

THE COMPARISON OF FUNDS ALLOCATION UNDER THE REGIONAL OPERATIONAL PROGRAMMES IN 2007–2013 AND 2014–2020 PROGRAMMING PERIODS

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Abstract

The Intraregional policy comprises actions taken by the regional self-government authorities and their agencies which influence the processes of socio-economic development taking place in the region. Due to the volume of funds involved, the Regional Operational Programmes (ROPs) can be regarded as the most important instrument of intraregional policy in Poland (in the programming period 2007-2013 voivodeships received 16,6 billion of Euro and in the current programming period 2014-2020 the planned allocation amounts to 31 billion Euro). The primary objective of this study is to characterize and compare the distribution of Polish voivodeships' operational programmess funds in 2007-2013 and 2014-2020 programming periods for different categories of intervention to find out if any patterns of allocation exist. The results of this study will be used in further authors' investigations concerning the degree of adequacy of voivodeships' funds allocation to the needs and potentials of the region (smart specialization policy approach).

Keywords: intraregional policy, allocation, EU funds, regional operational programmes, cohesion policy.

1. Introduction

In 2007–2013 and 2014–2020 European Union (EU) programming periods, Poland received the biggest allocation of the EU structural funds among the 28 Member States. In the 2007–2013 EU framework of regional policy (structural, cohesion) alone, 67 billion Euros of support for the Polish economy was granted and in 2014–2020 the allocation for Poland amounts to 82.5 billion Euros. EU funds can be then perceived as one of the main tools of economic policy implementation in Poland. A significant part of this support is allocated

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under regional operational programs which are designed and managed by the local authorities. In the programming period, 2007-2013 Polish voivodeships allocated 16,6 billion of Euro under ROPs. In addition, local authorities had also impact on the allocation of the regional component of the operational program Human Capital (about 7 billion Euro). In the current programming period, the sum of funds is even larger in nominal and relative terms, respectively: 31 billion of Euro and 41% of EU cohesion funds in Poland. This significant amount of allocation seems to be the most important instrument of intraregional policy implementation, where intraregional policy is understood as the policy conducted by the regional self-government authorities which influence the processes of socio-economic development in the region³.

The main objective of this study is to characterize and compare the allocation of Polish voivodeships' operational programs funds in 2007-2013 and 2014-2020 programming periods for different categories of intervention to find out if any patterns of allocation exist. To achieve such an objective the following methods will be used:

- review of official documents related to EU and Polish policy to recognize their influence on the planning of funds allocation,
- analysis of planned funds allocation under 16 Regional Operational Programmes by categories of intervention in 2007-2013 and 2014-2020 EU programming periods,
- the statistical method of computing relative variability, precisely the coefficient of variation ratio (CV) to compare the degree of variation of the voivodeships' planned allocation of funds for specific intervention fields,
- the hierarchical cluster analysis using Euclidean distance and Ward technic of agglomeration to find the groups of similar voivodeships in terms of funds allocation.

2. The framework of Regional Operational Programmes

In 2007-2013 programming period National Strategic Reference Framework (NSRF) was one of the most important documents in which the strategic priorities of the country and the implementation of cohesion policy was identified (Ministry of Regional Development, 2006). The basis for the preparation of this document were set up in Community Strategic Guidelines (CEC, 2005), which was followed by the Council Regulation No. 1083/2006 of 11 July 2006. The sum of EUR 67 billion was envisaged in the NSRF from the European Regional Development Fund (ERDF) (52%), European Social Fund (ESF) (15%) and the Cohesion Fund (CF) (33%) to support the

³ The division into interregional and intraregional policy is widely used in the literature, see e.g.: Gilowska et al. (1998), Gorzelak (2007) and Churski (2008).

realisation of the objectives of cohesion policy (Convergence and European Territorial Cooperation) in Poland. Figure 1 demonstrates the breakdown of the NSRF into specific operational programs (OP). The biggest portion of funds was planned to be allocated to the Infrastructure and Environment OP (42%). 25% of funds was dedicated to support the realization of 16 regional operational programs. The support provided for the human capital investments accounted for 15% of funds (regional component constitutes 60% of that sum) and for innovation – 13%. As in the case of all countries, a significant portion of NSRF funds (64%) were concentrated on the realization of the Lisbon Strategy for jobs and growth's goals⁴.

