Lenka Smékalová (2018). Evaluating the cohesion policy: targeting of disadvantaged municipalities**.** *Administratie si Management Public*, (31), pp. 143-154, DOI: 10.24818 /amp/2018.31-10

# *Evaluating the cohesion policy: targeting of disadvantaged municipalities*

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***Abstract:*** *This paper deals with the evaluation of the cohesion policy of the European Union in the 2007 – 2013 period. The policy is analyzed with the focal point of spatial distribution of the European cohesion policy funds among the Slovakian municipalities in mind, with emphasis on the social and economic characteristics of said municipalities. As Slovakia was for the most part covered by the Convergence objective of the cohesion policy, with the exception of the region where the capital is located, the assumption is that the most socially and economically disadvantaged municipalities should have obtained significant amount of cohesion policy funding when compared to those municipalities that have better standing in these characteristics. The author clustered the municipalities in accordance with the known social and economic characteristics and the resulting clusters were then analyzed from the point of view of the amount of support the cohesion policy provided. The findings of the paper indicate that the support awarded to the municipalities in the identified clusters varies, however, the level of support does not necessarily follow the level of social and economic development, but rather follows the level of settlement hierarchy. Thus not fully reflecting the Convergence objective at the micro-regional level.*

***Keywords*****:** Cohesion Policy; European Union; Municipalities; Slovakia; Regional Disparities

***JEL:*** O18, O22, R12, R58
***DOI*****:** 10.24818/amp/2018.31-10

## Introduction

The relatively recently ended programming period 2007 – 2013 of the cohesion policy of the European Union presents the researchers with both the opportunity and the challenge to evaluate the spending of the most voluminous of European Union policies in terms of money allocated, the cohesion policy. The necessity for evaluation stems from the need to assess the efficiency of the policy and so present the policy makers with basis for further decision making that will guide the policy in following periods. This paper attempts to contribute to the debate on cohesion policy evaluation. The with the main objective is the assessment of the cohesion

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policy spending in the municipalities of Slovakia in comparison with the relative development status of these municipalities and so verify whether the intervention logic of support for the most socio-economically disadvantaged regions, as expressed on higher levels by the very naming of Convergence objective, was met or not. This research follows works published by Novosák et al. (2015), Hájek et al. (2014), Smékalová et al. (2014) which dealt with similar space patterns of cohesion policy funding and its spending. The paper is structured as follows: the first part states the problem and introduces the current situation and research, next part details the methods of the paper, then following part presents the results of problem solving, is followed by a discussion and finally the paper concludes.

## 1. Literature Review

The interest in evaluation of the cohesion policy spending is long term and can be traced to analyses made on the behest of the European Union authorities (Bachtler, Begg, Polverari, & Charles, 2013; European Commission, 2011; European Union, 2015) and the community of academia (Dall'erba, 2005; Dall'erba & Le Gallo, 2008; Ederveen, Groot, & Nahuis, 2006; Rodríguez-Pose & Fratesi, 2004) with growing interest in spatial patterns of the distribution of cohesion policy funding (Bouayad-Agha, Turpin, & Védrine, 2013; Ramajo, Márquez, Hewings, & Salinas, 2008; Scorza, 2013). The same goes for investigations of this phenomena in the territory of the Slovak Republic which is covered especially by domestic authors and the results of various analyses of the cohesion policy and spatial patterns of its distribution are pointing out at the uneven distribution of the cohesion policy spending (Brhlíková, Kočnerová, & Kúbeková, 2016; Hájek, Smékalová, & Zicha, 2014; Kluvánková-Oravská, 2004; Michálek, 2014; Smékalová, Hájek, Kubík, & Škarka, 2016). An uneven pattern in the distribution, however, does not necessarily equal targeting the lagging regions within a country and thus we encounter the difference between spatially blind and place based interventions that may take place within the cohesion policy. The spatially blind or space neutral approach advocates use of instruments that will result in equal access opportunities and in terms of cohesion policy should manifest as targeting of entire national states rather than regions thus ensuring the coverage of territories regardless of their economic status and performance (Barca, Mccann, & Rodríguez-Pose, 2012; Sapir et al., 2003; Varga, 2017). On the other hand, the place based interventions are much more in favour of targeting certain territories and using the so far unused potential of economic peripheries (Barca et al., 2012; Varga, 2017). The discourse on the advantages of the two approaches is vast and points out advantages and disadvantages of both. If we apply the fundamentals of these approaches on the real situation of the Slovak cohesion policy, we may see the signs of the place based approach in the way Slovak government predetermined a set of municipalities to be targeted significantly by the cohesion policy interventions. The government called these the "growth poles".

