

# KONKURENČNOST IN KOHEZIJA V REGIONALNEM RAZVOJU ROMUNIJE: TERITORIALNI PRISTOP

## COMPETITIVENESS AND COHESION IN ROMANIA'S REGIONAL DEVELOPMENT: A TERRITORIAL APPROACH

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UDK: 332.1(498)  
Klasifikacija prispevka po COBISS.SI: 1.01  
Prispelo: 12. 5. 2021  
Sprejeto: 25. 8. 2021

DOI: 10.15292/geodetski-vestnik.2021.03.440-458  
SCIENTIFIC ARTICLE  
Received: 12. 5. 2021  
Accepted: 25. 8. 2021

### IZVLEČEK

Ocena družbeno-gospodarskih razlik med regijam je ena izmed glavnih razvojnih tem. To še posebej velja za nekdanje socialistične-planske države, kjer smo priča velikim regionalnim razlikam, ki so nastale zaradi razvoja pod vplivom tranzicijskega obdobja, vstopa v Evropsko unijo in gospodarske krize. Glavni cilj raziskave je bil identificirati najbolj konkurenčne in najbolj povezovalne razvojne regije v Romuniji, in sicer z izračunom, kartiranjem in analizo dveh sekundarnih indeksov (teritorialna konkurenčnost in teritorialna kohezija). Rezultati so pokazali na bolj konsolidirano gospodarstvo dejavnost v osrednjih in zahodnih regijah, kjer gospodarstvo temelji na zreli in inovativni industriji, bolj razvitih storitvah in procesih urbanizacij/suburbanizacije, medtem ko se regije na vzhodu in jugu s prevladujočimi ruralnimi območji srečujejo s krčenjem industrijske dejavnosti in družbenim pomanjkanjem. Najbolj konkurenčna je razvojna regija Bukarešta-Ilfov glavnim mestom Bukarešta, ki je glavno gospodarsko in družbeno središče Romunije. Za zmanjšanje regionalnih razlik bi moralo biti v okviru kohezijske politike več sredstev dodeljenih državam z manj razvitimi regijami. V študiji so podani rezultati kvantitativne in kvalitativne analize o teritorialnih razlikah med regijami v Romuniji, ki jih je mogoče uporabiti kot usmeritve pri sprejemanju odločitev za zagotovitev konkurenčnega in usklajenega regionalnega razvoja.

### KLJUČNE BESEDE

konkurenčnost, kohezija, teritorialne razlike, razvojne regije, Romunija

### ABSTRACT

The assessment of the socio-economic disparities at the regional level is one of the priority development topics. In particular, in formerly socialistic-planned countries, the development driven by the transition period, the accession to the European Union and the economic crisis, the regional disparities are present. The main aim of the research has been to identify the most competitive and the most cohesive Development Regions in Romania by computing, mapping and analysing two secondary indexes (Territorial Competitiveness and Territorial Cohesion). Overall, the investigation shows that economic performance is more consolidated in central and western regions based on their mature and innovative industries, better-developed services and urbanisation/suburbanisation processes, while the eastern and southern development regions, with predominantly rural traits, experienced a significant industrial decline and social deprivation. The most competitive Development Region is Bucharest-Ilfov, given the advantage conferred by Bucharest Capital City, the main economic and social polarising centre in Romania. For reducing regional disparities, the Cohesion Policy should allocate increased funds for countries with least developed regions. The study provides the result of quantitative and qualitative analysis on the regional-level territorial disparities in Romania that could easily be considered as guidelines in the decision-making process while trying to achieve the competitiveness and cohesion goals.

### KEY WORDS

competitiveness, cohesion, territorial disparities, Development Regions, Romania

## 1 INTRODUCTION

Romania's official request for EU membership (June 22, 1995) opened up the road to negotiations for taking on the European Community Acquis. In regards to the administrative-territorial structures, that moment marked the development of initiatives to set up territorial units comparable in area and demographic size to other regions in Europe. The idea of integrating former administrative structures gained ground against the proposals of fragmentation based on the former county pattern. As a result, in 1996, the eight Development Regions emerged and constituted the territorial framework for the implementation of development policies. They were mentioned in the *Green Paper, Regional Development Policy in Romania* (1997) and sanctioned by the laws 151/1998 and 315/2004 on Regional Development in Romania.

According to Law 151/1998, the establishment of the Development Regions aimed to: reduce the economic and social disparities between the different regions of the country, which had accumulated over time; prevent new imbalances; support the sustainable development of all regions; prepare the institutional framework for joining the EU and accessing structural funds; correlate the government sectorial politics by stimulating initiatives and capitalising on the local and regional resources; stimulate inter-regional, national and international and cross-border cooperation. From time to time, the regional development policy catches public attention and fundamental questions are raised concerning the legitimacy, representativeness and functionality of these regions. Those contesting these attributes are reminded of the necessity of having a regional framework also capable of meeting the EU requirements.

The current paper seeks to identify the territorial disparities in regional competitiveness and cohesion from a comparative view. The analysis is carried out at the level of the eight Development Regions of Romania (corresponding to the European Union NUTS II level). The main aim is to identify the most competitive and the most cohesive Development Regions by computing, mapping and analysing two secondary indices (Territorial Competitiveness and Territorial Cohesion). Moreover, the analysis will allow for the highlighting and comparing of the factors that contribute to regional competitiveness and cohesion.

## 2 LITERATURE REVIEW

The rhetoric of competitiveness is that each nation is like a big corporation competing in the global marketplace (Krugman, 1994). Thus, by making an analogy between a country and a corporation, the author noticed that the differences between the structures, values, cultures, institutions and histories contribute to the success of a nation's competitiveness. Porter (1990) called the nation's competitiveness the 'competitive advantage of nations, a concept that could also be applied to regions (Poot, 2000). According to Borozan (2008) regional competitiveness is not a pure derivative of national competitiveness, primarily due to the differences which become obvious between macro-economy and regional economy. Important differences arise from the fact that competitiveness at the national level is much higher and heterogeneous than at the regional level.