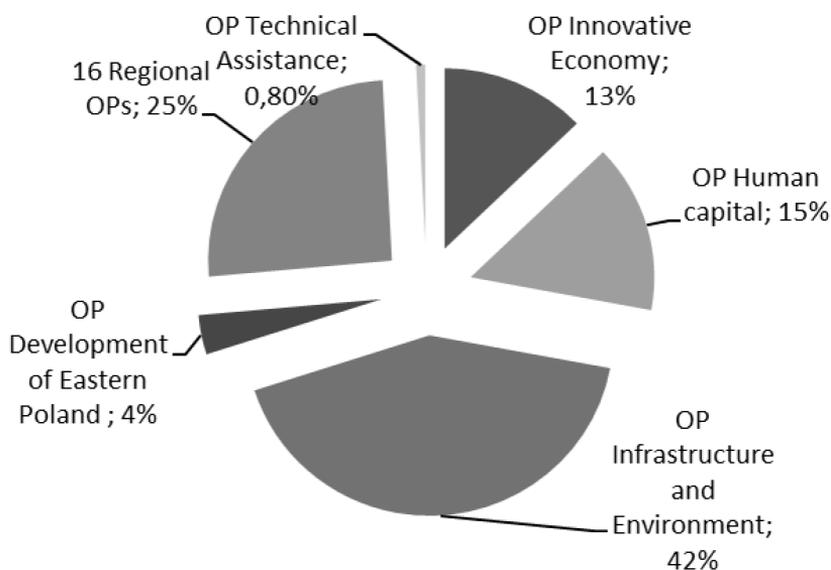


Figure 1. The breakdown of cohesion policy funds 2007-2013 (National Strategic Reference Framework)

Partnership Agreement (PA) is the most important document, prepared by the Polish government, which in the current programming period defines the strategy of European funds interventions in Poland, within the framework of three EU policies and 5 structural and investment funds (ESIF): the Cohesion Policy [the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF)], the Common Agricultural

⁴ It was a consequence of the EU Council decision taken in December 2005 that part of the cohesion policy funds should be allocated for investments related to the objectives of the renewed Lisbon Strategy (specifically: 60% for less-developed regions and 75% for the other regions) (1083/2006, p. 25). More on this issue in: Sokółowska-Woźniak and Woźniak (2008) and Sokółowska-Woźniak (2013).

Policy (CAP) [the European Agricultural Fund for Rural Development (EAFRD)] and Common Fisheries Policy (CFP) [the European Maritime and Fisheries Fund (EMFF)] (The Ministry of Infrastructure and Development, 2014). Polish's Partnership Agreement is influenced by a number of policy documents at European and National level. At European level, the main strategic document is the EU's 10 year growth strategy "Europe 2020 strategy for smart, sustainable and inclusive growth" (CEC, 2010), together with the Cohesion Policy Legislative Package⁵, the Common Strategic Framework (CSF) and Country Specific Recommendations (CSR), Position Paper for Poland (European Commission, 2012). At National level, the most important document is National Development Strategy 2020 – Active Society, Competitive Economy, Efficient State (NDS 2020) adopted by the Council of Ministers on 25 September 2012, and operationalized in the integrated strategies. The aims set up in PA are identical with the aims of NDS 2020, which on the other hand remain synergic with the Europe 2020 strategy. To conclude, the expenditure in the new programming period should be directed to the achievement of Europe 2020 Strategy objectives, so they should be focused on stimulating smart sustainable and inclusive growth. To improve coordination and efficiency of the allocation of EU's five structural and investment funds, Regulation of the European Parliament and the Council (EU) No. 1303/2013 of 17 December 2013 was prepared. Article 9 of this document includes 11 thematic objectives (TO) around which the intervention should be focused.⁶ In five regulations which lay on the common provision on each ESIF fund, the investment priorities (ERDF, ESF, CF) and Union priorities (EAFRD and EMFF) specific to each fund are identified.

In accordance with Council Regulations No. 1311/2013 of 2 December 2013 laying down the multiannual financial framework for the years 2014-2020 (Council Regulations, 2013), the total allocation for Poland amounts to approx. 82.5 billion (before transfers and with the estimated costs of transfers of technical assistance and the innovative urban actions). After subtracting compulsory transfers to instruments and programs managed directly by the European Commission (about 5 billion EUR) the total sum of Cohesion Policy funds (ERDF, ESF, Cohesion Fund) which is allocated within Partnership

5 The most important are Common Provisions Regulation (CPR) No. 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No. 1083/2006., followed by three specific regulations for the ERDF, ESF and Cohesion Fund.

6 In turn, the Annex 1 of the Common Strategic Framework "sets out in an integrated manner for each of the thematic objectives the main goals to be addressed, the key actions for each CSF Fund and corresponding general implementation principles to ensure effective and efficient use of the funds".

