

## MITIGATION OF REGIONAL DISPARITIES THROUGH CLUSTERS

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**Abstract:** *Regional differences and insufficient regional development are a long-term problem for the Slovak economy. Regional disparities cause insufficient use of existing resources and reduce the competitiveness of individual regions. In this paper, after a short introduction of terminology, in the first part we justify the importance of research into regional disparities. In the next part we will focus on the development of regional differences in the Slovak Republic in recent years. At the end of our contribution, we will try to outline the possibility of addressing regional differences. The basic prerequisite for reducing regional disparities is to support the development of small and medium-sized enterprises, but this requires the establishment of an appropriate business environment by the state. One of the possibilities is also to support the establishment of cluster initiatives, which we can say are relatively effective ways to support the development of entrepreneurial activities in the region and thereby reduce regional disparities.*

**Key words:** *Regional differences, regional development, region, cluster initiatives*

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### 1. INTRODUCTION

There are still substantial differences between European regions and states, which are related to competitiveness, infrastructure or culture. Significant differences in the socio-economic level of the regions are the current problem of most European Union countries, including Slovakia. Balancing these differences is one of the main objectives of the regional policy of the state. The concept of regional disparity is understood differently. There is no precise and universal definition of the concept of regional disparity. Matlovič, R., Klamár, R., Matlovičová and K. [11] understand regional disparities as differences in the degree of socio-economic development of the regions due to its inequality. Gajdoš, P. [1] points out that regional disparities are a product of multiple factors, depending on the quality and developmental potential availability but also on the different positions from which each region has entered the transformation process. The concept of regional disparities perceives as measurable differences in the development of delimited regions (units) characterized by a set of predetermined or later indicators of different types (social, economic, ecological) and it is possible to have data for a longer period of time. The growing disparities between regions are the reason for implementing a regional policy that is closely linked to regional development. Regional policy instruments help lagging regions to reach the average level of developed regions. Regional policy is a framework setting the rules for addressing territorial, social and

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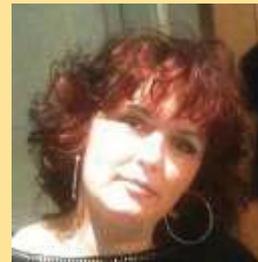
economic equilibria. According to Habánik, Koišová [5], regional development is a gradual direction towards a higher living standard and the quality of life in a given area. Development is inevitably linked to the implementation of partial policies that create a coherent framework of economic policy through interaction. Development has its own quantitative and qualitative character and the co-operation of sectoral policies is a key tool for its security. Within the regional economy operate various institutions and partnerships whose mission and activities create conditions conducive to the development of the region, formation of its structure and capacity utilization. One of the options for improving the economic performance of regions is to promote the development in certain sectors of the prevailing in the region. This creates a unique environment to unite enterprises of a similar nature (Habánik et al.) [6].

Each geographical region of Slovakia shows different results of various economic, employment, the structure of the industry, the amount of the wages, the potential for tourism and other indicators. The attractiveness of regions creates a good potential for the formation of cluster. (Strunz, Jašková ) [14] At present, clusters are considered to be a significant factor that increases the attractiveness and prosperity of the regions. In recent years cluster popularity has grown and new cluster initiatives are emerging, which are becoming part of national and regional economic programs.

Analysis of regional disparities in terms of methodology requires consideration of two primary problems. The first is the use of appropriate territorial breakdown and the second choice of appropriate indicators. Unsuitable observation units or indicators may cause distortion and regional disparities will be considered intra-regional disparities, social disparities, and so on. Unfavorable territorial breakdowns and indicators may also lead to an overestimation of the level of regional disparities. Addressing the problem of selecting observational territorial units is based on the limited availability of relevant data. Our analysis will therefore be based on NUTS 3 statistical regions. In order to eliminate of the impact of the capital city on the analysis of regional disparities, we worked with two spatial modeling in SR (model A, B). Model A represents the breakdown of SR into 8 NUTS 3 units (Bratislava region, Trnava region, Nitra region, Trenčín region, Žilinský region, Banskobystrický region, Prešov region, Košický region). Model B works with 7 units (7 regions without the Bratislava region). The choice of the indicators of our analysis was determined by their availability as well as by the requirement that the indicators reflect the changes in the socio-economic development of the regions. Even Grman [3] points out that, when analyzing regional differences, it is necessary to use indicators that are measurable. Therefore, for our analysis, we chose the following indicators:

- GDP per capita,
- Average monthly salary of an employee in EUR,
- Gross fixed capital formation in current year. prices (EUR million),
- Net cash expenditure per person and month ( EUR ),

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- Unemployment rate in %.

The evaluated period was the interval 2008 - 2016 of years. The data needed for the calculation were drawn from the Statistical Office of the Slovak Republic. The analysis was to provide a picture of the development of regional disparities in Slovakia during the outbreak of the economic crisis in 2008 (GDP growth in 2008 was reduced to 5.8%, in 2009 there was an economic recession of -4.8% and in 2010 there was a return to GDP growth of 4%) until 2016. We used the Gini coefficient to assess the overall development of regional disparities by individual indicators in the monitored period 2008-2016. We calculated the Gini coefficient using the following formula:

$$\text{GINI} = \frac{2}{N-1} \sum_{i=1}^{N-1} / Fi-Qi/$$

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GDP per capita is a share of two indicators - the regional gross domestic product (applying the benchmarking criterion by place of work) and the average resident population in that region. This indicator is characterized by economic prosperity, the region's lag with regard to its productive potential.

Table 1: GDP per capita - GINI coefficient development

Year/model	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>A</b>	0,2481	0,2652	0,2643	0,2706	0,2630	0,2655	0,2613	0,2565	0,2538
<b>B</b>	0,1135	0,1129	0,1135	0,1184	0,1168	0,1112	0,1135	0,1011	0,1032

Source: Custom calculations based on DATAcube data

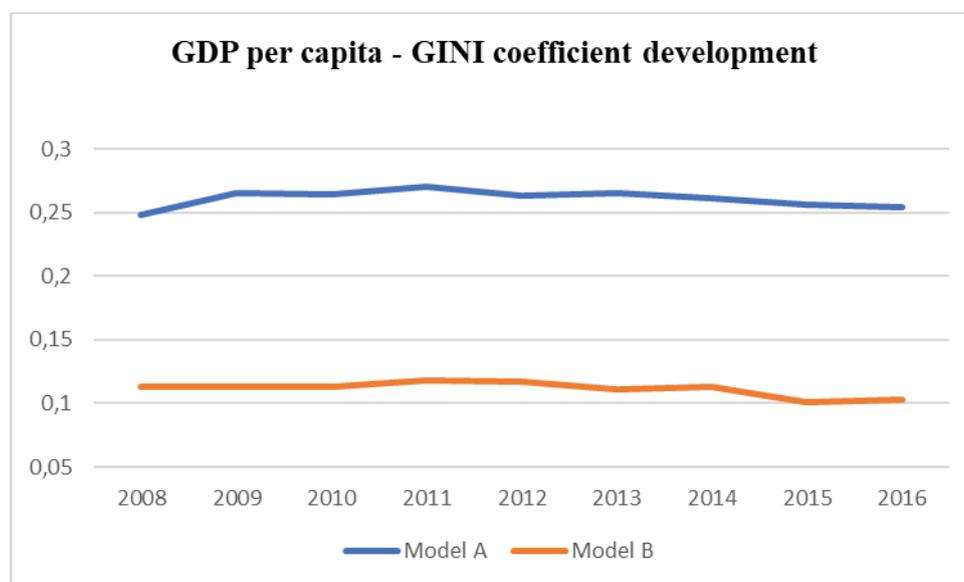


Figure 1: GDP per capita - GINI coefficient development

Based on this indicator, we can conclude that there has been no significant increase in regional disparities over the period under review. The second indicator used was the average monthly wage. The average monthly wage is one of the basic economic parameters in which we can document the differentiated development of the regions. This is the average gross nominal monthly wage in enterprises with 20 or more employees. It is converted to natural persons and does not include business income.