The modern approach suggests that regions are economic entities that should grow by using innovation and knowledge as essential determinants of regional competitiveness (Audretsch et al., 2016, quoted by Simionescu, 2016). Improving a nation or region's competitiveness is frequently presented as a central goal of economic policy. Still, the arguments abound as to precisely what this means and whether it is even sensible to talk of competitiveness at a macro-economic level at all (European Commission, 2019).

By competitiveness, we understand the attributes and qualities of an economy that allow for more efficient use of the factors of production. The concept is anchored in the growth accounting theory, which measures growth as the sum of growth in the factors of production (labour and capital) and of total factor productivity, which measures factors that cannot be explained by previous ones (Schwab, 2019). Competitiveness is essential to maintaining productivity growth and to raising living standards, especially in small open economies, which are based on international trade and are largely dependent on direct foreign investments (Appleyard et al., 2006 quoted by Habánik et al., 2016). A country's regional wealth depends on the competitiveness of firms and on the capabilities of its entrepreneurs and managers. Companies achieve competitive advantage through acts of innovation which is the trigger of growth (Cernescu et al., 2018). Moreover, the nation's political, institutional and economic framework plays an essential role in the development of a competitive industry (Cioban, 2014).

Innovation has been identified as one of the main challenges of the Romanian economy. According to the European Innovation Scoreboard, Bulgaria and Romania have been defined as "Modest Innovators" with performances well below the EU average (Hollanders et al., 2019). Since 2011, innovation performance increased the most in Lithuania, Greece, Latvia, Malta, the United Kingdom, Estonia and the Netherlands and decreased the most in Romania and Slovenia (by more than 10%).

According to the Global Competitiveness Report, 2019, Romania ranks 51<sup>st</sup>, following, however, a positive trend (17 positions higher) compared to the previous Report of 2017-2018 (Schwab 2017, 2019).

Of paramount importance is regional competitiveness, more rarely used. According to the Sixth Periodical Report on the Regions, competitiveness refers to the ability of regions to produce goods and services able to meet the requirements of the international markets. This should be done while maintaining high and sustainable levels of income and employment despite being exposed to external competition. Thus, ensuring both the quality and quantity of jobs will make a region competitive (European Commission, 2019). There are various theoretical literature schools of thought and their implications for regional competitiveness, such as classical, neoclassical, Keynesian economics, development economics, the new economic growth, the new trade theory, urban growth, 'New' Institutional economics, business strategy economics, evolutionary economics theories. Although all of the above theories are relevant to the understanding of competitiveness, they often lack a territorial dimension that is so crucial for understanding regional competitiveness. The obvious source for such theories is the field of economic geography (European Commission, 1999 quoted by European Commission, 2019).

According to Faludi (2004), the initial focus of the Territorial Cohesion idea was on regional economic development. The concept of Territorial Cohesion was first mentioned in Europe in 1995 in a report on 'Regions and Territories in Europe' published by the Association of European Regions. Territorial cohesion appeared in the European Commission's triennial reports; first in 2001 in the Second Report on Economic and Social Cohesion (Commission of the European Communities, 2001), which used the concept to describe the uneven development of the EU territory and, particularly, the concentration of population and economic activity in the core area of Europe (Commission of the European Communities, 1999); and later in 2004, when the concept was given prominence by being included in the Third Report on Economic and Social Cohesion (Commission of the European Communities,

2004; Davoudi, 2005). In the Treaty of Lisbon, among the crucial implications of including territorial cohesion for the future development policy in Europe, there is the fact that Member States and EU institutions currently share competence in contributing to territorial cohesion, as expressed in the Territorial Agenda of the European Union 2020 (HU Presidency, 2011, quoted by Cotella, 2012 and Mitrică et al., 2018).

The Territorial Cohesion concept, disseminated by the Green Paper, aims at the harmonious development of all regions, giving the population the opportunity to use the resources of the respective area. In this way, cohesion represents a tool of turning diversity into an asset liable to contribute to the sustainable development of the entire European Union (European Commission, 2008, quoted by Mitrică et al., 2018). In the Europe 2020 Strategy, one of the objectives was inclusive growth by promoting an economy with a high employment rate, able to ensure economic, social and territorial cohesion.

According to Medeiros (2011:11) territorial cohesion is “the process of promoting a more cohesive and balanced territory, by supporting the reduction of socio-economic territorial imbalances; promoting environmental sustainability; reinforcing and improving the territorial cooperation /governance processes; and reinforcing and establishing a more polycentric urban system”.

Davoudi (2005) highlights the importance of the territorial cohesion concept in bringing a new dimension to (or spatialising) the debate on the European social model: “within the context of the European social model, territorial cohesion not only brings its embedded political tensions to the fore, but it also gives them a spatial dimension” (Davoudi, 2005: 436; Medeiros, 2016: 9).

The Cohesion Policy is the main investment policy of the EU as it is a major driver of job creation, sustainable growth and innovation in Europe’s diverse regions. It supports the economic, social and territorial cohesion of our Union. Although Europe’s economy is bouncing back, disparities remain between and within the Member States (European Commission, 2018). The European Commission has proposed a revised framework for cohesion (and regional) policy for the next seven-year period, from 2021 until 2027, the proposal being the subject of intense debate (Darvas et al., 2019).

### 3 METHODOLOGY

The current study relies on the statistical data provided by the Population and Housing Censuses (2002 and 2011), as well as on the TEMPO-Online time series published by the National Institute of Statistics (National Institute of Statistics 2002, 2011, 2018, National Institute of Statistics 2002-2018).