Agreement equals to 77.6 bln EUR, including 252 million EUR for youth initiative and 700.7 million EUR for territorial cooperation.

Figure 2 enables to analyze the breakdown of cohesion policy funds in Poland into national operational programs (NOP) and regional operational programs (ROP), which are the main instruments of the Partnership Agreement implementation.

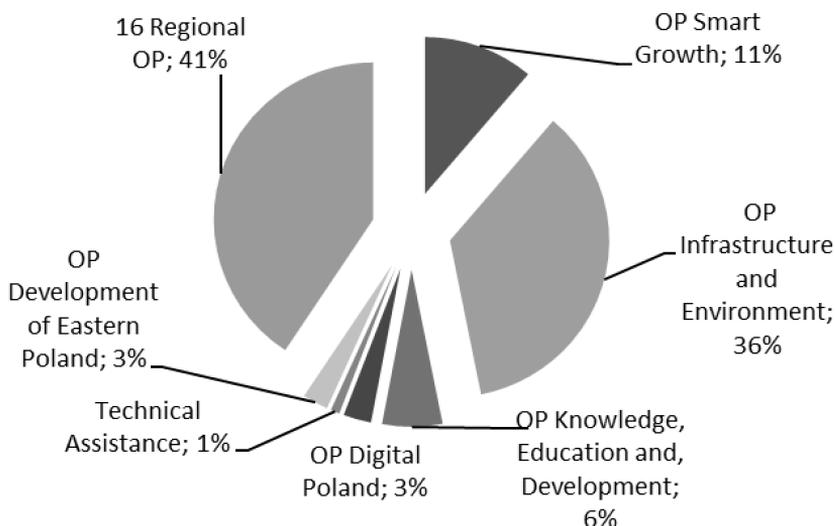


Figure 2. The breakdown of cohesion policy funds 2014-2020 (Partnership Agreement)

When the two programming periods' breakdown is compared, the visible increase of funds allocated for regional operational programs can be noticed (25% in the prior period and 41% in the current period). The amount of funds dedicated for Infrastructure decreased from 42% to 36% in the current programming period but still constitutes a large share. The share of funds dedicated to human capital investments under OP Knowledge, Education and Development will be lower than in last programming period under Human Capital OP (decrease from 15% to 6%). However, part of the priorities which were financed under Human Capital OP will be financed in this period under Regional Operational Programmes. ROPs in 2014-2020 programming period are dual-fund programs, financed both from ERDF and ESF, which is the novelty. In the new programming period, there is a special operational program designed to strengthen digital foundations for the national development: OP Digital Poland with 3% share of the cohesion funds in Poland.

Table 1. Comparison of EU funds allocation structure in the framework of Partnership Agreement and regional operational programs (broken down by CSF thematic objectives and in the context of the Europe 2020 Strategy)

Thematic Objectives	% allocation of EU funds by CSF thematic objectives in the framework of Partnership Agreement	% allocation of EU funds by Europe 2020 objectives in the framework of Partnership Agreement	% allocation of EU funds by Europe 2020 objectives under regional operational programs	% allocation of EU funds by CSF thematic objectives under regional operational programs
1. Strengthening research, technological development and innovation;	11.82		7.15	
2. Enhancing access to, and use and quality of, ICT;	3.65	SMART GROWTH	3.27	SMART GROWTH
3. Enhancing the competitiveness of SMEs, of the agricultural sector (for the EAFRD) and the fishery and aquaculture sector (for the EMFF);	11.12	26.58	11.77	22.19
4. Supporting the shift towards a low-carbon economy in all sectors;	10.87		15.94	
5. Promoting climate change adaptation, risk prevention, and management;	1.64	SUSTAINABLE GROWTH	1.19	SUSTAINABLE GROWTH
6. Preserving and protecting the environment and promoting resource efficiency;	10.43	51.08	7.18	38.85
7. Promoting sustainable transport and removing bottlenecks in key network infrastructures;	28.15		14.55	
8. Promoting sustainable and quality employment and supporting labour mobility;	6.58		11.00	
9. Promoting social inclusion, combating poverty and any discrimination;	7.53	INCLUSIVE GROWTH	15.71	INCLUSIVE GROWTH
10. Investing in education, training and vocational training for skills and lifelong learning;	4.75	19.08	8.88	35.60
11. Enhancing the institutional capacity of public authorities and stakeholders and efficient public administration.	0.22		0.00	
Technical Assistance	3.25		3.36	
TOTAL	100.00		100.00	

The EU funds allocation structure, broken down by thematic objective in Poland is shown in Table 1. The structure in the framework of Partnership Agreement is compared to the allocation structure of the sum of all Regional Operational Programmes in Poland. Almost 30% of funds within PA will be allocated to thematic objective 4. The sum of funds allocated for TOs 4, 5, 6 and 7 constitutes 51% of the allocation, which is dedicated to Europe 2020's sustainable growth objective. 19% will be allocated for promoting inclusive growth (TO 8-11) and 26.5% for smart growth Europe 2020 objective. This structure of allocation under PA differs from ROPs' allocation, where 39% will be invested to achieve sustainable growth, 36% inclusive growth and 22% smart growth.