There are more than 2900 municipalities in Slovakia and those the Slovak government divided into three categories for the purposes of the cohesion policy in the 2007-2013 programming period. These categories included cohesion growth poles, innovation growth poles and non-growth poles municipalities (Ministerstvo životného prostredia Slovenskej republiky, 2001). These categories were frequently mentioned in the operational programmes, the programme manuals, and the calls for proposals to define targeted or non-targeted places (see table 1) and made the cohesion policy more spatially concentrated in Slovakia (Babiak, 2012).

**Table 1. Growth pole preferences in Slovak operational programme manuals**

| **Operational Programme** | **Expressed Preference** |
|---|---|
| Competitiveness and economic growth | Growth poles preferred in priority axis Tourism |
| Transport | Innovation growth poles preferred in priority axes on integrated transport systems and public railway transport |
| Research and development | Innovation growth poles preferred in all priority axes |
| Regional operational programme | Growth poles preferred in priority axes on infrastructure of education, social services and social protection. |
| Environment | Innovation growth poles preferred in priority axis on strengthening cultural potential of the regions. |
| Informatisation of Society | No preference |
| Healthcare | No preference |
| Employment and social inclusion | No preference |
| Education | No preference |

(*Source:* The operational programme manuals of individual operational programmes of Slovakia by Government Office of the Slovak Republic, 2008)

However, the issue with this grouping of the Slovak municipalities lies in the way these categories were set up. According to the information on the creation of these categories, the creators used the following criteria: the position of a municipality in the settlement hierarchy and nature of social amenities available, rather than using economic characteristics of the municipalities. Therefore, this paper takes an approach of creating new grouping of Slovak municipalities, dividing them into categories according to the economic and social characteristics predating the 2007-2013 programming period and then comparing the amount of support received from the cohesion policy funding thus contributing to the ever-growing evidence for the efficiency of spending of the funds.

The creation of new grouping addresses the need for identification of lagging regions at the level of the Slovak municipalities. In this regard, the authors could not use the characteristics of gross domestic product per capita which the European Union uses to distinguish between lagging and non-lagging regions. Due to lack of data on the level of municipalities other available characteristics had to

be used. Given the often mentioned relations between core and periphery (Copus, 2001; Kühn, 2015), the indicators used focused on distinguishing between these two categories, they also focused on the demographic indicators (similarly as Pociute, 2014 did) and on the importance of service sector and entrepreneurial activity which play significant role in the regional development (Acs, 2006; Huggins & Williams, 2011) and at the same time seek out forms of external funding (Belas, Rahman, Rahman, & Schonfeld, 2017; Rahman, Rahman, & Belas, 2017; Ruchkina, Melnichuk, Frumina, & Mentel, 2017). These indicators are used to create a typology of Slovak municipalities and identify the lagging ones. The categories of previously mentioned typology are then examined from the point of view of the cohesion policy support received.

## 2. Methodology

The sources of the data relating to the cohesion policy projects implemented in the Slovak municipalities used in this paper are mainly the officially released list of beneficiaries published by the Government Office of the Slovak Republic in May 2014 (Government Office of the Slovak Republic, 2014). However, as this list misses some crucial information including the spatial location of the projects, the information was enhanced by data taken from individual contracts concluded with the beneficiaries and released regularly by the same institution via the Central Register of Contracts and the Central Register of Projects. For the purposes of this paper the authors only analysed the projects which could be located at the level of Slovak municipalities, thus this analysis omits number of projects which were implemented mostly by the central Slovak government or regional governments and represent in itself other grant schemes. The projects of technical assistance were omitted from the analysis as well.

In order to create a suitable typology of the Slovak municipalities concerning their social and economic standings, the authors used following variables available at the level of municipalities which were published by the Statistical Office of the Slovak Republic (2017):

- the share of unemployed persons on the economically active population of the municipality in % (hereinafter UNEMP),
- the share of self-employed persons on the economically active population of the municipality in % (hereinafter SELF),
- the share of persons working in agriculture, fishery and forestry on the economically active population of the municipality in % (hereinafter AGRI),
- the share of persons working in selected services (banking, research, development and innovation) on the economically active population of the municipality in % (hereinafter SERV),
- the share of persons who achieved university level education out of the population over 15 years of age in % (hereinafter UNIED),

- the share of migration balance on the total population of the municipality in % (hereinafter MIGR),
- the population density in persons per km2 (hereinafter DENS) and
- the share of persons over 65 years of age on the total population of the municipality in % (hereinafter OVER65).

