pomorskie, Lubuskie and Łódzkie (in the medium-risk group), Podlaskie and Kujawsko-Pomorskie (in the high-risk group) and Warmińsko-Mazurskie and Świętokrzyskie (a very high social exclusion risk). As for other voivodeships, the observed changes regarding the assignment of voivodeships to the classified groups actually indicated an increasing social exclusion risk in relation to their citizens – six of them were assigned to the group of a higher social exclusion risk in 2016 when compared to 2006. Dolnośląskie voivodeship was an exception here as it improved its status in terms of the classification according the Perkal indicator – in 2016, this voivodeship was in the low-risk social exclusion group.

The method adopted for the classification of voivodeships suggests that between 2006 and 2016 there was a diversification in the spatial distribution of the social exclusion risk. The most significant changes regarded the voivode-

ships affected by the above-mentioned phenomenon to a high and medium extent. Although in 2006 a medium degree of social exclusion risk, so slightly lower than the national average, was observed in western voivodeships, whereas a high social exclusion risk, that is slightly lower than the domestic average, was noticed mainly in eastern voivodeships, in 2016 such spatial correlations were not observed any longer. In 2016, the voivodeships of a high or medium severity of the social exclusion risk were seen all over the country. The years analysed in the study revealed certain changes in the breakdown of voivodeships most and least affected by the issue. The voivodeships of the lowest poverty risk included Mazowieckie and Śląskie, among others. Mazowieckie voivodeship was basically in a more favourable position in terms of the analysed variables than the average in Poland during the investigated period. The situation got worse only with regard to the percentage of the registered unemployed people remaining jobless longer than one year against the total number of citizens. In spite of the fact that this percentage was 3.0% which was 0.1 percentage point less than the national average, the registered unemployment rate remaining jobless longer than one year versus the total number of citizens was relatively lower – 1.6%, but this was 0.1 percentage point less than the national average. When compared to the domestic average, the situation in Mazowieckie voivodeship also improved with regard to the percentage of the people aged between 25 and 64 who participated in education or training. Nevertheless, it should be pointed out that between the year 2006 and 2016 the percentage of adults taking part in education decreased in all voivodeships. Even though this rate was 4.9% on average in 2006, it amounted only to 3.4% in 2016. Yet, in Mazowieckie voivodeship the indicators were the highest both in 2006 and 2016 and amounted to 7.5% and 5.8% respectively. In the second least affected by social exclusion voivodeship, that is Śląskie voivodeship, in both studied years the stimulant levels were basically above the national average whereas the destimulant levels accounted for ca. 2/3 of the domestic average. Yet in 2016, the least affected group was joined by Śląskie voivodeship and the group of regions slightly more affected by social exclusion was joined by Małopolskie and Opolskie voivodeships. The investigated period in Dolnośląskie voivodeship was characterized by clear improvement in the labour market and in the poverty risk in various dimensions. In 2016, the rate of registered unemployed people remaining jobless longer than one year decreased by 1.9 percentage point, the extreme poverty risk dropped nearly three times whereas the risk of relative or statutory poverty fell almost twice. In the above-mentioned voivodeship, the pass rate of the secondary school leaving examinations was a bit worse than the domestic average among the stimulants both in 2006 and 2016. Namely, in 2006 the rate was 3.4 percentage point less than the national average and in 2016 it was 2.3 percentage point less than the average in Poland. In Małopolskie voivodeship, in turn, the period analysed in the study was characterized by an increased social exclusion risk. This was largely caused by a relatively worse than the national average situation of the citizens with regard to poverty. At

the same time an improvement was observed in this voivodeship in terms of extreme and relative poverty indicators but to a lesser extent than the national average. In addition, during the analysed period there raised the percentage of people living in households, where the level of expenditures was lower than the so-called statutory poverty threshold – in 2006 it was 15.7% and in 2016 it amounted to 16.1% which was higher than the national average by 2.8 percentage point.

Likewise, Opolskie voivodeship (in addition to Małopolskie voivodeship) migrated during the mentioned period from the group of voivodeships with a low social exclusion rate to the one characterized by a medium rate of this phenomenon. The degression of this region was primarily determined by the indicator illustrating lifelong learning. Between 2006 and 2016, the share of adults participating in education or training in this voivodeship dropped nearly twice and the difference versus the domestic average increased from 0.1 to 0.8 percentage point. Besides, the pass rate of the secondary school leaving examinations was below the national average – in 2016 the difference was 0.3 percentage point.