3. Comparison of the planned funds allocation under Regional Operational Programmes

Due to the comprehensive contents of the Regional Operational Programmes, an exhaustive comparison of these programs in this article is not possible. The author focused the attention on the criterion of the funds' division between intervention fields. In the following analysis of the Regional Operational Programmes in two programming periods 2007-2013⁷ and 2014-2020, the following assumptions should be made:

- Since in 2007-2013 regional operational programs were financed from a single fund (ERDF) and in 2014-2020 they are dual-fund programs (ERDF and ESF) to make the comparison logical, the funds allocated within regional component of the OP Human Capital were added to the allocation within Regional Operational Programmes in 2007-2013.
- Since the breakdown of regional operational funds was based on so-called "theme dimension" in 2007-2013 and "thematic objectives" in 2014-2020 (which differ with respect to priority investments) several modifications were implemented to make the comparison possible among them. Finally, the allocation under 2007-2013 theme dimension was matched with relevant 2014-2020 thematic objectives. Additionally, the funds allocated under thematic objects 1 and 3, as well as 5 and 6, were summed).

⁷ The comparison of allocation structure in 2007-2013 programming period was conducted in research of Reichel and Wozniak (2010).

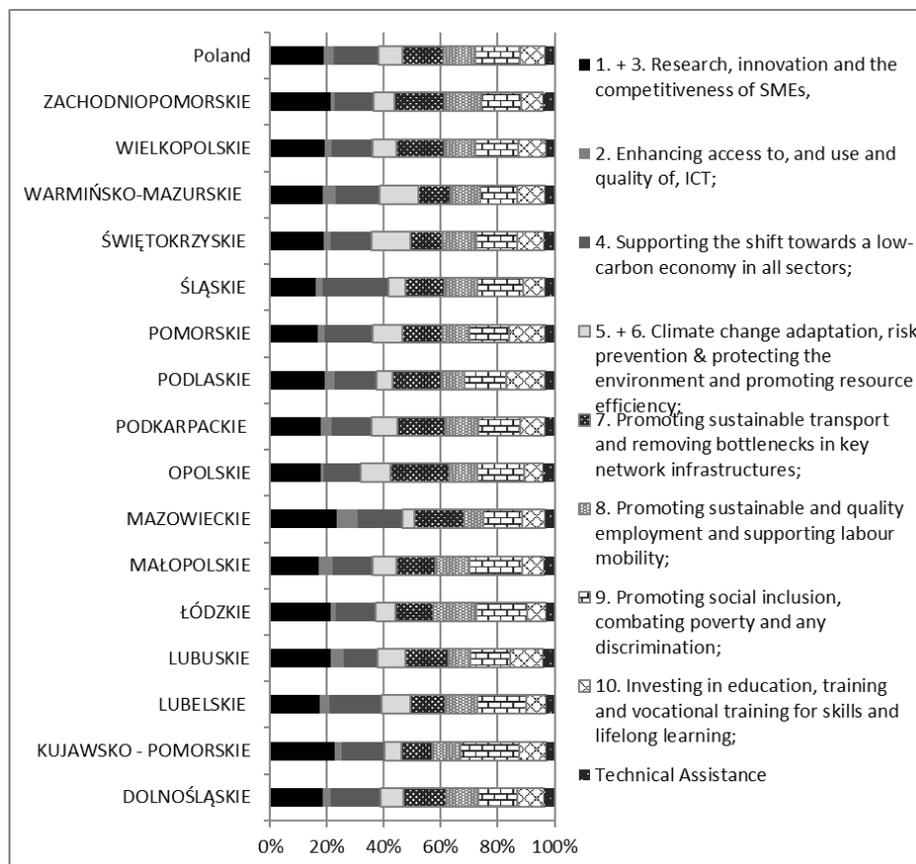


Figure 3. Allocation of 2014-2020 Regional Operational Programmes Funds broken down by Voivodships and groups of thematic objectives

In Figure 3 and 4 the allocation of ROPs in both programming periods broken down by voivodeships and groups of thematic objectives is presented. The names of thematic objectives (Figure 3) and priority themes (Figure 4) are explained in the legend. As was mentioned before the author tried to match the 2014-2020 thematic objectives with adequate 2007-2013 priority themes on the basis of categories of intervention analysis. The priority themes (or group of priority themes) were assigned to one or two thematic objectives which are shown in the legend in Figure 4.

