

REGIONAL DEVELOPMENT FROM THE PERSPECTIVE OF POLYCENTRICISM

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ABSTRACT - The study proposes an integrated approach of polycentricism based on assessing the issues of the Romanian urban and rural spaces. The first step was the definition of a few evaluation indices of the polycentricism level within the rural and urban areas and the establishment of a general indicator aggregating the first ones. The analysis made for each development region is focused, on the one hand, on the specific component elements for defining the polycentricism level and, on the other hand, on the possibility of covering each used indicator with official statistical data. These indicators may be used in the development of the new Regional Development Plan for the upcoming period of 2014-2020, based on the Improvement Territorial Regional Plans and Metropolitan and Regional Development Strategies.

Keywords: regional development, polycentricism, regional disparities, general regional polycentric index

INTRODUCTION

The regional development policy was requested in Romania, on the one hand, by the necessity of correcting the existent regional disparities and, on the other hand, of taking over and applying the concerning EU law as to accede to the Community financing from EU Structural Funds. Thus, the regional development policy objectives intend to reduce the regional gaps by sustaining the less developed areas and preventing the emergence of new regional gaps; the integration of the sector policies at regional level to support the sustainable economic and social development; to improve the interregional cooperation at national and international level, especially the cross-border cooperation.

We are very aware that the success of the application of regional development and also of the polycentric development patterns is linked by a range of inter-linked legal and institutional components, to different relationships existent or about to be established among different fields of activity or sectors, central or local authorities and collectivities. In the same time, the complex process of regional development requests a rigorous assessment and survey, involving some instruments – indicators having a strong credibility, allowing inter-regional comparisons and actually reflecting specific phenomena and processes.

Taking into consideration these issues, we set as goal of this work to apply the multi-criteria analysis on the indicator systems agreed for the significant parameter ascertaining, considered to be able to influence the decision making process on the well-balanced polycentric urban system development².

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² This study presents the integral part of an analysis on the regional polycentric index establishment for rural and urban spaces; based on these two indices for the first time in Romania it was calculated the general regional polycentric index a synthetic expression of the rural and urban areas development level. This study is focused on presenting the results on the General Regional Polycentric Index, based on the previous calculations and results, too.

THE EUROPEAN POLYCENTRIC DEVELOPMENT CONCEPT

The European Commission Document entitled "*The Spatial Development Perspective of Europe (ESDP)*" defines a vision on the European space having as goal a specific sustainable spatial development focused on a polycentric urban system linked by transnational infrastructure networks and focused on the economic growth poles development. The already mentioned paper (ESDP) expresses the European Commission *option for a spatial policy orientated to the market and competition* (Jensen, O.B., 1997), *issuing the idea that there are still some major economic, social and environmental tensions and raising several questions on the possible losers or winners as well.*

The essential idea and guiding line of ESDP are expressed using a language of European spatial relationships, focused on the triangle of concepts such as "*social and economic cohesion*", "*sustainable development*" and "*competition*". These goals have to be achieved according to ESDP *by developing a well-balanced polycentric urban system and a new agreement between the rural and urban areas, assuring a well-balanced access to infrastructure and knowledge, sustainable development, cautious management and nature and cultural heritage conservation*³.

Each of this concepts (social and economic cohesion; sustainable development, competition) has a specific meaning, also leaving room for a wide interpretation, as they have been created during the "gestation process" of a development policy. For now, the interest for *the development and implementation of the spatial system of polycentric development* is fed by a range of studies according to which the polycentric urban systems are supporting the economic growth, are sustainable concerning the environment protection and support the territorial cohesion more efficiently than the mono-centre urban systems.

The document entitled "*The European Spatial Development Perspective- ESDP*" is focused on a polycentric urban system linked by different types of networks to the transnational infrastructure and which, in its turn, is focused on the economic growth areas. This approach allows the emergence of the idea that in the future, in the European space, a range of major economic, social and environmental tensions will be still leading inevitably to the existence of some winners and/ or losers. According to the European Spatial Development Perspective – ESDP, the above mentioned goals have to be accomplished *by developing a well-balanced polycentric urban system and by concluding of a new agreement between rural and urban areas, assuring a well balanced access to infrastructure and knowledge, sustainable development, cautious management and conservation of the natural and cultural heritage* (CSD, 1994).