The proposed methodology aims to establish a set of indicators that provide a broad and accurate picture of the territorial competitiveness and cohesion at three “points in time”: the latest two censuses, which also reflect the effects of the transition period (i.e., 2002), the accession to the European Union and the financial and economic crisis (i.e., 2011) and the most recent year with a detailed official statistical database (i.e., 2018). The statistical indicators were selected based on the scientific literature, the European and Romanian reports, and other official documents (Borozan, 2008; Filó, 2008; Prezioso, 2008; the Ministry of Regional Development and Public Administration, 2014; Dao et al., 2011; ESPON KITCASP, 2012; Annoni and Dijkstra, 2013; Ciucu, Drăgoescu, 2014; Institute for the Protection and Security of the Citizen, 2014; Winkelmann, 2014; Békés, 2015; Medeiros,

2016; Mitrică et al., 2017; Mitrică et al., 2020; Muller et al., 2017; UNESCO, 2017; Anghelache et al., 2018; Schwab, 2019).

The analysis of the disparities driven by competitiveness and cohesion in Romania follows several research stages: selecting relevant statistical indicators, normalising the absolute values of the indicators, grouping the elementary indicators (Mitrică et al., 2017, 2018). Because of that, the variables of the statistical indicators were calculated using statistic variables measured in different units, and data normalisation is necessary. As a normalisation method, this paper uses the min.-max. normalisation technique, applied in many scientific studies (e.g., Popovici et al., 2013; Ortega-Gaucin et al., 2018; Mitrică et al., 2020).

Based on the last research stage, two multiple indicator clusters have resulted: the Territorial Competitiveness Index (Tcomp) and the Territorial Cohesion Index (Tcoh) (Fig. 1), which were created by the authors based on the scientific papers and reports. The two indicators are computed as Hull Score, with a mean of 50 and a standard deviation of 14, which varies between 1 and 100 (Cohen, 2001). It is calculated as the sum of the direct or reverse relation of each statistical indicator or index in relation to the development process.

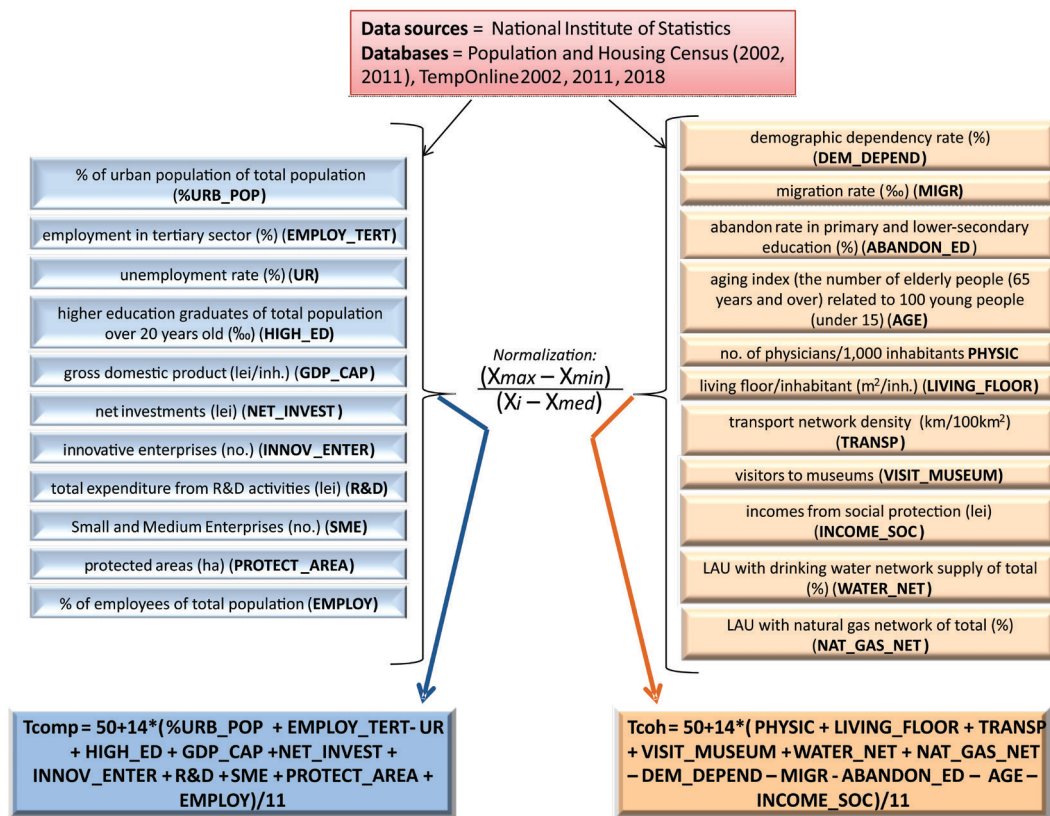


Figure 1: Data analysis flowchart (Source: created by the authors).

A large database was used to compute the two indicators; this, however, could be more confusing than clarifying (Sandhu-Rojon, 2015). As a result, the authors selected 22 statistical indicators, 11 for each

index in order to highlight the main components of competitiveness and cohesion, and further on, the Development Regions that are the most competitive and cohesive.

#### 4 STUDY AREA

The Development Regions - regional areas with specific development problems - were designed based on a study of regional disparities, which took into account the socio-economic dynamics over the 1994-1996 period. The analysis of the development disparities looked at indicators grouped into five categories - economy, infrastructure, household resources, socio-demography and urbanisation (Hansen et al., 1996). The main purpose was to delineate these regions as functional spaces of comparable size composed of units with different levels of economic and social development. In terms of area and demographic size, with the exception of the Bucharest-Ilfov Region, the Development Regions are slightly different (Table 1, Fig. 2).