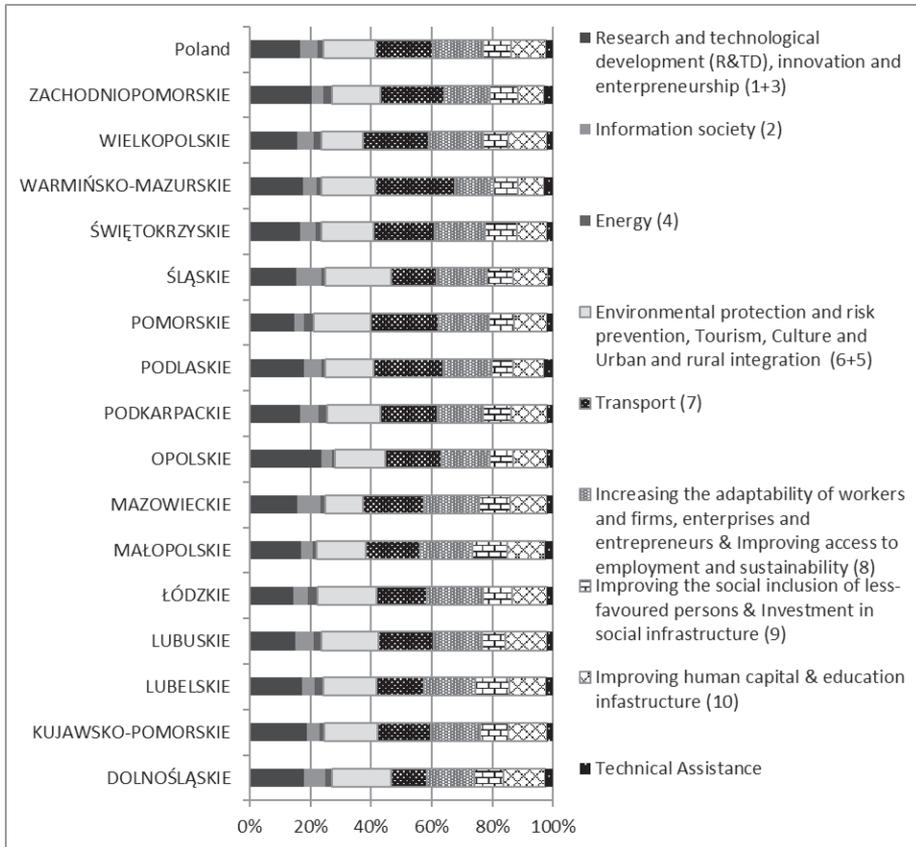


Figure 4. Allocation of 2007-2013 Regional Operational Programmes Funds broken down by Voivodships and groups of priority themes (assigned to thematic objectives)

To assess how the voivodeships differ in terms of funds allocation the coefficient of variation for each thematic objective was calculated, according to Formula (1)

$$CV = \frac{s}{\bar{x}} \quad (1)$$

Where: s – is the standard deviation of the population (voivodeships),
 \bar{x} – arithmetic mean of the features in a given year.

The results of the coefficient variation calculations for each intervention field in both programming periods are visualized in Figure 5. In the analysis,

it is assumed that if the value of the coefficient of variation is lower than 20% (0.2), the variations of regions in terms of funds allocation is small. If it is higher than 20% but lower than 40%, the variations are medium, if it is higher than 40% but lower than 60% the variations is large.

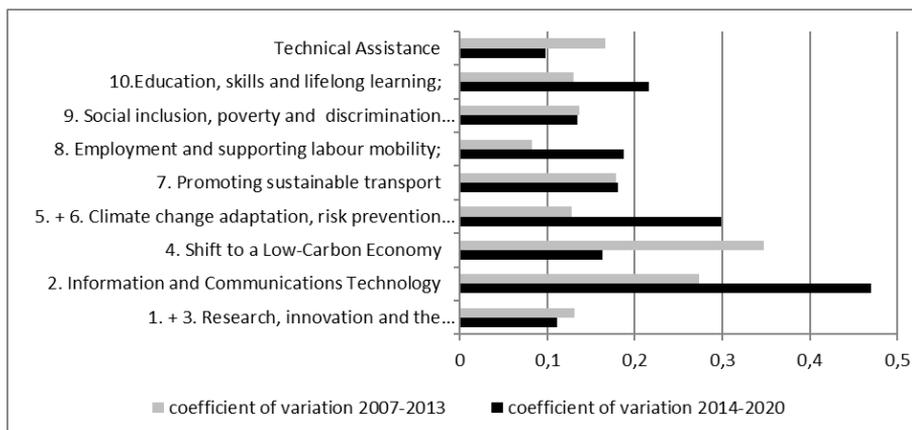


Figure 5. Comparison of coefficient of variation in voivodeships in two programming periods in terms of funds allocation