Among the variables chosen for analysis there was no significant correlation at high enough level (see table 2).

**Table 2. Correlation matrix of the chosen variables**

| | UNEMP | DENS | UNIED | MIGR | OVER65 | SELF | AGRI |
|---|---|---|---|---|---|---|---|
| **DENS** | -,151*** | | | | | | |
| **UNIED** | -,434*** | ,418*** | | | | | |
| **MIGR** | -,116*** | -0,02 | ,225*** | | | | |
| **OVER65** | -,042** | -,285*** | -,179*** | -,076*** | | | |
| **SELF** | -,439*** | ,065*** | ,320*** | ,139*** | -0,02 | | |
| **AGRI** | ,363*** | -,350*** | -,362*** | -,138*** | ,280*** | -,195*** | |
| **SERV** | -,363*** | ,275*** | ,550*** | ,276*** | -,107*** | ,188*** | -,315*** |

** - Correlation significant at the 0,01 level (1-tailed)

*** - Correlation significant at the 0,001 level (1-tailed)

(*Source:* Author based on Statistical Office of the Slovak Republic, 2017)

The creation of the typology of the Slovak municipalities was achieved by applying the cluster analysis to standardized z-scores of the aforementioned characteristics. The clustering method used was the non-hierarchic k-means clustering which fits the large number of municipalities analysed and was selected due to the possibility to shift the objects – municipalities between the clusters (Everitt, Landau, Leese, & Stahl, 2011; Mooi & Sarstedt, 2011a). The number of clusters was determined by means of applying variance ratio criterion (VRC) as described by Mooi and Sarstedt (2011b) which concluded in the resulting five cluster scenario (see table 3).

**Table 3. Application of VRC to determine number of clusters**

| **Number of Clusters** | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|
| **VRC** | 5636,6 | 4958,8 | 5045,6 | 4539 | 3923,2 | 3073,1 | 2844,7 | 2793,6 | 2726,2 |
| **ωk** | -29,8 | 764,6 | -593,4 | -109,3 | -234,2 | 621,7 | 177,3 | -16,3 | 39,1 |

(*Source:* Author based on Statistical Office of the Slovak Republic, 2017)

## 3. Empirical results and discussion

Table 4 shows the final cluster centres of the five identified clusters and figure 1 the dispersion of the clustered municipalities in the Slovak Republic territory. Considering the characteristics of the individual clusters, they can be described as follows. First two clusters may be described as the more lagging, the thirds as average and the fourth and fifth clusters represent regions with social and economic advantage in the relative terms of Slovak Republic.

The first cluster numbering 371 municipalities is typically comprised of rural municipalities with very small density of population, high share of workers in agriculture and high share of people over 64 years of age. It also shows higher unemployment rate than is the average of the Slovak Republic. The municipalities in this cluster average the highest share of people migrating elsewhere. Spatially, the cluster municipalities are unevenly distributed across Slovakia with visible occurrences in the peripheral areas of Slovakia bordering other countries, especially on the north-east border and in the vicinity of the southern border (see fig. 1).

Second cluster, numbering 443 municipalities, shows some similar characteristics as the first one especially in terms of relatively high number of agriculture workers and has in fact the highest average unemployment, more than double of the national average. The population density is below the national average. The distinct differences are mainly in lower share population over 65 years of age, mildly positive migration balance and the lowest share of self-employed people on the economically active population. Both the first and second cluster have significantly lower share of university educated population. The municipalities of the second cluster are concentrated mostly in the south of Slovakia with prevalence in the middle and eastern part of the Republic.

The third cluster with 1 489 municipalities represents the average in most characteristics, given to describe the social and economic standing of the municipalities with largest deviations from average being lower unemployment rate and smaller share of population being employed in the agriculture sector. Due to the large number of municipalities, the spatial occurrence is more evenly distributed across the Republic with more numerous representation in western and northern parts.

The fourth cluster includes 75 municipalities with evidence of the highest density of population, the highest proportion of university educated population, the smallest proportion of people working in agriculture sector and second largest proportion of people working in the selected services and low unemployment rate. However, on average, the municipalities included show evidence of mildly negative migration balance. Spatial wise these municipalities present isolated occurrences throughout the Slovakia, corresponding with the top tier level of settlements.