The strategies developed according to ESDP are meant to direct the decision makers' actions towards the establishment of a new polycentric European space, allowing the development of new urban networks on the one hand, and the building of common development scenarios for the cross-border regions, on the other hand. In the same time, we have not to forget that a deeper cooperation among different city networks involves not only socioeconomic and functional benefits, but also the energizing and the drawing of the rural areas into the general social-economic circuit. According to the spatial system of European polycentric development, the cities have to act as real "*services, including knowledge bridges*" for people and different activity fields. The urban town network is considered the territory's "*spinal cord*", *while polycentricism meets the ability of this network to efficiently and harmoniously serve all stakeholders.*

The polycentric urban system is conceived to answer to the social, environmental, and traffic issues involved by the economic growth of cities, by inducing a horizontal integration and the spreading of some qualifications toward a number of other closed urban centres. *The strategies proposed by ESDP are directing the decision makers towards the establishment of a new European polycentric space leading to the development of new urban networks and involve the establishment of new development scenarios for the cross-border regions.* We cannot ignore the fact that a *stronger cooperation between the cross-border cities* involves not only economic and functional benefits but also puts in fact the vision of a Europe where the borderlines are erased by a new inter-city urban cooperation policy.

³ *Principles for a European Spatial Development Policy*, CSD, 4th Oct. 1994, Leipzig.

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According to Ole B. Jensen and Tim Richardson (2004), ESDP is a “programming document – tool of development”. Simultaneously, this is the reflection of a legitimate and worthwhile European project. In spite of these, ESDP requests that the used notions should lie on rigorous bases, while the effects – achieved by the proposed solutions- have to be measurable (Ole B. Jensen and others, 2004).

THE RELATIONSHIP BETWEEN THE THEORY OF GROWTH POLES AND REGIONAL DEVELOPMENT

The growth poles theory stirred many debates and discussions and was the topic of several more detailed researches just after its publication. Concerning the application of this theory to the regional development, some specific remarks have to be made (Vanhove, N., 1987):

- (i) In the peripheral regions, regional actions should be concentrated into a few centres, depending on the size of the growth pole;
- (ii) *The economic-social environment has an important role for the growth pole development, and cannot be based only on the relationships between companies;*
- (iii) *Although the links between the economic sectors are important, they do not represent the only starting point for the growth poles development, while for example, a port, a large industrial project, a university, etc. have developed - according to the type of activity - the ability to involve a polarization process;*
- (iv) *When establishing the growth poles, the advantages of a region’s development have to be also taken into consideration. If, for example, an insulated and problematic area does not have a centre with 50,000 inhabitants, a minimum of facilities, local initiatives or a good economic structure, or if its development supposes high costs, then the solutions for development/ economic growth have to be found outside the reference region (Klassen, L.H.; 1987).*

The growth poles theory is not only a strategic concept for the less developed areas development, but may also be applied for restraining the growth of very large centres. For example, in large centres, unwanted effects may show up - such as migration, unemployment, economic depression within the closed by areas of a specific centre. In this spirit, the policy of “*metropolis of balance*” from France, as well as the role of growth centres in regions under pressure – as interception and re-location centres (Allen K., 1987) – may be taken into consideration as possible solutions which have already shown a positive applicability.

REGIONAL ANALYSIS FOR THE CASE OF ROMANIA

The opportunities generated by the rise of the Iron Curtain, the difficulties accompanying the Romanian transition process and the demographic policy of the mid ‘60s, as well as the ones of the ‘70s-‘80s supporting the emigration of some national minorities, resulted - as a cumulated effect – in a population decrease (Iara, A., 2008). At the beginning of the ‘90s, the country was confronted by a high level of emigration, especially of the young, active population and of the national minorities. Simultaneously, a decrease of the fertility rate was registered which altogether have led to the population decrease.

Romania’s years of transition were marked by the pre-accession process to the European Union, which resulted in a severe decrease of the employment rate. The industrial sector was the most affected by the restructuring – losing 40 percent of the jobs. In spite of the fact that agriculture was the main employer starting from 1993, this segment was able to involve only a minor part of the active population, released by the industrial restructuring. Also, while unemployment reached relatively average levels in Romania compared with the level in other countries from the Eastern and Central Eastern Europe, in transition at that time, though the level of unemployment does not completely reflect the phenomenon of decreasing the available number of jobs, simultaneously, the global Romanian economic activity knew a similar decrease.

The decrease of employment rate was not equally spread out in 1990 in the different regions and industries. For example, in branches of production, the production of devices and equipments suffered a strong decline while the employment rate in the textile industry registered an increase.

The analysis of the regional policies development in the period of 1992-2001, issued by Iara, A. (2008) shows that:

- (i) at the beginning of the '90 the relative qualification levels in the regional production where low compared to the average;
- (ii) the average modification of the specialization in the regional production in 2000 compared to the beginning of the '90 (1992) was a mild one and did not follow an established direction;
- (iii) in Romania, during the studied period, a trend of equalization of the regional specialization levels was registered;
- (iv) it was not possible to identify a systemic relationship between the regional specialization, in terms of level or area of specialization, and the level of regional economic growth; this phenomenon may suggest that the level of restructuring of the Romanian industry was not high enough to lead to a significant alteration of the countries' regional economic structure (until 2001).