Table 1: Socio-economic characteristics of the Development Regions, 2018

| Development Region | Counties   | Region centre | Population | Surface   | Share of urban population | GDP (lei/capita) |
|--------------------|--|---------------|------------|-----------|---------------------------|------------------|
| North-West         | Bihor, Cluj, Bistrița-Năsăud, Maramureș, Satu Mare, Sălaj        | Cluj-Napoca   | 2,835,510  | 3,416,046 | 54.1                      | 40,870.6         |
| Centre             | Alba, Brașov, Covasna, Harghita, Mureș, Sibiu                    | Alba-Iulia    | 2,633,402  | 3,409,972 | 59.7                      | 41,625.4         |
| North-East         | Bacău, Botoșani, Iași, Neamț, Suceava, Vaslui,                   | Piatra-Neamț  | 3,958,248  | 3,684,983 | 45.4                      | 27,498.4         |
| South-East         | Brăila, Buzău, Constanța, Galați, Tulcea, Vrancea                | Brăila        | 2,844,235  | 3,576,170 | 55.6                      | 36,105.1         |
| South-Muntenia     | Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova, Telorman | Călărași      | 3,219,020  | 3,445,299 | 42.8                      | 33,808.4         |
| Bucharest-Ilfov    | Ilfov, Bucharest Municipality                                    | Bucharest     | 2,536,859  | 182,115   | 90.9                      | 101,495.3        |
| South-West Oltenia | Dolj, Gorj, Olt, Mehedinți, Vâlcea                               | Craiova       | 2,179,006  | 2,921,169 | 49.8                      | 32,582.4         |
| West               | Arad, Caraș-Severin, Hunedoara, Timiș                            | Timișoara     | 2,007,273  | 3,203,317 | 63.1                      | 45,220.6         |

Source: data processed from <http://statistici.insse.ro/shop/?lang=ro>

In socio-economic terms, the differentiations are moderate, with the exception of the North-East Development Region, which has lower performances (Romanian Government, European Commission 1997; Popescu et al., 2016). The explanations of these disparities are complex: the Eastern and the Southern parts are characterised by accentuated rurality, post-1970 industrialisation, joined by the absorption effect of the capital in the case of the Southern part. On the other hand, the central and western parts of the country are favoured by mature industries, better-developed services, and traditional urbanisation (Antonescu, 2003; Benedek, 2004; Popescu, Săgeată, 2016).



Figure 2: The Development Regions in Romania.

## 5 RESULTS

### 5.1 Territorial Competitiveness and Cohesion, 2002

In 2002, the South-West Oltenia Development Region registered the lowest value in terms of competitiveness (Fig. 3) because of the lowest urbanisation degree values (46.0%) (Fig. 4), employment in the tertiary sector (32.0%), GDP per capita (5,415.3 lei/inh.), net investments (7,900 lei/inh.), the number of innovative enterprises from the total number of enterprises (9.2‰), the share of employees from the total population (17%), SMEs (11.5/1,000 inh.) and higher unemployment rate values (9.0%). At the other end of the spectrum, the Bucharest-Ilfov Development Region has the highest values of almost all indicators, with the exception of the surface of the protected areas. This situation is due to the extended built-up/urban areas (Grigorescu et al., 2012; Ianoş et al., 2016) and the smallest administrative surface.



Figure 3: Territorial Competitiveness Index, 2002.



Figure 4: Urbanisation rate, 2002.

The largest surface of protected areas is in the South-East Development Region (677,858.98 ha). The lowest values are registered by the unemployment rate (3.3%), which positively influences the Tcomp. Over the past decades, income inequality has increased in both advanced and emerging economies. An economy is competitive if its population can enjoy high and rising standards of living and high employment on a sustainable basis. More precisely, the level of economic activity should not cause an unsustainable external balance of the economy, nor should it compromise the welfare of future generations (European Commission, 2000).

The highest cohesion for the Centre Development Region in 2002 is mainly due to the low demographic dependency rate (43.2%), the positive migratory balance (0.8‰), the high shares of the LAUs with a drinking water supply network (57.7%) and with a natural gas network (55.9%) of the total number of households (Fig. 6). The second place, held by the South-East Development Region, is due to the lower values of income from social protection (423.9 lei/inh.) and the biggest share of the LAUs with a drinking water supply network in households (74.4%). The South-West Oltenia Development Region, which ranks last, has the lowest values of the share of the LAUs with drinking water supply network (38.0%) and a with natural gas network (9.5%) of the total number of households and some of the biggest in terms of demographic dependency rate (48.7%) and aging index (0.84%) (Fig. 5).

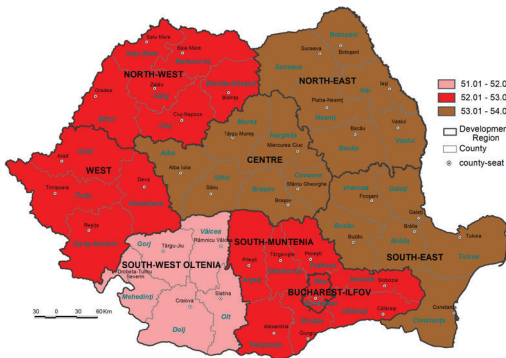


Figure 5: Territorial Cohesion Index, 2002.



Figure 6: LAUs connected to the natural gas network (% of total), 2002.

### 5.2. Territorial Competitiveness and Cohesion, 2011

The Bucharest-Ilfov Development Region registered an increase in competitiveness in 2011, compared to 2002, due to the highest values of the following statistical indicators: urbanisation degree (Fig. 7) (92.5%), the share of the population employed in the tertiary sector (70.2%), GDP (69,139 lei/capita), net investments (11,660 lei/inh.), expenses with research and development activities (645 lei/inh.) (Fig. 8), SMEs (44.1/1,000 inh.) and the share of employees of the total population (36.6%). It is important to mention that all these indicators had a positive trend over the 2002-2011 period.





Figure 7: Territorial Competitiveness Index, 2011.