The fifth cluster of 510 municipalities shows similar characteristics, the marking differences are in significantly lower population density, higher proportion

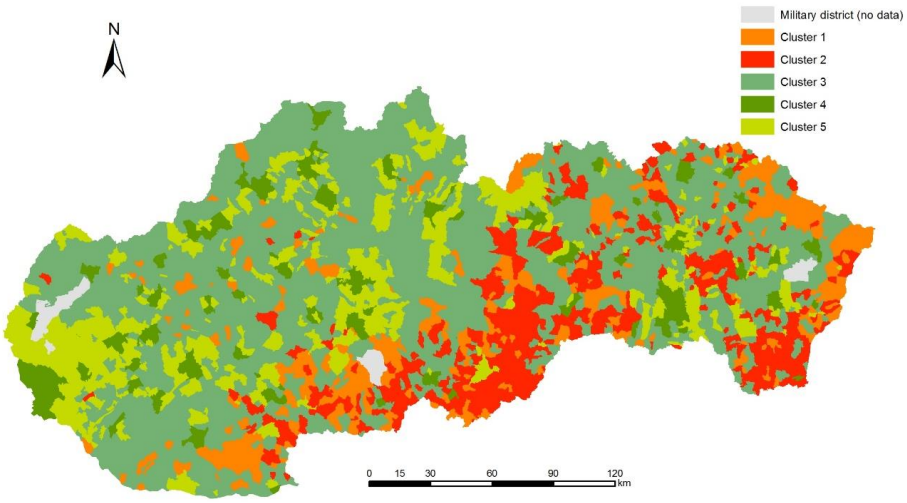
of workforce employed in agriculture and the fact, that the fifth cluster is markedly gaining the most of new inhabitants as evidence by high and positive migration balance. Other than that, both clusters mentioned give evidence of strong entrepreneurship culture with highest share of self-employed people and both include strong settlement centres where people work in the sector of selected services. The municipalities in question are frequently concentrated in the hinterland of cluster 4 municipalities across Slovakia.

**Table 4. Final cluster centres**

| **Zscore/Cluster** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Zscore: UNEMP | 0,324 | 1,736 | -0,359 | -0,531 | -0,617 |
| Zscore: DENS | -0,526 | -0,206 | -0,115 | 4,841 | 0,186 |
| Zscore: UNIED | -0,68 | -0,793 | -0,079 | 2,052 | 1,112 |
| Zscore: MIGR | -0,635 | -0,024 | -0,08 | -0,507 | 0,791 |
| Zscore: OVER65 | 1,471 | -0,506 | -0,105 | -0,796 | -0,208 |
| Zscore: SELF | -0,43 | -0,987 | 0,221 | 0,15 | 0,504 |
| Zscore: AGRI | 1,412 | 0,405 | -0,213 | -1,082 | -0,597 |
| Zscore: SERV | -0,58 | -0,586 | -0,171 | 1,066 | 1,272 |

(*Source:* Author based on Statistical Office of the Slovak Republic, 2017)

**Figure 1. Clusters of municipalities in Slovakia**




(*Source:* Author based on Statistical Office of the Slovak Republic, 2017 and the Government Office of the Slovak Republic, 2014)

The above-mentioned cluster scenario is describing the level of social and economic status of the municipalities included. The question that occurs is whether

these actual characteristics have any bearing on the amount of support the municipalities received from the European Union funding. The answer to this question should be affirmative, however it is necessary to be aware of the fact that the European Union deals with much larger territorial units than the Slovak municipalities represent. The necessity to aim the support from the European Union cohesion policy to the municipalities should therefore be of particular interest to Slovak Republic itself.