On the same topic of Romanian regional development, another study, carried by Antonescu Daniela (2003), can be mentioned. This work is focused on the main disparity types of the Romanian environment, disparities between and within regions.

The analysis of the *disparities between regions* drawn up by Antonescu (2003) has at its basis the values of the Gini Coefficient calculated based on the existent indices at regional level and leads to the conclusion that the disparity level among regions is low (as in Iara, A., 2008); the majority of the indices are lower than 0.2; the concentration identified among the Romanian development regions is relatively even, with no high concentrations of population, infrastructure, etc.

In spite of all these, the author mentions that "...we may consider some existent concentrations which do not generate disparities among the regions, especially concerning the indices featuring the economic potential of the region...". In this context we identified:

- values above 0.2 of the Gini Coefficient for indices such as rural population; population employed in agriculture and forestry; the turnover of the companies in industry, constructions, trade and services; the network of natural gases and thermal energy distribution;
- values above 0.5 for the gross investments of active companies and DSI; these values show a high concentration degree in the Bucharest-Ilfov Development Region.

The disparities analysis within regions, at county level, respectively, developed in the paper entitled "The Regional Development in Romania. Concept, Mechanisms, Institutions" by Daniela Antonescu, presents a different situation from the one existing at regional level⁴, the author identifying three groups of indicators:

- (i) *group of indicators with no significant disparities among them* (the Gini Coefficient is below 0.2 especially when the values of Bucharest were not taken into consideration); this category includes the majority of indicators from different fields of activity;
- (ii) *the group of indicators with Gini Coefficient values between 0.2 and 0.5*; this category includes the following indices: towns where natural gases are supplied; number of doctors; number of telephone subscribers; number of Radio-TV subscribers; rural population, etc.
- (iii) *the group of indicators with Gini Coefficient values above 0.5*; in this category we find DSI, gross investments of the active local units.

⁴ The method used for calculating the disparities between regions has been modified – two calculation alternatives were used: with and without the City of Bucharest.

METHODOLOGICAL AND THEORETICAL CONCEPTS REGARDING POLYCENTRICISM IDENTIFIED WITHIN THE URBAN STRUCTURES OF ROMANIA

At the moment, in the process of recovering disparities between the Romanian regions has as engine, a low number of growth poles. These poles, in their turn, do inevitably induce an increase of the regional disparities. As the decentralized institutions of the central public administration, as well as ministries and national agencies are located in larger cities, increases the role and importance of these cities; however, they do not represent a solution to the problem of regional and local disparities, a phenomenon with significant socio-economic implications.

Regions do not have an administrative character in Romania, having instead a planning role. The regional development applies the principles of European regional development. The principles of regional development implementation are materialized by the regional development policy, taking into consideration the complexity and difficulties faced generally by the Romanian economy and specifically by each administrative territorial unit. This is the justification of the wide range of unsolved problems described by the Romanian regional development policy, the most important of them being:

- The reduction of regional disparities by a well-balanced development, the recovery of the less advantaged areas development – as result of the historical, geographical, economic, social, political conditions – and the prevention of new gasp emergences;
- Improving competitiveness and achieving economic growth, the promotion of harmonious spatial development and town-networks, increasing financial, institutional, and decisional capacity of regions for sustaining their own process of development, sustainable development, higher chances for accessing information, technological research and development, education and continuous training;
- Correlating policies and governmental activities at regional level, stimulating local initiatives that aim at the capitalization of resources;
- Stimulating interregional, domestic and international, cross-border co-operation including Euro-regions, as well as regions attending European institutional structures, which promote the economic and institutional development with the aim to participate in common projects according to the European and international agreements in which Romania takes part of;
- Public investments are more limited, even if we take into consideration the benefits brought by the structural and cohesion funds; supporting local public administration, drawing resources for development from the Structural Funds.

These realities draw a great importance to the decision of how the national and Community Funds are spatially allocated when preparing and implementing the development strategies on long term. The studies done by Davies and Hallet (2002) on the development patterns both at regional and national level for the Member States included in the so called “hard nucleus” of the Community, meaning EU-15, concluded that they are relevant for the New Member States, too.

In October 2005, in Romania, “*The Strategic Concept of Territorial Development of Romania*” was approved by the Government, a document that represents a milestone for the Romanian regional development policies. Simultaneously, however, *the strategic planning of the “naturally” emerged growth poles supporting process*, as well as the process of stimulating new growth poles in other regions became one of the key issues of territorial development. It became more and more obvious that *polycentric development may represent a systemic way for development approach*. This kind of approach solid grounded allows a better-balanced development of the territory and avoids imbalances within and around large urban agglomerations.