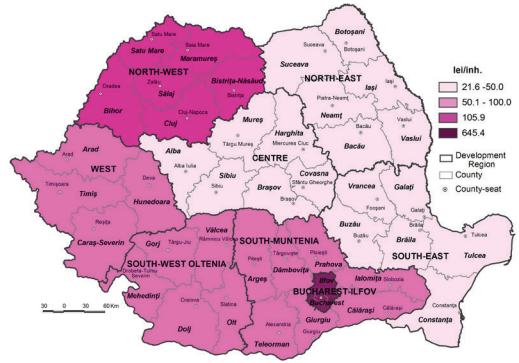


Figure 8: Total expenses with research and development activities, 2011.

New factors of regional disparities proved more active in the context of the transition: the regional GDP per capita, which assesses the economic performance, the volume of net investments as a result of distinct regional attractiveness, the level of individual income, which expresses the ability of regional economies to develop added high-value activities, unemployment rate as an economic-social indicator (Popescu et al., 2016, quoted by Mitrică et al., 2020). In Romania's case, which lacks restructuring strategies that employ comparative advantages and opportunities, we can refer to competitiveness, especially in terms of foreign investments that were accepted without adequate selection and to an atypical national innovation system, disorganised and forced to operate at faulty levels, bringing small contributions to the growth and development of society (Dima (Girneacă) and Nedelcu, 2017). This is more visible for Bucharest-Ilfov Development Region.

Even the South-West Development Region has a lower competitiveness rate, as this Region has the lowest/highest values with negative impact only for the population employed in the tertiary sector (34.0%), the unemployment rate (7.7%), and the GDP (22,481 lei/inh.). The values for the other indicators with the highest negative impact are registered by the South-Muntenia Development Region for urbanisation degree (43.0%) and higher education graduates (9.79‰), by the West Development Region for innovative enterprises (11.2/1000 enterprises), by the North-East Region for GDP (18,688.8 lei/capita), SMEs (12.9/1000 inh.), and formal employment (12.7%), and by the South-East Region for the total expenses with R&D activities (21.6 lei/inh.).

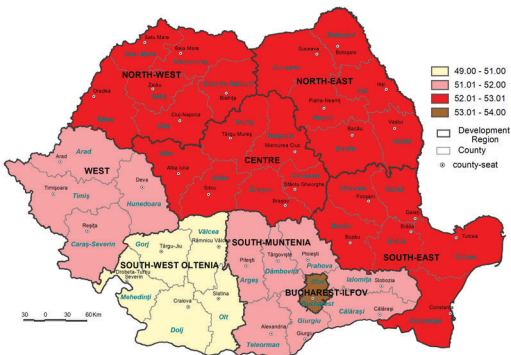


Figure 9: Territorial Cohesion Index, 2011.



Figure 10: Distribution of physicians, 2011.

One of the most disadvantaged regions is the North-East one (Fig. 9) due to the extreme values for the demographic dependency rate, living space, income from social protection and abandonment rate. This Development Region is one of the country's poorest, and an out-migration 'pool' in both 2002 and 2007 due to the large external migration movement of the workforce population to Italy or Spain. The analysis of the dynamics of temporary out-migration at the country level over the 2012-2017 period reveals an increase from 170,186 to 242,193 people, with the highest values registered by the North-Eastern Development Region (over 170,000 pers., making up 16.1%) (Mitrică et al., 2019).

The capital-city Region is significantly more developed than the other ones. Thus the factors that influenced the cohesion for the Bucharest-Ilfov Development Region (Fig. 9) are mostly high accessibility, migration rate, the number of physicians (Fig. 10) and living space. This Development Region also registered average values for the ageing index, LAUs with a drinking water supply network, visitors to museums, abandonment rate.

### 5.3 Territorial Competitiveness and Cohesion, 2018

For 2018, compared to the previous factors contributing to the Bucharest-Ilfov Development Region's competitiveness (77.04) (Fig. 11), they now play a different role, among them being the urbanisation degree, employment in the tertiary sector, unemployment, formal employment, expenses with R&D activities, investments, SMEs, the GDP (Fig. 12), which became more relevant. On the other hand, innovative enterprises and higher education graduates lost their significance. According to the Regional Innovation Scoreboard 2019, the Development Regions of Romania are modest innovators, with the exception of Bucharest-Ilfov, which is a moderate innovator. Investments in R&D are considered essential for the enhancement of the country's innovative capacity. Under the Europe 2020 Strategy, the national target for Romania is 2.0% of GDP invested in R&D (the European target is 3%). However, according to the latest data, Romania is still far from achieving this target (0.38% in 2014 vs 0.45% in 2010) (Hollanders et al., 2019).

The West Development Region held second place (59.93) (Fig. 11) due to the urbanisation degree, GDP, expenses with R&D activities, and formal employment indicators. The most positive dynamics was registered by the North-West Development Region (57.30), which ranked second in relation to the share of higher education graduates of the total population over 20 years of age, GDP/capita, innovative enterprises, SMEs attracting large and important firms that would offer well-paying jobs, as well as help local firms improve, are prime policy targets. There is a growing body of evidence suggesting that the already crowded and specialised regions may benefit the most. This is the example of cities such as Timișoara and Cluj-Napoca, growth poles with a population of over 300,000 inh. (each) in 2018.

One of the constant dynamics in terms of competitiveness is displayed by the South-East Development Region (57.53), which experienced an intensely well-balanced process of its competitiveness factors, despite its previous spatial structure hierarchy with Constanța County concentrating most of the economic-social growth. Within the Region there is a growth pole – Constanța, and two development poles - Galați and Brăila - two cities with a significant potential for development, which, together, have the potential to become the second urban agglomeration in the country after Bucharest. This Development Region holds first place in terms of innovative enterprises from the total number of enterprises and of protected areas surface.

The Centre Development Region takes the middle place in the competitiveness hierarchy (56.11), hosting a developed industry, but with significant differences between the highly industrialised counties of Sibiu, Braşov and Mureş on the one hand, and the lower developed Covasna and Harghita counties, on the other hand. Higher values are registered by employment in tertiary activities, urbanisation degree, protected areas surface, formal employment, and GDP.