Table 2: Average monthly salary of an employee in EUR - GINI coefficient development

Year/model	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>A</b>	0,09076	0,08926	0,08693	0,08351	0,08400	0,08081	0,08371	0,07970	0,07978
<b>B</b>	0,04372	0,04013	0,04003	0,04005	0,03887	0,03628	0,03534	0,03532	0,03487

Source: Custom calculations based on DATAcube data

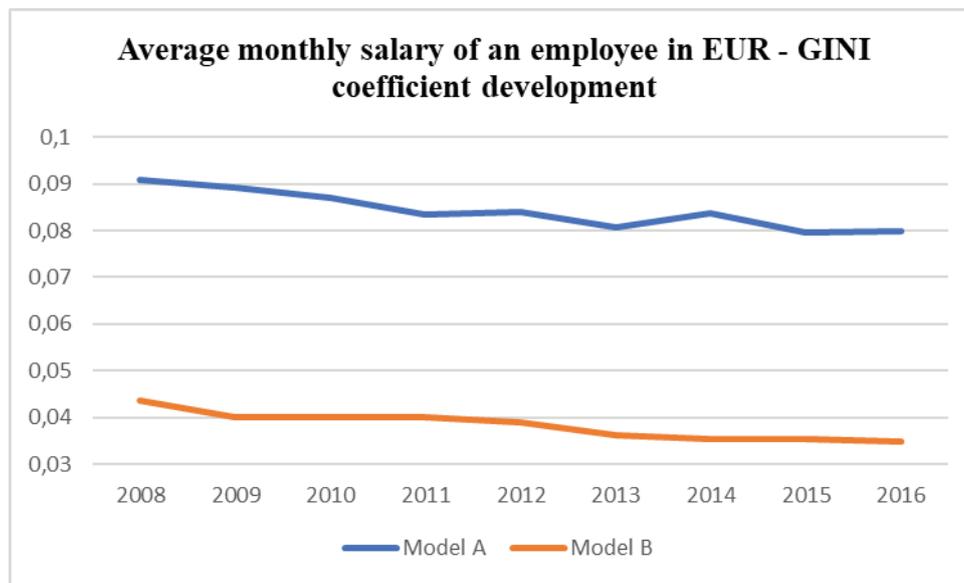


Figure 2: Average monthly salary of an employee in EUR - GINI coefficient development

According to this indicator, the regional disparities declined from 2010 when the SR there was a return to GDP growth. Gross fixed capital formation indicator is the acquisition of fixed assets less the loss of fixed assets by producers Regional gross capital formation is the sum of gross capital formation per sector. It is therefore an economic indicator of regional disparities.

Table 3: Gross fixed capital formation in current year, prices (EUR million) - GINI coefficient development

Year/model	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>A</b>	0,1868	0,2131	0,2754	0,3053	0,3537	0,4138	0,3239	0,3065	0,3266
<b>B</b>	0,0826	0,0661	0,0509	0,0553	0,0647	0,0619	0,0733	0,0962	0,1092