NEW CONCEPTS DESCRIBING SPATIAL SCALE OF DEVELOPMENT FOR THE NEW EU MEMBER STATES OF THE EUROPEAN UNION

The modern way of business organization (Porter, 1998) requests a *wider geographic configuration of activities that generate added value in order to enable the use of geographically spread opportunities of economic growth*.

This process may involve, for example, the relocation of production systems by contracting out the data collecting units, financial service centres, production units and/or research and development centres, etc. towards peripheral areas. The increased flexibility of the production systems allows the emergence of new growth poles in previously insulated or less developed areas. This fact requests a re-definition of development policies, so that some of the expenses allotted for the infrastructure linking the wealthy agglomeration to the poorer ones are replaced through investments programs on long and medium term on expanding the connectivity and spatial functionality carried on within and among the purlieus regions.

The territorial categories proposed to explicitly structure the European spatial development policies, according to the European document “The Spatial Development Perspective of Europe” (PDSE/ASDP) *adopted also by our country* – are structured based on the criteria of *the urban or rural character weight and accessibility* as follows:

- (i) metropolitan areas/ regions – developed in relationship with the European metropolitan areas;
- (ii) polycentric urban areas – developed in relationship with the cross-national/ national or regional/ local functional urban areas
- (iii) urbanized rural areas;
- (iv) rural areas;
- (v) peripheral areas.

The Romanian current terminology also includes several new concepts describing the geographical/ spatial scale of development, such as the following:

- (i) *The Economic Growth Metropolitan Area - MEGA*;
- (ii) *The Strategic Urban Potential Horizon – OPUS*;
- (iii) *The Polycentric Integration Area – PIA*;
- (iv) *The Urban Functional Area – FUA*.

The Member States’ tradition and development level and also their spatial dimensions are justifying their polycentric development structure. It has to be mentioned that the structure of their polycentric development is in a continuous dynamism reflecting - in a way - each state’s ability to transfer the effects of its economic growth. Taking into consideration the urban polycentric development structure in the New Member States, in 2005, Romania presented the following features: 0.91% of total number of entities consisting of the geographic/spatial scale of the Romanian urban development is represented by structures with MEGA type (one single urban structure); 8.26% are Areas of Strategic Urban Potential Horizon type – OPUS (9 areas); 44.95% are Polycentric Integration Areas – PIA (49 areas); 45.88% are Functional Urban Areas – FUA (50 areas) (Figure 1).

Compared with the general state of the New Member States, in Romania, the urban polycentric development structure has the following features:

- The urban structures MEGA type represent 6.7% of the total number of these structures registered in the New EU Member States;
- The areas of type Strategic Urban Potential Horizon - OPUS – represent 18%;
- The Polycentric Integrated Areas – PIA - represent 18.8%;
- The Functional Urban Areas – FUA – represent 17.0%.

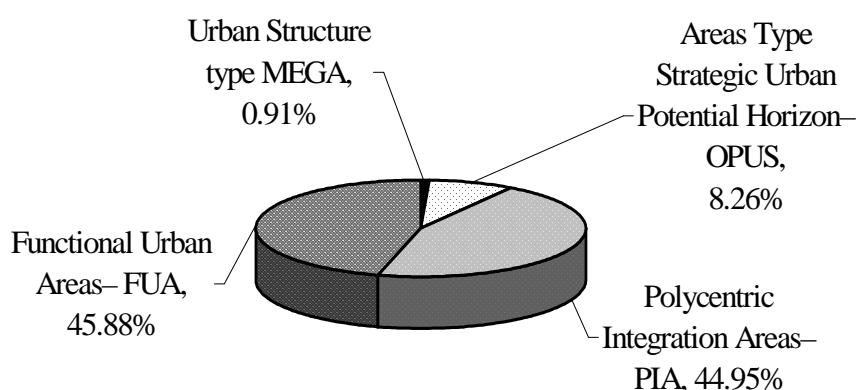


Figure 1. *Polycentric Development Structure in Romania, in 2005*

(Source: “Enlargement of the European Union and the wider European Perspective as regards its Polycentric Spatial Structure Final Report”, ESPON project 1.1.3, December 2005, updated in 2006)

NEW CONCEPTS DESCRIBING THE SPATIAL SCALE OF DEVELOPMENT OF ROMANIA

In Romania, the main objective of long term spatial development strategies is to strengthen the polycentric development and innovation by developing links between the metropolitan areas and the cities. The document entitled *The Strategic Concept of the Territorial Development of Romania 2007 – 2030 - CSDTR* (INCD – URBAN PROIECT, 2008) sums up nine guiding lines to the general strategic objective of the polycentric development. These are the following:

- (i) The capitalization of the periphery’s ability by assuming the identity of connector and relay at continental and inter-continental level;
- (ii) The connection of the territorial development poles and corridors with the European network;
- (iii) Well-balanced structuring and development of the urban network;
- (iv) Manifestation of the urban – rural solidarity;
- (v) Proper development of different territorial categories;
- (vi) Rural development;
- (vii) Strengthening and developing the inter-regional links as a support of the regional development;
- (viii) Increasing the territorial competitiveness;
- (ix) The protection, development and capitalization of the natural and cultural heritage.