Figure 11: Territorial Competitiveness Index, 2018.

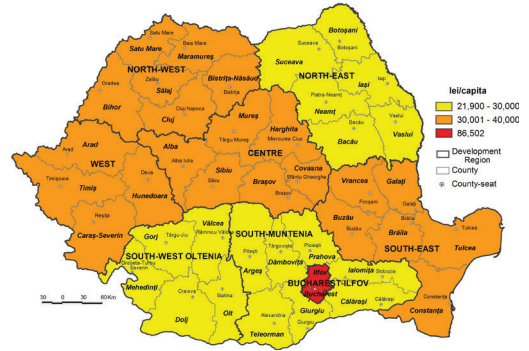


Figure 12: GDP, 2018.

Ranking 6<sup>th</sup> in the hierarchy is the North-East Development Region (53.68), due to the City of Iași, the most dynamic industrial centre where the creative industries are successfully developed (Bălțeanu et al., 2016). The main indicators for this advancement are the positive employment dynamics in the tertiary sector, the share of higher education graduates, the number of innovative enterprises, and the decreasing unemployment rate. This Development Region, one of the poorest regions in the EU, registered the lowest GDP/capita values for all the analysed years, 2002, 2011 and 2018, a constant nearly four times lower than that of the Bucharest-Ilfov Development Region.

The South-Muntenia Development Region ranks second-to-last in the hierarchy (53.14), displaying severe disparities between the northern and southern counties. This value is due to the lowest urbanisation degree value, to the employment in the tertiary sector, and to the number of higher education graduates. Despite these indicators, which negatively influence competitiveness, this Development Region ranks among the first in terms of net investments and expenses with R&D activities due to its position around the capital of Bucharest.

The South-West Oltenia Development Region, ranking last in the hierarchy (47.50) during all three years taken into account in the analysis, registered the highest unemployment values and the lowest in terms of innovative enterprises. The Region has a lower industrialisation level than the national average and a modest contribution to the creation of the national GDP in spite of major investments (Bălțeanu et al., 2016), of a growth pole (Craiova) and a development pole (Râmnicu Vâlcea) with the economic potential, albeit insufficiently used, for development, research-innovation, business infrastructure, entrepreneurial culture.

The highest cohesion of the Bucharest-Ilfov Development Region is accounted for by its ability to attract population through a positive migratory balance (5.9‰), the number of hospital beds (8.6/1,000 inh.), the natural gas supply (92.7% of total LAUs connected to the network), and the high level of accessibility

(56.7 km/km<sup>2</sup>) (Fig. 13). The Region is crossed by the densest network of public roads in the country, mainly due to the high degree of urbanisation and the presence of the capital city. From Bucharest, a public road network consisting of 3 highways, 8 national roads and 1 county road is radially directed towards the other regions of Romania. The area is crossed by the basic TEN-T road network (A1, A2, DN1, DN5 and DN6, DN Bucharest Belt) and the global TEN-T (DN2) (Bucharest-Ilfov Regional Development Agency, 2015). The “Henri Coandă” International Airport in Otopeni is the only one in Romania that belongs to the TEN-T aerial network (Bălteanu et al., 2016).

The North-East Development Region is characterised by indicators that positively influence the general cohesion value: a low abandonment rate for primary and lower-secondary education (1.3%), the lowest ageing index (0.87) (Fig. 14), as well as the indicators with a negative influence: the lowest living space per inhabitant (16.7 m<sup>2</sup>/inh.), the lowest incomes from social protection (632.86 lei/inh.) and a lower percentage of LAUs connected to the public drinking water supply network (68.7%). The abandonment rate has low levels for primary, secondary and high school education, with values lower than the national level, higher in vocational and post-secondary education. At the other end of the spectrum, the low level of connection to the public drinking water supply network is due to the fact that two counties (Vaslui and Botoşani) have the fewest LAUs with a drinking water supply, thus ranking last and second-to-last at national level (North-East Regional Development Agency, 2014).



Figure 13: Territorial Cohesion Index, 2018.



Figure 14: Aging Index, 2018.

From a transport infrastructure perspective, the South-East Development Region has a strategic position for international freight and passenger flows, with the potential to connect regional growth poles with other regional markets and the international market. Most of the waterway and shipping network in Romania is located in this Region. Strategically placed, Constanța harbour is Romania’s main maritime port and supplies goods to Central and Eastern Europe. It has recently become the largest container port on the Black Sea (South-East Regional Development Agency, 2014; Bălteanu et al., 2016). The Development Region ranks last in terms of hospital beds, living space, income from social protection, but first when considering the LAUs connected to the public drinking water supply network (92.3%).

The Centre Development Region is the one with the highest abandonment rate and the lowest accessibility. Thus, Alba County is the only county in the Centre Region in the first 10 counties in Romania with the highest densities of public roads and, compared to the average density of public roads at the

European Union level, it is four times smaller (Centre Regional Development Agency, 2014). The highest abandonment rate in primary and lower-secondary education (2.6% in 2018 compared to the national average of 1.6%) is due to Braşov County, where the rate in the rural area is twice that of the urban one. The Region is very well connected to the natural gas supply network (59.2% of LAUs connected) because of its position in the middle of an area full of resources (i.e., natural gas).

The West Development Region is characterised by the highest living space values (21.0 m<sup>2</sup>/inh.) and the lowest abandonment rate in primary and lower-secondary education (1.0%) which are a positive influence on the territorial cohesion index. They are joined by one of the lower values of demographic dependency rate (41.7, registering the smallest share of the elderly population) and high migration balance (1.8‰). Some factors contribute to the lowest abandonment rate value, such as the presence of an educational role model in the family; the low out-migration levels, thus a lower level of children left behind; a high level of income. The high migration balance is supported by the cities of Timişoara and Arad, which are the main attraction poles for the population.