The comparison of funds allocation under Regional Operational Programmes in voivodeships and both programming periods will be based further on the data visualized in Figures 3 – 5. The average share of investments in research, innovation, and support of entrepreneurship (TO 1 and 3) is one of the highest (about 17% in 2007-2013 and 19% in 2014-2020). On average almost all voivodeships (apart from Opolskie) decided to invest relatively more in activities related to these issues in new programming period although the change is not very substantial (the increase is the highest in the case of Mazowieckie, Lubuskie, and Łódzkie). It can also be noted that regions are not highly diversified in terms of the share of planned investments in innovation and entrepreneurship in both periods (the coefficient of variation is 13% for the previous period and 11% for the current period) ⁸.

In the case of the investments related to the second thematic objective (information society), the decrease of share from on average 5% to 3% can be noticed (all voivodeships apart from Małopolskie plan to invest less). This trend is not similar to that observed in the country. On a national level, the share of funds dedicated for ICT developments will be even higher (the OP Digital Poland is dedicated to investments in the ICT sector). It should be

⁸ The influence of public support on innovativeness was discussed recently in Solesvik and Gulbrandsen (2014), Pruchnik and Toborowicz (2014)

stressed that the variation of voivodeships concerning the share of planned investments in TO 2 is quite high and increased from 27% to 47%.

Considerable increase in the share of planned allocation related to energy issues, taking into consideration all voivodeships, can be observed. In 2007-2013 programming period voivodeships intended to invest in TO 4 on average 2% and in 2014-2020 programming period about 15.5%. In the opposite direction the variation of voivodeships changed: decrease from 35% to 16%.

A significant decrease in the share of allocation for the issues connected with environmental protection and risk prevention (TO 5 and 6) can be seen. The average planned allocation in 2014-2020 taking into account all voivodeships is about 8% comparing to 17% in the previous programming period. The pattern of change was quite different in different voivodeships (the biggest change occurred in Śląskie: decrease from 22% to 6%, the smallest in Świętokrzyskie: decrease from 17% to 13%). The consequence of such change is the increase in variation of voivodeships with regards to the share of planned investments dedicated to environmental issues: increase of CV from 12% to 30%.

The only voivodeships which decided to allocate in the new programming period relatively more funds for issues connected with transport (TO 6) are Dolnośląskie and Opolskie. All other voivodeships' share of funds decreased so did the average (decrease from 19% to 15%). The variation of voivodeships with regard to the share of planned allocation for transport is small in both analyzed programming periods.

The regions are not highly diversified regarding the allocation of funds for promoting employment and supporting labor mobility under TO 8, but the increase of variation can be observed (CV grew from 8% to 19%). All voivodeships decided to invest relatively less in activities related to this issues. The highest portion of funds for TO 8 will be allocated by Łódzkie (15%), the lowest portion (almost 7%) by Mazowieckie, the only region qualified as the more developed in the 2014-2020 period.

The share of planned investments on promoting social inclusion is rather similar in all voivodeships, which is confirmed by the low CV (13%) in both programming periods. Warmińsko – mazurskie is the voivodeship with the lowest planned allocation for TO 9 (13%) and Kujawsko – pomorskie with the highest planned allocation (21%). All voivodeships decided to invest more funds in the categories of intervention connected with combating social exclusion, so the average share in Polish voivodeships increased from 9% to 16%.

In the case of the last 10th thematic objective financed under Regional Operational Programmes, namely investing in education, skills, and lifelong learning, a small decrease in the planned share of funds can be observed (the average dropped from 11% to 9%). Only three voivodeships decided to invest

more: Podlaskie, Pomorskie, and Warmińsko – mazurskie. Comparing 2014-2020 to 2007-2013 programming period with respect to the variation of shares of funds concentrated on this issue, the increase of CV from 13% to 21% is noticed.

The allocation for Technical assistance for the whole country in 2014-2020 increased to 3.36% of all funds (compared to 2.27% in the previous period) while the dispersion among voivodeships is smaller (CV decreased from 17% to 10%).