According to the adopted method, in the period analysed in this study, Warmińsko- -Mazurskie and Świętokrzyskie voivodeships were qualified as the regions the citizens of which were most affected by social exclusion. Such a position of Warmińsko-Mazurskie voivodeship was influenced by the fact that this region had higher values of all destimulants than the Polish average both in 2006 and 2016. The indicators describing different poverty dimensions concerning the citizens of this voivodeship were ca. 1.5 times higher than the national average in 2016. Sadly enough, stimulant values also tended to the detriment of this voivodeship as the average monthly disposable income per head, the pass rate of the secondary school leaving examinations, the percentage of children covered by pre-primary education as well as the percentage of adults participating in education or training were lower than the domestic average. Apart from that, the indicators illustrating the pass rate of the secondary school leaving examinations and lifelong learning dropped respectively by 2.0 and 1.4 percentage point between the analysed years.

A similar situation was observed in Świętokrzyskie voivodeship because in 2006 and 2016 the values of all destimulants were higher than the national average whereas the indicators describing poverty assumed values that were ca. 1.5 times higher than the domestic average. As for the stimulants, a more favourable situation than the national average was reported only within the pass rate of the secondary school leaving examinations – in 2016 this indicator was higher in Świętokrzyskie voivodeship by 0.8 percentage point than the domestic average.

It is worth paying attention to the causes of the change in the classification of Lubelskie and Podkarpackie voivodeships which between 2006 and 2016 moved from the group highly affected by the social exclusion risk to the group with a very high rate of social exclusion. Such a standing in Lubelskie voivodeship

was impacted by a decreased indicator describing the pass rate of the secondary school leaving examinations – by 1.1 percentage point and a lower rate of adults participating in education or training at the age of 25-64 – by 1.5 percentage point. In addition, despite the fact that this region achieved better values of most of the indicators over a decade, the scale and pace of this improvement were lower than the national average.

The worse condition in terms of social exclusion between 2006 and 2016 in Podkarpackie voivodeship was largely affected by the higher percentage of people living in households, where the level of expenditures was under the relative poverty threshold assumed at 50% of average monthly expenditures established at the level of all household (a relative poverty threshold), i.e. from 21.9% to 22.3% and by the increased percentage of household, where the level of expenditures was lower than the so-called statutory poverty threshold, from 19.9% to 21.3%. Additionally, in spite of achieving better values of the diagnostic indicators in this region, the scale of this progress was lower than the national average like in Lubelskie voivodeship, preventing the promotion to the group of voivodeships with a lower social exclusion rate.

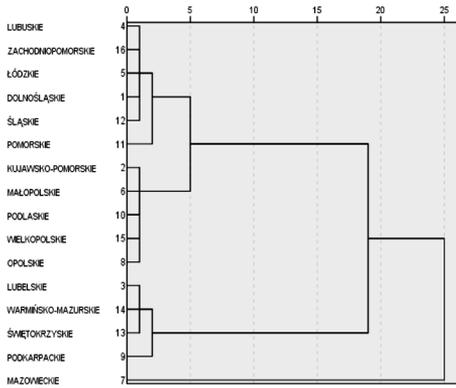
The degradation of Wielkopolskie and Zachodniopomorskie voivodeships from the group with a low social exclusion rate to the voivodeship with a high degree of this problem was influenced by two factors. First of all, it was a decrease in the following indicators: the pass rate of the secondary school leaving examinations and the rate of adults participating in education or training. Secondly, the pace of changes within the studied indicators was slower than the domestic average.

On the basis of the studies carried out in the mentioned period, no changes were observed in Kujawsko-Pomorskie voivodeship that could be regarded as *in plus* or *in minus*. Over 10 years, despite a decrease in destimulants, these values still remained higher than the national average in 2016. An exception is the rate of relative social exclusion which was lower than the domestic average by ca. 0.6 percentage point in 2016. Among stimulants, this voivodeship exceeded the national average only by 1 percentage point as regards the percentage of households equipped with a bathroom, while the remaining stimulants assumed lower values than the domestic average. Thus, the pace of the changes that occurred in this voivodeship, despite their positive influence (e.g. a decreased scale of poverty, higher income, better access to goods and services) was still too low to move its citizens from the high social exclusion rate.

The multi-dimensional analysis conducted in the study can be completed with assessment of the similarity between voivodeships using Ward's agglomerative method that is commonly considered to be most effective in creating homogenous agglomerations [Grabiński 2003].