Generally, the statistics highlight the role of Cluj-Napoca as a regional centre of excellence in the medical field. The municipality of Cluj-Napoca benefits from traditionally medical units, with a large number of institutes of excellence and with a large number of general and specialised hospitals, as well as institutions of higher education in this field, which have garnered a great reputation at both national and international level. Hence, the North-West Development Region registers one of the highest numbers of hospital beds per inhabitant (6.1). The Development Region also stands out through the low ageing index (1.01), proving that the share of the young population (0 – 14 year-group) is equal to that of the old population (65 age-group and over) (Fig. 14).

With a serious discrepancy between the industrialised counties in the northern part and the agricultural counties in the southern part, polarised socially and economically by Bucharest City, the South-Muntenia Development Region is characterised by the highest values of demographic dependency rate (45.8) and of hospital beds (4.4/1,000 inh.), while also having a severely negative migration balance (-2.6‰) and demographic aging (1.23). This Development Region is crossed by three pan-European transport corridors (IV, VII and IX), integrated in a radial network of transport and communications. The road network facilitates access to and from Bucharest, Constanţa harbour, with the Giurgiu border crossing point and, last but not least, with the centre of the country. This is how this development Region has achieved the second accessibility rate.

In recent years, the counties in the southern part of Romania have become an emigration pool, the South-West Oltenia Development Region registering the lowest migratory balance value (-3.1‰). This Development Region is the most disadvantaged in terms of LAUs connected to the public drinking water supply network (68.1%) or to the natural gas network (16.3%). As far as the public drinking-water supply network is concerned, there are communes in some counties where the length is rather small, and the percentage of settlements not connected to this supply system is fairly high. It is the case of Dolj, and Olt Counties, which are generally less-developed economically (Mitrică et al., 2016). This Region is characterised by a medium level of accessibility due to its geographical position and is assigned by the European Commission to the Rhine-Danube and Orient/East-Med Corridor infrastructure corridors. Additionally, building and bringing into service the Calafat-Vidin Bridge facilitates the transit and commercial exchanges between Romania and Bulgaria (South-West Oltenia Regional Development Agency, 2014).

## 6 DISCUSSIONS

During the 2000s, the competitiveness and cohesion primarily reveal the effects of the transition period, and secondly, those of the economic crisis, both having enhanced the inter- and intraregional disparities; this happens because regional polarisation is still very strong despite the policies tending to re-balance development opportunities. In 2002, the most competitive Development Region was Bucharest-Ilfov (71.91), and the least competitive one was the South-West Development Region (49.83) (Fig. 15). Higher Competitiveness Index values were registered by the West (58.37) and South-East (57.26) Development Regions, while the North-East (53.78) and South-Muntenia (53.96) Regions registered lower values. At the middle of the hierarchy stood the Centre (56.45) and North-West (55.91) Development Regions.

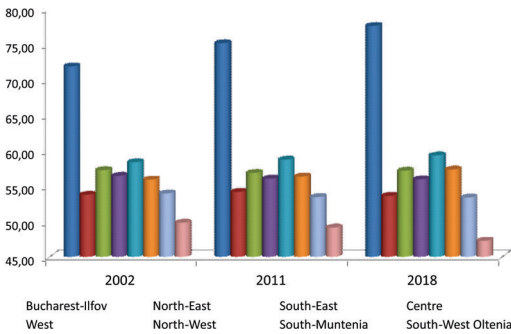


Figure 15: Competitiveness Index by Development Region, 2002-2018.

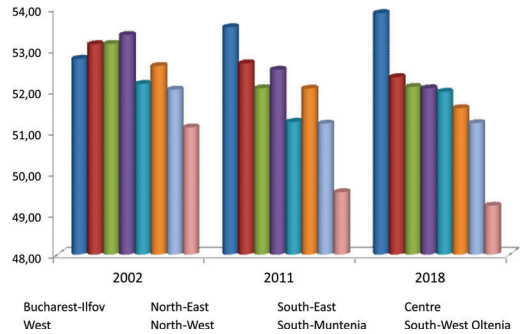


Figure 16: Cohesion Index by Development Region, 2002-2018.

The hierarchy of the Cohesion Index shows that the most cohesive Development Regions are the Centre (53.34), South-East (53.13) and North-East (53.12) ones, and the less cohesive ones are the South-West Oltenia (51.09), South-Muntenia (52.01) and West (52.15) Regions (Fig. 16). In the middle of the hierarchy, we can find the Bucharest-Ilfov and North-West Development Regions.

In 2011, the same two Development Regions, Bucharest-Ilfov (75.19) and South-West (49.14) ranked first and last, respectively, in the competitiveness hierarchy. The West (58.73) and South-East (57.01) Regions kept their second and third places, while the South-Muntenia (53.44) and North-East (54.19) Development Regions dropped to the sixth and seventh places. As for the previous year, in the middle of the hierarchy, we have the North-West (56.35) and Centre (56.05) Development Regions again. A low positive dynamic of the Competitiveness Index over the 2002-2011 period was registered by the North-West and North-East Development Regions, and a low dynamic was recorded in the Centre and South-Muntenia Development Regions.

The cohesion dynamics shows a significant uplift of the Bucharest-Ilfov Development Region (53.53) ranking first, after occupying the fourth position on the previous year analysed. South-West Oltenia Development Region still ranks last, just as it did in the previous analysed year (49.52) (Fig. 9). A positive dynamic in the hierarchy is registered by the North-East Development Region, while the Centre (52.50) and South-East (52.04) Regions are characterised by the two places lost in the hierarchy.