The main conclusion which can be drawn from the analysis conducted above is about the general greater dispersion of the allocation under TOs among voivodeships in the new programming period. It suggests the greatest autonomy of the regional authorities in the funds allocation planning (the needs or goals of particular voivodeships have the greatest influence on funds allocation).

The next question to be answered relates to finding any similarities or differences among voivodeships in expenditure structure. The authors aim is to group the voivodeships on the basis of the structure of intervention in delimited areas. To achieve this goal the hierarchical cluster analysis with Euclidean distance and Ward' method of agglomeration (1963) is employed. To set the number of groups Mojena's criterion (1977) with Milligan and Cooper (1985) correction is used (Formula 2)

$$d_{i+1} > \bar{d} + ks_d \quad (2)$$

where:

d_i – the distance among clusters;

\bar{d}, s_d – the mean and standard deviation of d_i

k – standard deviate, $k=1,25$ was adopted.

The results of grouping for the period 2007-2013 are presented in Figure 6 and Table 2. Due to the small differences among voivodeships, only two groups were identified. The first group consist of the following voivodeships: Warmińsko-Mazurskie, Świętokrzyskie, Pomorskie, Mazowieckie, Wielkopolskie, Opolskie, Zachodniopomorskie, Podlaskie. The representatives of the second group are the following voivodeships: Podkarpackie, Łódzkie, Lubelskie, Małopolskie, Kujawsko-Pomorskie, Śląskie, Dolnośląskie, Lubuskie. The main characteristic common to the voivodeships is the share of expenditures on TO Transport (high – above the mean for Poland in the first group and small – below the average in the second group).

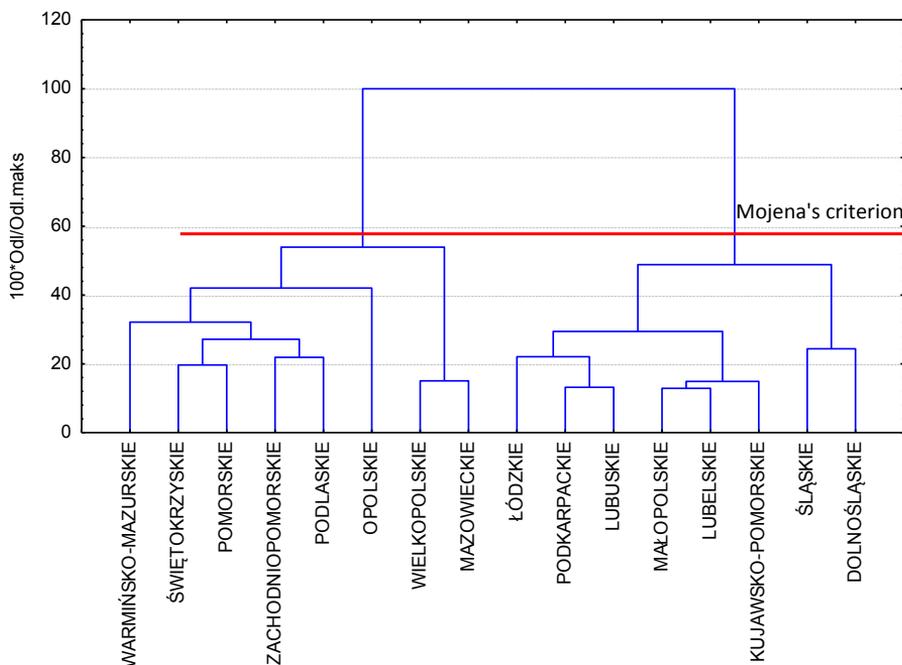


Figure 6. The results of grouping in 2007-2013

Table 2. The composition of the groups in 2007-2013

Group	Main features
Warmińsko-Mazurskie, Świętokrzyskie, Pomorskie, Mazowieckie, Wielkopolskie, Opolskie, Zachodniopomorskie, Podlaskie,	High share: • Transport (besides Opolskie)
Podkarpackie, Łódzkie, Lubelskie, Małopolskie, Kujawsko-Pomorskie, Śląskie, Dolnośląskie, Lubuskie	Small share: • Transport (besides Podkarpackie)

The results of grouping for the period 2014-2020 are presented in Figure 7 and Table 3. In relation to the bigger disparities among voivodeships in terms of expenditure structure, three groups were identified. The first group consist of the following voivodeships: Mazowieckie, Wielkopolskie, Zachodniopomorskie, Opolskie, Dolnośląskie Podlaskie, Podkarpackie, Lubuskie. There are only three representatives of the second group: Warmińsko-Mazurskie, Świętokrzyskie, Pomorskie. The third group is represented by Łódzkie, Lubelskie, Małopolskie, Kujawsko-Pomorskie, Śląskie. The main characteristics common to each group are described in Table 3.