Having in view the integration of these objectives in the development policies present in the territorial plan, the Strategic Concept of Territorial Development of Romania - CSDTR – *has as starting point the urban poles network in Romania and the development areas, previously determined (Annex 1). The classification of towns as development poles and the specific territories as regional policy application areas, in the above mentioned document, was achieved by a pragmatic compromise between the categories determined by the researches carried out within the European initiatives and programs, and the categories defined by the national law (Law no. 351/2001).*

According to the EPSON studies in Romania, the polycentric network is structured in the following categories of poles:

- European Importance Poles – over 1,000,000 inhabitants;
- National Importance Poles – 250,000 – 1,000,000 inhabitants;
- Regional Importance Poles – 50,000 – 1,000,000 inhabitants;
- Local Importance Poles – 20,000 – 49,999 inhabitants.

Polycentricism represents one of the Key concepts adopted by the European Union on spatial development and it has two complementary issues:

- The morphological aspect, concerning *the urban area distribution* on a given territory;
- The regional aspect, based on *the flow network and the cooperation* among the urban areas at different scales.

In Romania, according to Law no. 351/2001 on land development with the subsequent modifications and completions and also according to the provisions of the Concept of Strategic Territorial Development of Romania 2030 (CSDTR 2008) – surveying the way the urban network in Romania is integrated into the polycentric structure of EU – and in connection to the major poles network in the South-East of Europe (according to PDSE, EPSON, Planet Cense etc. classifications), the following distribution of urban areas have been identified:

- Metropolitan poles with economic growth of MEGA type (European Growth Metropolitan Areas) of international importance having more than 300,000 inhabitants: Bucharest, Timișoara, Constanța, Cluj-Napoca, Iași;
- OPUS international poles (Strategic Urban Potential Horizon) with potential Urban Functional Areas and MEGA Potential on long term, having more than 250,000 inhabitants;
- OPUS regional poles (Strategic Urban Potential Horizon) with potential Functional Urban Areas; 50,000 - 250,000 inhabitants;
- OPUS regional poles (Strategic Urban Potential Horizon) with potential Urban Functional Areas and functional specificity, as for example: Alba Iulia, Baia Mare, Râmnicu Vâlcea, Sibiu, Suceava, Tulcea;
- Sub-regional poles, having 30,000 – 50,000 inhabitants;
- Local poles, having less than 20,000 inhabitants.

For stimulating the polycentric development and the promotion of new cooperation and urban-rural solidarity relationships *it is timely to emphasize - for a certain number of towns, according to (i) the functional relationships developed in the territory, (ii) the structural characteristics of the development capacity of their metropolitan areas and also (iii) the decentralization/ de-concentration/ relocation potential - of some functions, especially those of administrative nature.*

THE CALCULATION OF THE FEATURING INDEX FOR THE SPATIAL – REGIONAL AGGREGATION LEVEL OF URBAN AND RURAL AREAS

The well-balanced polycentric development of Romania, one of the EU Member States having a strong rural space, needs a detailed analysis of the two systems – urban and rural – in this way their polarization capacity being identified which, finally is given by the level of socio – economic development achieved at a certain moment.

In order to use the settlement system as a tool in territorial development, it is necessary to create a connection between the indices featuring these settlements; this means in an unitary, synthetic expression - the multitude and also the diversity of indices used for assessing the urban and rural development stage at a certain moment in view to characterize the well balanced polycentric development of the Romanian regions.

The General Regional Polycentric Index is the focused expression of the urban and rural areas development level. It is calculated by multiplying the Regional Polycentric Index for Urban Areas by the Regional Polycentric Index for Rural Areas.

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The General Regional Polycentric Index is calculated based on the following calculation formula:

$$IPR_GEN_i = IPR_URB_i * IPR_S_i$$

where:

IPR_GEN_i	The General Regional Polycentric Index for the “i” region;
IPR_URB_i	The Regional Polycentric Index for the urban areas, for the “i” region;
IPR_S_i	The Regional Polycentric Index of the Rural Areas calculated depending on the population size and the number of villages classified based on their economic – social development level for the region “i”

RESEARCH CONTENT AND RESULTS

In the context of the process of globalization deepened by the European integration, it came out that a range of elements, both external and domestic, of the regional development policy request further completions and developments. Further, we shall briefly present the calculation results reflecting the urban and rural space analysis in Romania, subsequently describing in detail the general Regional Polycentric Index.