Source: Custom calculations based on DATAcube data

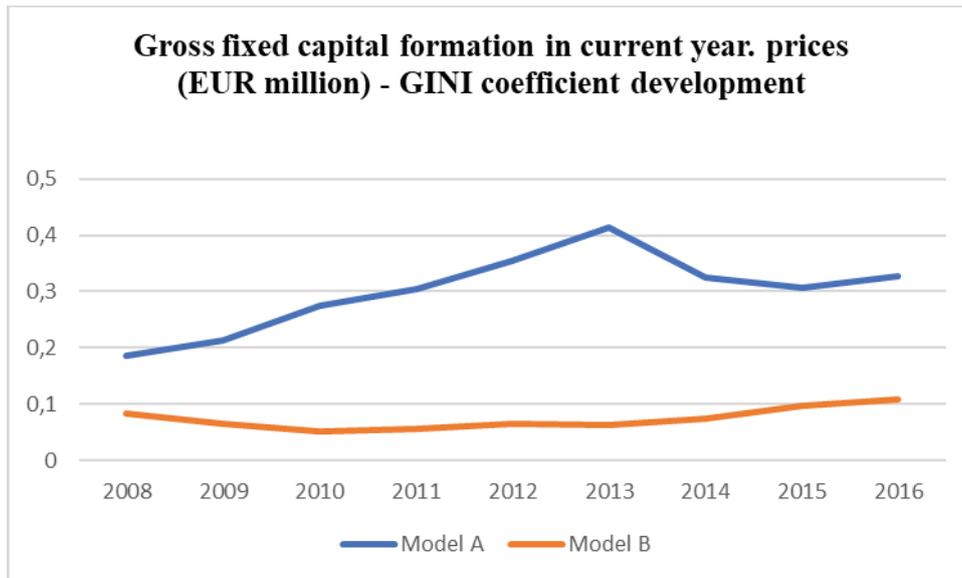


Figure 3: Gross fixed capital formation in current year. prices (EUR million) - GINI coefficient development

Net cash expenditure per person and month (in EUR) is similar to previous indicators for economic indicators of regional disparities. This includes consumption and other net expenses. This indicator provides a certain picture of the living standard in the region in question.

Table 4: Net cash expenditure per person and month (EUR ) - GINI coefficient development

Year/model	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>A</b>	0,0681	0,0568	0,0705	0,0603	0,0640	0,0689	0,0738	0,0777	0,0765
<b>B</b>	0,0401	0,0296	0,0451	0,0363	0,0378	0,0356	0,0442	0,0647	0,0655

Source: Custom calculations based on DATAcube data

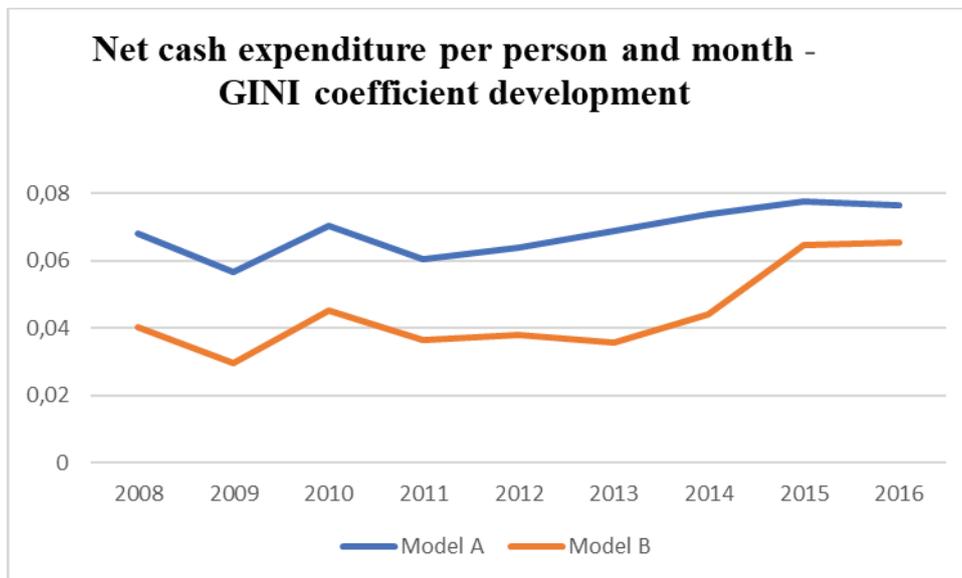


Figure 4: Net cash expenditure per person and month ( EUR ) - GINI coefficient development

Based on the development of this indicator, we can note that regional disparities after 2013 have gradually increased. The last of the indicators used is the unemployment rate. It is a good indicator of socio-economic development in the regions. It is calculated as the share of the available registered number of unemployed to the number of economically active population.