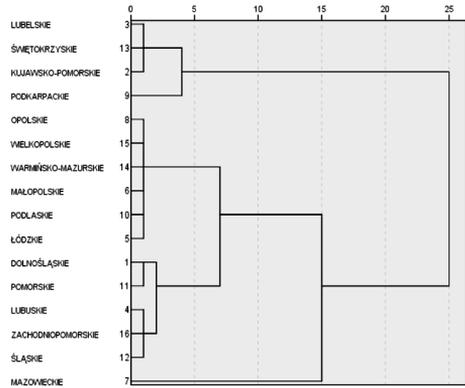
The results of grouping the voivodeships by means of Ward's method by the social exclusion rate in 2006 and 2016 are illustrated by dendrograms (Fig. 3 and Fig. 4). On their basis, three groups of the most similar voivodeships were identified both in 2016 and 2006 (Fig. 5 and Fig. 6).

**Figure 3. Classification of voivodeships using Ward's method in 2006**

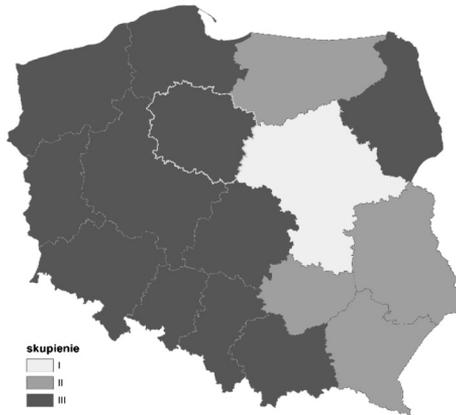


Source: own study using IBM SPSS Statistics.

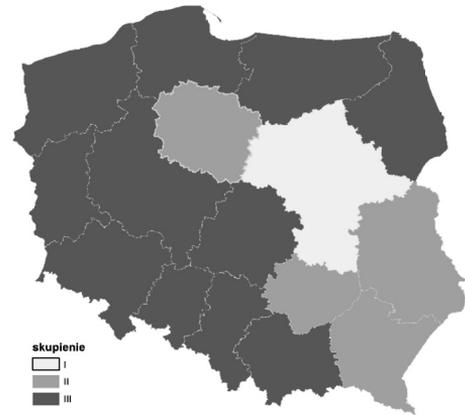
**Figure 4. Classification of voivodeships using Ward's method in 2016**



**Figure 5. The similarity of voivodeships by the social exclusion rate in 2006 according to Ward's agglomerative method**



**Figure 6. The similarity of voivodeships by the social exclusion rate in 2016 according to Ward's agglomerative method**



Source: own study using ArcGis.

In 2016, the best situation was observed in agglomeration I. This agglomeration was represented only by Mazowieckie voivodeship and was different from others mainly by higher average variables, being stimulants, than the domestic average. It was a definite leader in terms of adults' educational level. As mentioned above, Mazowieckie voivodeship was characterized by higher values of destimulants. All the adopted measures describing poverty oscillated at 2/3-3/4 of the values of the national average. The only destimulant in this agglomeration which suggested less favourable condition than the national average was the percentage of the registered unemployed people remaining jobless longer than 1 year against the total percentage of citizens.

The values of all indicators that were most similar to the domestic average occurred in 2016 in agglomeration III. It included most of regions many of which were located in the western part of the country. In this agglomeration, the rate of adults participating in education or training relatively most deviated from the national average in minus, whereas the highest in comparison with the domestic average was the indicator of the people who were granted social benefit under the decision – poverty per 1 thousand citizens.

Agglomeration II consisted of the regions in which the social exclusion risk in all variables adopted for the analysis was higher the national average. This agglomeration included south-eastern voivodeships and Kujawsko-Pomorskie voivodeship. The worst situation here was observed in the field of various dimensions of poverty and in the percentage of the registered unemployed people remaining jobless longer than 1 year against the total number of citizens. In agglomeration III these variables assumed values a half higher than the domestic average. Like others, this agglomeration was characterised by the same pass rate of the secondary school leaving examinations as the national average. Yet, the indicator presenting the percentage of adults participating in education and training was much lower than this average and the lowest of the classified groups. Likewise, an average monthly disposable income per head in this agglomeration was under the national average.