The urban population in Romania represents a little more than 55% of the total population, placing our country among the countries with a low level of urbanization. The highest weights of the urban population may be found in regions such as Bucharest – Ilfov (17.3% of total urban population), in the North – East Region (13.6%) and in the South – East Region (13.2%), the lowest weights being identified in the South – West Region (9.2%) and in the West Region (10.2%).

The regional urbanization degree (expressed by the weight of the urban regional population in total population), comparative with the average urbanization degree at national level has the following characteristics:

- (i) in four regions the urbanization degree is lower than the average degree of urbanization at national level, having values between 13.59% (the South – Muntenia Region) and 1.76% (the North-West Region). In this situation, besides the South – Muntenia Region with 13.59%, the North – East Region can be found with 11.72%, the South – West Region Oltenia with 7.49 %, and also the North – West Region with 1.76%;
- (ii) in other four regions the urbanization degree is higher than the average level nationally registered. In this situation is the South – East Region (0.14%), the Centre Region (4.5%), the West Region (8.22%), and Bucharest-Ilfov Region (37.21%).

On the 1st of July 2008, the urban network of Romania consisted of 319 towns with a population of 11,867,909 inhabitants. Generally, in the development regions the highest concentration of cities is located in the Centre Region (17.9% of the total number of cities, 57 cities, respectively) and in the Bucharest – Ilfov Region (2.8%, 9 cities, respectively), in the South – East Region (11%, 35 cities, respectively), in the South – West Region (12.5%, 40 cities) and also in the West Region (12.9%, 41 cities).

The analysis of the city size in the development regions reveals that 68% of the total number of towns (217) have less than 20,000 inhabitants – most of them being small towns (rank III – according to Law 351/2001 on the National Territory Development Plan – Section IV, Town Network) and have role in rural space assistance.

The measurable aspects of the spatial integration depending on the urban areas/town size have been emphasized using the statistical analysis methods. The distribution of the Romanian towns was analyzed in the eight development regions depending on their population size – structured in four size categories of urban areas/town size: less than 10,000 inhabitants; 10,000 – 20,000 inhabitants; 20,000 – 50,000 inhabitants; 50,000 – 250,000 inhabitants.

From a statistical point of view, noticeable in the assessment of the spatial integration of towns depending on their population size and the development regions, their distribution may be approached

following the perspective of value variations from the central or reference level, measured using simple indices (amplitude, variation) and synthetic indices, of which we mention dispersion (σ^2), average quadratic variation (σ) and the variation coefficient (CV) (Sandberg Krister and Meijers, 2006).

The Regional Polycentric Index for Urban Space

Based on the calculation results – size, location, connectivity – an aggregated index of Regional Polycentric Index of Urban Spaces has been defined.

The Regional Polycentric Index for Urban Areas with less than 10,000 inhabitants is situated between 0 (the Bucharest – Ilfov Region) and 0.410 (the North – East Region). The highest levels have been registered in the North – East region (0.410), the South – East Region (0.390), the West Region (0.357) and the North – West Region (0.336). Urban areas in regions with high Regional Polycentric Index of the Urban Areas might be used for developing local polycentric networks.

The Regional Polycentric Index for Urban Areas with 10,000 – 20,000 inhabitants is situated between 0.231 (the South-West Oltenia Region) and 0.459 (the North – East Region). The resulted levels of the regional polycentric index for urban areas with 10,000 - 20,000 inhabitants shows that, in the first phase, for implementing the polycentric development policies, urban areas from the North-East, North-West, Bucharest and Ilfov should be included, these being regions with the highest level of reference indicators.

The Regional Polycentric Index for Urban Areas with 20,000 – 50,000 inhabitants is situated between 0 (the Bucharest-Ilfov Region) and 0.803 (the North – East Region). The highest levels of the regional polycentric index have been registered for the North-East Region, the South-East Region (0.731) and the North-West Region (0.700). These values of the Regional Polycentric Index for urban areas recommend them for establishing the future local polycentric networks.

The Regional Polycentric Index for Urban Areas with 50,000 – 250,000 inhabitants is situated between 0 (the Region Bucharest-Ilfov) and 1.139 (the South-East Region). The highest values of the Regional Polycentric Index for Urban Areas have been registered in the South-East Region and in the North-West Region (0.886). Four of the cities in this category have relatively closed values – between 0.620 (the South Region – Muntenia) and 0.735 (the West Region) – recommending them for the future local policies of polycentric development. Moreover, the urban areas in the South-East and the North-West Regions (registering the highest level of the reference index) and also in the West Region (0.735) and the North-East Region are recommended by the high levels corresponding to the Regional Polycentric Index for the Urban Areas, as appropriated for initiating the local policies of polycentric development.