Over the 2011-2018 period, the first two places in the competitiveness hierarchy are kept by the same Development Regions: the Bucharest-Ilfov (77.62), and the West (59.34) Regions, respectively. A jump

into the second class was registered by the North-West (57.34) and South-East (57.17) Development Regions. The last places are held by the same South-West Oltenia (47.27) Region, followed by the South-Muntenia (53.39) and North-East Development Regions (53.62). The Centre Development Region ranks in the middle of the hierarchy with a value of 55.96 (Fig. 11).

With a positive dynamic over the 2011-2018 period, Bucharest-Ilfov is the most cohesive Development Region in 2018. There are three Regions with very close cohesion values: North-East (52.32), South-East (52.08), and Centre (52.05) as a result of the regional convergence process that took place after Romania's joining the EU. The second part of the hierarchy is occupied by the same Development Regions - West, North-West and South-Muntenia - with values between 51.96 and 51.20. Permanently ranking last, the South-West Oltenia Development Region shows a constant incapacity/inability to support territorial cohesion (Fig. 16).

If we take a look at the whole period analysed, the Cohesion hierarchy is more dynamic, the Bucharest-Ilfov Development Region went up three places, while the Centre Development Region went down three places. A positive dynamic was registered by the West and North-East Development Regions, a negative one by the South-East and North-West Development Regions and the South-Muntenia and South-West Oltenia Development Region stagnated. For the Competitiveness hierarchy, three Developments registered a stagnation (Bucharest-Ilfov, West and South-West Oltenia), another three recorded a declining trend (South-East, Centre and South-Muntenia), and two had an ascending trajectory (North-West and North-East).

## 7 CONCLUSIONS

Despite a clearly noticeable convergence trend between the older and the newer EU member states, as well as a significant increase in the development level of less developed countries and regions, several studies confirm that, within the beneficiary member states, increasing regional disparities have been noted (Botezatu, 2007). As the result of the process of transformation and economic growth (Bronisz et al., 2008), Romania is a country with growing regional disparities, and the gaps between the most and least rapidly developing regions will be widening.

Upon analysing the course of all eight Development Regions, it has been revealed that the best consolidated in terms of competitiveness performance are the central and western parts of the country, with the eastern and the southern ones finding themselves in a vulnerable situation. The exception is Bucharest-Ilfov, the most competitive Development Region, because of the advantage conferred by the Capital City of Bucharest, the main economic and social polarising centre in Romania. Relative stability in the position of Development Regions is noticeable over the 2002-2018 period, proving that the more developed regions had succeeded in making the best of their advantages and continuing to rank first in the hierarchy (Bucharest-Ilfov and West Development Regions).

On the other hand, less developed regions failed to overcome their initial structural disadvantages, being constantly situated at the base of the hierarchy (South-West, South-Muntenia and North-East Development Regions). These Regions with the lowest competitiveness values are rather marginal, located either limitrophe to the Danube River (South-West Oltenia and South-Muntenia) or close to the border with Ukraine or the Republic of Moldova (in the North-East Development Region), areas marked by local agriculture and difficult industrial restructuring.

The competitiveness trends are mainly influenced by the urban size, increases registered primarily by the large cities - Bucharest, Timișoara, Constanța, Iași - as the most visible examples of polarisation. Other important factors are the distribution of net investments quite uneven within the regions, the North-West and Centre Development Regions in the West and central part of the country proving to be the most attractive (given their accessibility to Western markets favourable to the gradual development of neighbouring areas), together with the Bucharest-Ilfov and South-East Development Regions for the south-eastern part (positively influenced by the presence of the international harbour - Constanța city). Moreover, the innovative enterprises and expenses with the research and development activities are crucial for better competitiveness. The same Development Regions benefit/do not benefit from these factors, as a low level of ability of the economy to attract innovations is noted.

The most affected regions in terms of territorial cohesion index are the South-West Oltenia and South-Muntenia Development Regions, while the Bucharest-Ilfov Development Region seems to perform the best.

The solution for achieving cohesion within the less developed areas, which are left behind, is to connect the people living there with the opportunities offered by the big cities, greater empowerment of local, urban and territorial authorities in the management of funds, a more social and inclusive Europe (European Commission, 2020), investments in different areas such as Europe's ageing population, healthcare infrastructure and sustainable systems (European Commission, European Structural and Investment Funds, 2020). To achieve social cohesion, fiscal policy can play an important role when used not only as a means of macroeconomic management but also as a tool for the allocation and redistribution of resources (OECD, 2009, Saint-Supéry Ceano-Vivas et al., 2014) and should be a key objective of any governmental policy (Saint-Supéry Ceano-Vivas et al., 2014). On the long term, the convergence of living standards will be achieved, and the benefits conferred by the competitive areas will be distributed to the poorer communities nearby (Ministry of Regional Development and Public Administration, 2014). The Cohesion Policy for the 2021-2027 period set up a single rulebook of EU funds jointly delivered to member states and regions by a common provisions regulation established to govern 8 EU funds, making up a third of the EU budget (European Commission, 2020). To maintain their competitiveness, more developed regions must respond proactively to challenges and continuously adapt to changes. In this context, innovation is closely linked to economic growth and should be viewed as a means to catch up with the more developed regions of older member states (Botezatu, 2007). In order to achieve sound efficiency in reducing regional disparities, the Cohesion Policy should allocate increased funds to countries and less developed regions (Chindriș-Vășioiu, Ungureanu, 2011). As a result, the current study provides quantitative and qualitative analysis on the regional-level territorial disparities in Romania that could be easily regarded as guidelines in the decision-making process while trying to achieve the competitiveness and cohesion goals.

### **Acknowledgments.**

1. The study was carried out within the framework of a project entitled "Regional geographical studies in view of sustainable development and trans-sectoral cooperation", as part of the Research Plan of the Institute of Geography.
2. This paper has been financially supported within the project entitled: "Support Centre for IEM research - innovation projects competitive in Horizon 2020", ID 107540. This project is co-financed by the European Regional Development Fund through the Competitiveness Operational Programme 2014–2020.



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