A decade earlier, in 2006 the agglomeration in which the situation concerning the studied issue was the best included only one region, namely, Mazowieckie voivodeship. Among the stimulants and destimulants adopted for the study, this region achieved the most attractive results in eight categories, i.e. the lowest for destimulants and the highest for stimulants. As regards the variable for the percentage of registered unemployed people remaining jobless longer than 1 year per the total number of citizens, this value was the same as the national average, while the rate of households equipped with a bathroom was under the national average in Mazowieckie voivodeship.

Agglomeration II which covered Lubelskie, Warmińsko- -Mazurskie, Świętokrzyskie and Podkarpackie voivodeships, in 2006 represented the regions, where the social exclusion rate was the highest. In this agglomeration, each studied indicator achieved worse values than the domestic average and the least favourable of all agglomerations with particularly distinct differences observed in the indicators describing various dimensions of poverty or deprivation in access to goods or services expressed by the percentage of children covered by pre-primary education.

According to the adopted method, Kujawsko-Pomorskie voivodeship was in agglomeration III in 2006 with variables achieving values similar to the national average. Apart from Kujawsko-Pomorskie voivodeship, this agglomeration included the whole western and central part of Poland.

The analysis carried out by means of Ward's method appears to support the thesis stated in the introduction concerning spatial sustainability of social exclusion. The results of agglomerative grouping using this method suggest that over

Table 3. The average values of diagnostic variables in Poland and distinguished agglomerations in 2006 and 2016 Source: own study based on the data of GUS (Central Statistical Office)

Specification	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>	X <sub>9</sub>	X <sub>10</sub>	
<b>2006</b>											
<b>POLAND</b>	<b>3.0</b>	<b>7.8</b>	<b>17.7</b>	<b>15.1</b>	<b>18.8</b>	<b>834.68</b>	<b>86.5</b>	<b>79.0</b>	<b>5.2</b>	<b>58.3</b>	
<b>Agglomerations</b>											
Mazowieckie	I	3.0	5.7	13.0	11.2	16.1	1048.80	85.8	80.0	7.5	62.2
Warmińsko-Mazurskie, Świętokrzyskie, Lubelskie, Podkarpacie	II	3.8	11.4	23.6	20.5	22.7	704.20	81.5	78.3	4.3	51.2
Lubuskie, Zachodniopomorskie, Łódzkie, Dolnośląskie, Śląskie, Pomorskie, Kujawsko-Pomorskie, Małopolskie, Podlaskie, Wielkopolskie, Opolskie	III	2.9	7.3	16.9	14.3	20.0	826.10	87.7	78.3	4.9	59.1
<b>2016</b>											
<b>POLAND</b>	<b>1.4</b>	<b>4.9</b>	<b>13.9</b>	<b>12.7</b>	<b>16.67</b>	<b>1474.56</b>	<b>91.18</b>	<b>79.0</b>	<b>3.7</b>	<b>80.7</b>	
<b>Agglomerations</b>											
Mazowieckie	I	1.6	3.2	10.1	8.5	14.3	1780.88	91.2	82.0	5.8	85.8
Kujawsko-Pomorskie, Świętokrzyskie, Lubelskie, Podkarpacie	II	2.0	7.4	18.6	17.8	20.0	1261.96	86.7	79.5	3.1	78.0
Lubuskie, Zachodniopomorskie, Łódzkie, Dolnośląskie, Śląskie, Pomorskie, Kujawsko-Pomorskie, Małopolskie, Podlaskie, Wielkopolskie, Opolskie	III	1.3	4.6	13.3	12.1	17.8	1464.02	92.1	78.9	3.3	79.7

Source: own study based on the data of GUS (Central Statistical Office).

10 years the situation within the analysed variables had an impact on the change in the assignment to certain agglomerations only in the case of two voivodeships: Warmińsko-Mazurskie and Kujawsko-Pomorskie. Warmińsko-Mazurskie became most similar to the agglomeration of the regions representing the same social exclusion rate as the domestic average, whereas Kujawsko-Pomorskie voivodeship approached the agglomeration being most distant in minus from the national average and became more similar to the south-eastern regions of Poland, where the social exclusion rate has been very high for years. During the analysed period, Mazowieckie voivodeship maintained and recognised the position of the region whose citizens are the least threatened by social exclusion.

#### 4. SUMMARY

The phenomenon of social exclusion in Poland concerns a set of interlinked dimensions, namely, employment deprivation, deprivation regarding living conditions or access to goods and services, and differences in the level of income or education. Analytical work on the indicators describing the above-mentioned areas clearly indicate the substantial regularity in the spatial diversification of the social exclusion rate. In addition to the voivodeships whose citizens have been insignificantly threatened by social exclusion for years, for example, Mazowieckie voivodeship, there are regions, where citizens have been invariably exposed to this problem for years as in the case of south-eastern Poland. Western Poland, in turn, enjoys greater stability in this respect.