The Regional Polycentric Index for Rural Space

As for the data and the information base in calculating Regional Polycentric Index for the Rural Space, the levels corresponding to ICD from the Social Atlas of Rural Romania (Sandu, D., 2009) have been used. Based on these data, for each region and for each category of socio-economic development - (i) very poor villages; (ii) poor villages; (iii) average developed villages; (iv) developed villages; (v) villages with a maximum level of development - a classification of villages has been defined. With the help of multi-criteria analysis, the actual state of the rural spaces has been studied at regional level, as well as for socio-economic development categories. Based on the population and the number of villages, each of these two indicators structured in village socio-economic development categories, the Regional Aggregated Grades of Rural Space Characterization have been established. The highest Regional Aggregate Grade reflects the greatest influence on the rural space development; on its turn, the Regional Aggregate Grade for the Rural Space Characterization stands at the basis of developing the Regional Polycentric Index for Rural Space.

In view to support the decision makers in their actions of designing the regional development strategies – based on the growth poles concept, we presented the way of measuring the spatial integration degree of the urban and rural towns/cities on development regions and we proposed the construction of:

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- (i) the Regional Polycentric Index for Urban Areas, as a concentrated expression of their size, location and connectivity;
- (ii) The Regional Polycentric Index for Rural Areas, as a synthetic expression of the spatial-regional aggregation level of the villages depending on their socio-economic state and on the population size;
- (iii) The General Regional Polycentric Index, as a concentrated expression of the development of the urban and rural areas.

The General Regional Polycentric Index, expression of development level of urban and rural areas

The idea of polycentric development is developed simultaneously with the mutation of regional policies towards the establishment and development of some specialized regional qualifications, development of synergies and strengthening of the strong points, through regional networks of experts, suppliers, specialized education and labour markets.

According to the European reference documents and programs in the spatial development, for the social, economic, and environmental balance achievement – main objective of the territory development – the Community territory has to have, as main option, the spatial, polycentric, and well balanced development, supporting the territorial cohesion.

Polycentricism is opposite to monocentricism where the service supply and territorial administration competences are concentrated into a single centre. In addition, polycentricism is opposite to urban expansion where the secondary centre structures are melted in an unstructured spatial continuum. On the contrary, polycentricism involves the promotion of balanced and multi-scale (multi-level) urban and rural networks, socially and economically the most beneficial both for the central areas and for the purlieus areas (of a national territory).

The extension goal of the polycentric urban systems based on *the establishment of new local growth poles in each region* is to direct the decision makers' actions towards the establishment of a new specific European space (of polycentric type), allowing to emerge some urban networks; design common inter-city cooperation scenarios; draw and emphasize the dynamism of the rural areas into the general social and economic circuit; develop the cross-border regions (a redefinition of the implication of development policies would lead to the replacement of the alternative consisting in expenses for the infrastructure connecting wealthy agglomerations with poorer regions, with investment programs for expanding the connectivity and functioning within and among the peripheral regions).

In these circumstances, the General Regional Polycentric Index for the eight development regions in Romania is the following:

Table 1. *The General Regional Polycentric Index*

	The Regional Polycentric Index For The Urban Space *	The Regional Polycentric Index For The Rural Space	The General Regional Polycentric Index
0	1	2	3=col.1*col.2
North - West Region	0.362	0.212	0.077
Centre Region	0.313	0.225	0.070
North – East Region	0.803	0.139	0.112
South - East Region	0.731	0.197	0.144
Bucharest - Ilfov Region	0	1	0
South Region – Muntenia	0.532	0.135	0.072
South - West Region Oltenia	0.231	0.159	0.037
Region West	0.327	0.358	0.117

(Source: author's calculations)