Table 5: Unemployment rate - GINI coefficient development

Year/model	2008	2009	2010	2011	2012	2013	2014	2015	2016
A	0,3365	0,2504	0,2473	0,2391	0,2371	0,2120	0,2141	0,2287	0,2699
B	0,2817	0,1918	0,1937	0,1893	0,1862	0,1681	0,1793	0,1985	0,2527

Source: Custom calculations based on DATAcube data

This indicator shows a decline in regional disparities in the monitored period of 2008 to 2013, thereafter the development has changed, and gradual regional disparities are increasing.

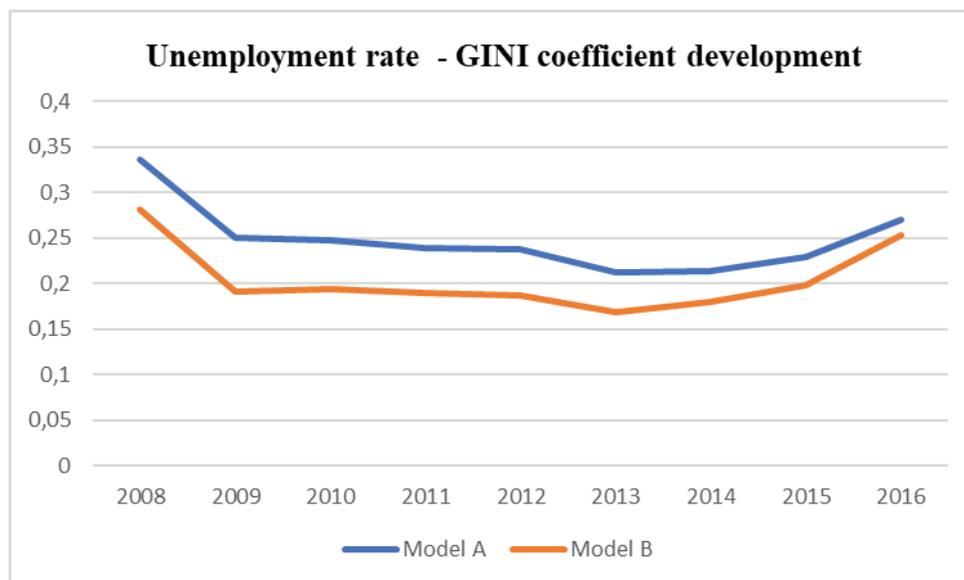


Figure 5: Unemployment rate - GINI coefficient development

## 2. CONCLUSION

At present, clusters are considered to be a significant factor that increases the attractiveness and prosperity of the regions. In recent years, cluster popularity has grown and new cluster initiatives are emerging, which are becoming part of national and regional economic programs. Vojtovič, Krajnaková, Kordos, Karbach, [9] [15] claim that current economic activity is characterized by the forces of globalization, technological progress, deregulation and democratization, which together create an extremely complex business environment for companies and their clusters. We could define the cluster as a geographic group of interconnected companies. This definition includes two important criteria according to which the cluster can be defined. Firstly, cluster has its geographical boundaries - that is, companies cooperate within a given region (regional clusters) or can collaborate across borders (international clusters). Second, another important element is cooperation between companies operating in the same or related sector. These companies do not cooperate only with each other, but also with research institutes, universities, and often local governments. According to Gavlak [2], clusters are a potential tool for increasing regional value because they use a combination of knowledge, skills

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and abilities of several subjects. The important benefits of clusters are that they create an environment suitable for innovation. Hence, clusters with strong clusters are considered to be innovative leaders, globalization deepening these trends. Ketels and Memedovic [8] argue that cluster promotes the economic and social stability of regions.

In the region, on the basis of the common objectives of the companies in the clusters, is secure

- Sustainable and strategic development of the sector,
- preserving social values,
- the living standards in the region are increasing.

All this is happening through:

- building technical and social infrastructure,
- raising the education of the inhabitants of the region,
- human resources development,
- learning to other cultures,
- the protection of the natural and cultural heritage and traditions of the region,
- improving the environment in the region,

which contributes to the overall socio-cultural and economic development of the region and thus to the reduction of regional disparities. Thus, the rational building of SME clusters contributes not only to their development and growth, but also to overall regional development. Therefore, clusters are becoming one of the tools to solve regional disparities.

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