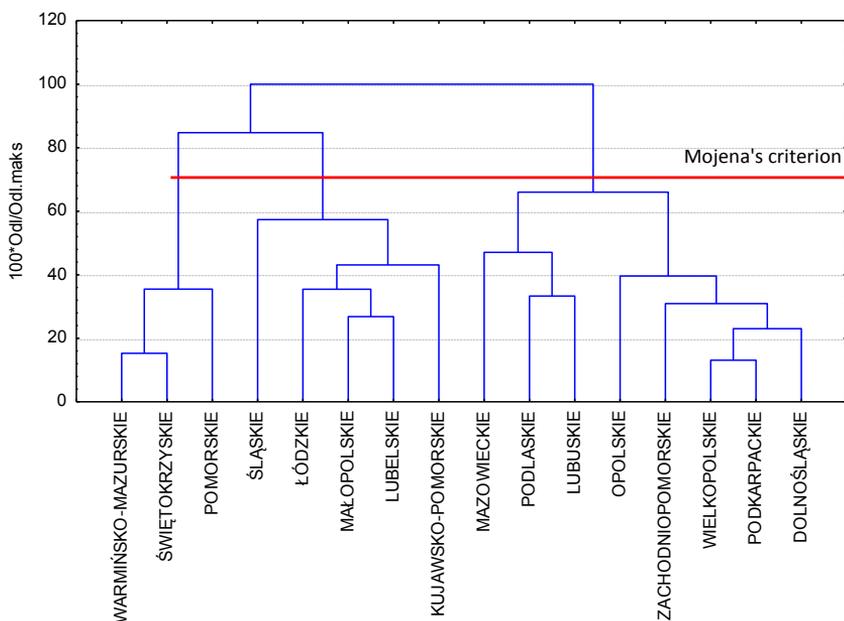


Figure 7. The results of grouping in 2014-2020

Table 3. The composition of the groups in 20014-2020

Group	Main features
Mazowieckie, Wielkopolskie, Zachodniopomorskie, Opolskie, Dolnośląskie Podlaskie, Podkarpackie, Lubuskie,	<p>Small shares:</p> <ul style="list-style-type: none"> Supporting the shift towards a low-carbon economy in all sectors (besides Dolnośląskie) Promoting social inclusion, combating poverty and any discrimination (besides Opolskie) <p>High shares:</p> <ul style="list-style-type: none"> Promoting sustainable transport and removing bottlenecks in key network infrastructures,
Warmińsko-Mazurskie, Świętokrzyskie, Pomorskie,	<p>Small shares:</p> <ul style="list-style-type: none"> Research, innovation and the competitiveness of SMEs Promoting sustainable transport and removing bottlenecks in key network infrastructures Promoting social inclusion, combating poverty and any discrimination; <p>High shares:</p> <ul style="list-style-type: none"> Climate change adaptation, risk prevention & protecting the environment and promoting resource efficiency, Investing in education, Training and vocational training for skills and lifelong learning,
Łódzkie, Lubelskie, Małopolskie, Kujawsko-Pomorskie, Śląskie,	<p>Small shares:</p> <ul style="list-style-type: none"> Promoting sustainable transport and removing bottlenecks in key network infrastructures <p>High shares:</p> <ul style="list-style-type: none"> Climate change adaptation, risk prevention & protecting the environment and promoting resource efficiency

4. Conclusions

The aim of this paper was to compare the allocation of EU cohesion policy funds under Regional Operational Programmes in two programming periods and find the groups of similar voivodships in terms of planned funds allocation.

First of all the amount of funds which allocation is the responsibility of regional self – governments increased in nominal and relative terms (as% of all EU funds in Poland). The analysis of data also shows that the pattern of funds distribution changed with respect to the thematic objectives. On average voivodeships plan to invest in the new programming period relatively more on issues connected with energy and social inclusion and less on environment protection issues. The analysis of the coefficient of variation for voivodeships on the basis of the share of fund allocation planned for thematic objectives, suggests that voivodeships are more diversified in terms of expenditure structure. The similar conclusions can be drawn from the cluster analysis. It suggests the greater autonomy of the regional authorities in the funds allocation planning in 2014-2020 in comparison to the previous programming period (the needs or goals of particular voivodeships have the greater influence on funds allocation).

The delimitation of the groups of voivodeships forms the next research questions about the reasons for such similarities in the expenditure structure. The factors determining the funds allocation are not explained in this paper and require further studies.

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