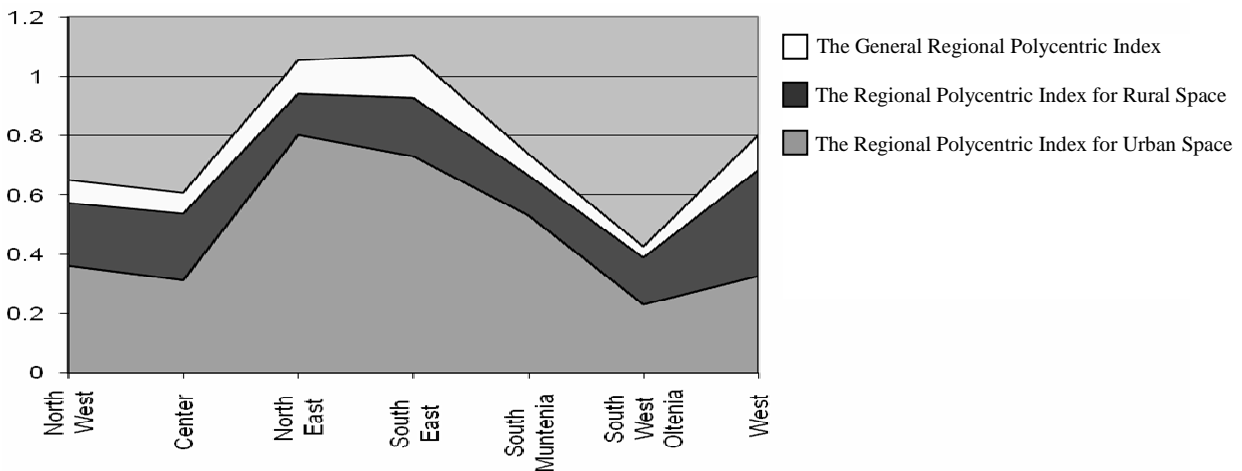


Figure 2. *The General Regional Polycentric Index*
(Source: author's calculations)

From the decision maker's point of view, who shall use the urban and rural structures as real territorial development tools for *reducing the development differences* existing now in Romania, between the development poles and the economic growth poles, it is highly requested to grant priority to the support of the polycentric network development in these areas, where the highest levels of the General Regional Polycentric Index is registered.

Taking into consideration this desiderate, we consider that in a first stage, they may be registered in the South-East Region (0.144 IPR_GEN), the West Region (0.117 IPR_GEN) and the North-East Region (0.112 IPR_GEN). Then, in a very next stage, further to the spatial development measures and the spatial mitigation of the development disparities, the North-West Region (0.077 IPR_GEN), South Region - Muntenia (0.072 IPR_GEN) and Centre Region (0.70 IPR_GEN) may follow.

When based on the reference entities classification according to the General Regional Polycentric Index, *the first two stages of the new spatial policy are designed*, the premises are established for drawing into the regional polycentric networks 17,031,782 inhabitants, of which 8,725,556 inhabitants in urban environment and 8,306,226 inhabitants in rural environment, or 73.5% of the total urban population and 85.9% of the total number of villages.

In this way, new premises for spatial diffusion of development policies effects are created. This kind of approaching an intelligent coordination of actions in urban and rural settlements is according to the main principles of the European Union policy on increasing the capacity of helping territorial partners to cooperate. In the same time, new, stronger tools can be achieved that will lead to changes, as well as new premises will be created in order to help each entity involved in the future polycentric networks use their strengths in order to obtain the greatest effects.

CONCLUSIONS

In the 20th century, the level in which the definition of regions, as well as of development regions represents a synthesis of the work carried out by economists, geographers, historians and sociologists, work that has been focused on structuring a complex social product progressively built on different societies in their process of continuous evolution.

The spatial – territorial integration pattern analysis represented a real challenge we were facing. We had to do a careful selection both of the multitude of tools developed for the social-economic phenomena and processes and also of the rich and simultaneously contradicting technical scientific literature, especially the European one, concerning the regional development patterns. The goal of this work is to draw up the analysis of the polycentric development capacity of the urban and

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rural system by developing the Regional Index of Polycentricism. According to the General Regional Polycentric Index, several *dynamic areas of economic integration with a local character have been identified*, presenting at least the following characteristics:

- (i) they are made up of urban areas inter-connected with rural areas;
- (ii) they present a relatively easy national/ regional/ local access;
- (iii) they are developed around different sized cities, especially small ones;
- (iv) for acting, functioning and playing a main role in the general spatial balance improvement in Romania, these areas of inter-connected urban and rural areas have to be economically, socially and institutionally supported by the local/ regional/ national public authorities.

The General Regional Polycentric Index has been defined as the concise expression of the development level of urban and rural areas. It was calculated by multiplying the Urban Areas Regional Polycentric Index by the Rural Areas Regional Polycentric Index, each of them depending mainly of the population number and the number of cities/ villages.

In this way, after calculating the General Regional Polycentric Index corresponding to the eight development regions in Romania, we reached to the following conclusions:

- (i) in a first phase, the West (IPR_GEN of 0.263) and the South – East Regions (IPR_GEN of 0.225) will be registered in the local polycentric system;
- (ii) on medium and long term – as a second stage of priorities supporting the local polycentric development measures, the North – West (IPR_GEN of 0.146) and the Centre Regions (IPR_GEN of 0.145) will be included.

Taking into consideration the hypothesis according to which depending on the classification of the reference entities/ development regions in Romania based on the General Regional Polycentric Index, *new pattern and spatial dispersal premises for the development of polycentric policies effects* will be created, of intelligent coordination of actions in urban and rural settlement and their harmonization with the polycentric development principles, which lie on the basis of the European Union policies on increasing the Member States' capacity of supporting partners to cooperate. Furthermore, the efficient capitalization of settlements and communities' action will be assured, simultaneously with the development of new stronger tools aiming change, using the strengths of each involved entity, for reaching a better result.

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