The analysis reveals that Kujawsko-Pomorskie voivodeship, despite improved values of the variables accounting for the overall picture of social exclusion, has deteriorated its position in relation to other voivodeships during the period considered. This is shown both by the assignment according to Perkal's synthetic index – in 2006 this voivodeship held the position before last in the group of regions with a high social exclusion rate, while in 2016 the last position, and by increased similarity of Kujawsko-Pomorskie voivodeship to the regions most deviated in minus from the national average in the agglomerative analysis based on Ward's method.

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## **SPOŁECZNE I PRZESTRZENNE ZRÓŻNICOWANIE ZJAWISKA WYKLUCZENIA SPOŁECZNEGO (ZE SZCZEGÓLNYM UWZGLĘDNIENIEM WOJEWÓDZTWA KUJAWSKO-POMORSKIEGO)**

**Streszczenie:** Podstawową przyczyną powstawania wykluczenia społecznego jest ubóstwo, jednak autorzy artykułu wyznają pogląd, że nie jest ono synonimem wykluczenia społecznego. Autorzy przyjmują, że stanowi ono zasadniczy wymiar wykluczenia społecznego, być może najważniejszy, który obok innych czynników obiektywnych składać się będzie na charakterystykę ekskluzji społecznej w Polsce. Artykuł poza częścią teoretyczną poświęconą próbom uporządkowania rozważań dotyczących problemu wykluczenia społecznego, zależności między ubóstwem a wykluczeniem społecznym, skupia się na mierzalnych czynnikach obrazujących to zagadnienie i przestrzennym jego zróżnicowaniu, ze szczególnym uwzględnieniem sytuacji w województwie kujawsko-pomorskim.

Wstępem do analizy przestrzennego zróżnicowania zjawiska wykluczenia społecznego był przegląd i wybór zmiennych diagnostycznych charakteryzujących owy problem. Następnie wykorzystując metodę porządkowania liniowego, określaną jako wskaźnik Perkala, dokonano klasyfikacji badanych jednostek – województw z punktu widzenia uzyskanych wskaźników poziomu zagrożenia jego mieszkańców wykluczeniem społecznym. Ponadto jako uzupełnienie przeprowadzonej wielowymiarowej analizy zastosowano także ocenę podobieństwa województw za pomocą metody aglomeracyjnej Warda.

Zasadnicza część artykułu skupia się zatem na analizie subiektywnie wybranych przesłanek sprzyjających marginalizacji społecznej. W opracowaniu przyjęto, że wykluczenie społeczne nie jest równoznaczne z niedostatkiem ekonomicznym, stąd uwzględniono wskaźniki ujmujące szeroki zakres zjawisk społeczno-gospodarczych, dotyczących także pozaekonomicznych aspektów życia, w tym m.in.: bezrobocia, skali ubóstwa, zamożności, wyposażenia mieszkań w instalacje techniczno-sanitarne, korzystania z pomocy społecznej, edukacji czy dostępności do dóbr i usług. Wśród nich znalazły się: bezrobotni zarejestrowani pozostający bez pracy dłużej niż 1 rok w ogólnej liczbie mieszkańców; wskaźnik zagrożenia ubóstwem skrajnym; wskaźnik zagrożenia ubóstwem relatywnym; wskaźnik zagrożenia ubóstwem ustawowym; przeciętny miesięczny dochód rozporządzalny na jedną osobę; liczba osób w rodzinach objętych pomocą społeczną z powodu ubóstwa na 1000 mieszkańców; odsetek mieszkań wyposażonych w łazienkę; wskaźnik wyniku egzaminu gimnazjalnego w części matematyczno-przyrodniczej;

osoby dorosłe uczestniczące w kształceniu lub szkoleniu (w wieku 25-64 lata); odsetek dzieci objęty wychowaniem przedszkolnym. Po standaryzacji zmiennych uporządkowano badane jednostki według wartości syntetycznego wskaźnika Perkala i przeprowadzono klasyfikację województw. Szczególną uwagę na tym etapie analizy położono na sytuację województwa kujawsko-pomorskiego.

**Słowa kluczowe:** wykluczenie społeczne, ubóstwo, województwa, wskaźnik Perkala, metoda aglomeracyjna Warda.

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