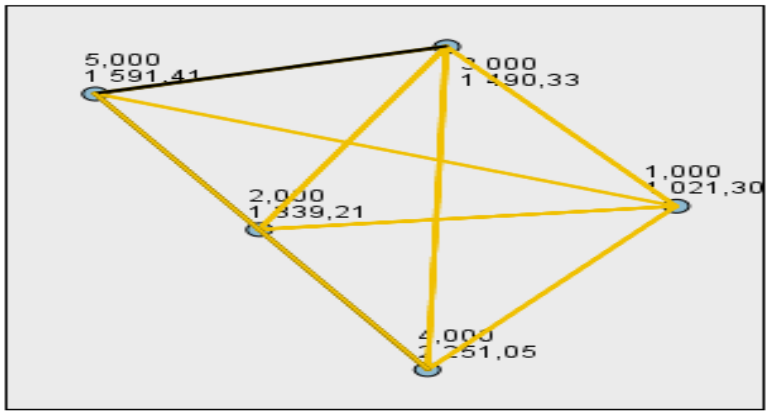
The support awarded to the municipalities in the identified clusters varies. Each cluster with the exception of cluster 4 shows evidence of higher share of unsupported municipalities, i.e. those where no projects funded thought the cohesion policy were implemented. This figure ranges from 87 % to 94 % of individual municipalities included in the clusters. Only the fourth cluster is significantly different in this regards with merely 18 % of the municipalities showing zero support. This situation points at rather strong spatial concentration of the cohesion policy supported projects in relatively few municipalities. The results of Kruskal-Wallis test show that there are indeed significant differences between the clusters as far as the amount of support from the cohesion policy per capita is concerned (see table 5). Indicating they were not supported equally. In fact, the post hoc pairwise comparisons indicate high diversity among them with the exception of the relationship between the clusters 3 and 5 (see fig. 2).

**Table 5. Results of the Kruskal-Wallis test**

| | EU funds per capita |
|---|---|
| Chi-Square | 209,43 |
| df | 4 |
| Asymp. Sig. | 0 |

(*Source:* Author based on Statistical Office of the Slovak Republic, 2017 and the Government Office of the Slovak Republic, 2014)

**Figure 2. Pair wise comparison of the clusters**




(*Source:* Author based on Statistical Office of the Slovak Republic, 2017 and the Government Office of the Slovak Republic, 2014)

The third and fifth clusters are the most numerous with the characteristics that distinctly tend towards average. Considering the cohesion policy funding, these clusters are characterized by large frequency of non-supported municipalities and the mean of cohesion policy support that is larger than in clusters 1 and 2 which comprise the more rural municipalities and at the same times is distinctly smaller than in cluster 4 which embodies the top tier of the settlement hierarchy of Slovakia (see table 6).

**Table 6. Cohesion policy support in clusters**

| Cluster | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Mean support (€ per capita) | 371 | 678 | 1078 | 1284 | 1744 |
| Median support (€ per capita) | 0 | 59 | 195 | 1046 | 232 |

(*Source:* Calculation based on data published by Statistical Office of the Slovak Republic, 2017 and the Government Office of the Slovak Republic, 2014)

## 4. Conclusions

The results obtained in this paper indicate that there are several distinct cluster of municipalities in Slovak Republic which were obtained by means of cluster analysis in which the variables were focused on regional disparities in terms of social and economic development on the level of Slovak municipalities, in terms of European Statistic Office the LAU 2 units. Clustering these municipalities according the level of social and economic development resulted in creation of five differentiated clusters. The differences among them were found in various variables aimed at the description of social and economic standings. Thusly obtained clusters were then compared in terms of acquired cohesion policy support which was obtained through the cohesion policy projects that were implemented within the boundaries of individual municipalities included in the clusters in the programming period 2007 – 2013. The expectation stemming from the cohesion policy objectives and architecture would indicate that the support should be primarily aimed at the socially and economically disadvantaged regions. However, this assumption is primarily valid at spatial level of NUTS 2 with the accordance of the cohesion policy structuring at the level of the European Union. The evidence from the data obtained at the level of municipalities, however, shows that the cohesion policy support is distributed unevenly among the identified clusters. The largest amounts of support per capita are aimed at the cluster which was in fact identified as socially and economically the most sound and is represented by the municipalities in the topmost tier of Slovak settlements hierarchy, represented by large settlements and the seats of regional governing bodies. Lower amounts are generally aimed at the more rural places. It is nevertheless necessary to acknowledge that in the 2007 – 2013 programming period, the rural municipalities were subject to support form the funds of the common agricultural policy and this type of support is not included in the analysis presented in this paper which presents a limitation to this research and at the same time calls for a more detailed inspection of the common agricultural policy and its interaction with the regional policy as well as research into other determinants of cohesion policy funds distribution.

**Acknowledgement**

The author is thankful to the Czech Science Foundation for financial support of this research within the grant project no. 16-22141S titled Determinants of Spatial Allocation of EU Cohesion Policy Expenditures in the Context of Territorial Impact Assessment.

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