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# DOCTORAL THESIS

## SUMMARY

# Regional Development Models in the European Union and Romania

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**Key words:** Absorption Capacity of European Funds; Analysis of The Factors' Influence; Communes Development Index; Concept of Region; Connectivity; Convergence; Degrowth; De-location; Economic Cohesion; General Regional Polycentric Index; Growth Poles; Importance Coefficient; Location; Multi-Criterion Analysis; Polycentricism; Regional Aggregate Score; Regional Analysis; Regional Average; Regional Disparities; Regional Polycentric Index; Regression Models; Spatial Territorial Aggregation;Territorial Cohesion; Urban Areas Distribution.

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## 2. Reason and Importance of the scientific research

In the conception of the decision-makers the spatial system of the European polycentric development, which includes the cities, has the role of ensuring "…*bridges of services, including knowledge…for the population and for the various fields of activity, including the rural areas…*" (ESPON 2013, 2007).

The polycentric development is the method through which the regional policies combine the issues related to competitiveness and cohesion, which, in turn, usually amounts to the absence of regional disparities. The cohesion policy aims to generalise the economic growth and prosperity throughout the entire Union, to reduce economic, social and territorial disparities.

Analysing the possibility of creating new small and medium sized growth poles at regional level also involves using standard methodologies, specific to the territorial development, for identification, analysis and design, given the multitude of available approaches.

The assessment tool we put forward- the General Regional Polycentric Index together with its components the Regional Polycentric Index for Urban Areas and the Regional Polycentric Index for Rural Areas- is based on the points of view expressed in the specialised literature and on statistic data processed on multiple levels, achieving an original approach and stimulating at the same time reflection and further research on the topic.

In Romania, the regional development policy emerged as a need, on the one hand, to close the existent regional gaps and, on the other hand, to be able to transpose and apply the community acquis in the area as well as to have access to Community funding through the Structural Funds. In this context, the objectives of the regional development policies aim to:

- reduce the regional disparities by supporting the areas lagging behind and by monitoring the fight against the emergence of new regional imbalances;
- integrate, at regional level, sectoral policies in order to support the sustainable economic and social development at local level;

- stimulate the cooperation at interregional, national and international level and, particularly, support the cross-border cooperation in the Euroregions in which Romania is part.

For the purpose of supporting the decision-makers in designing strategies of regional economic development- based on the concept of growth poles- we believed to be of high interest also to briefly present several points of view of what the specialised literature names "critical factors".

In the paper "*Models of regional development in the European Union and Romania*" our aim is (i) *to adapt the information on the EU regional development models to the Romanian conditions*, but also (ii) *to create a strategic planning tool, we named the General Regional Polycentric Index*.

We specify that the *design of the General Regional Polycentric Index* has taken into account the specificities of our country, namely: the large number of small towns which, at local level will have to be more dynamic and to become, in the future, real development "generators"; the significant size of the Romanian rural area, on the one hand, and on the other hand, the fact that the European spatial development policies treat the rural settlements separately and they are not directly connected with the neighbouring urban areas. The topic is also important and of great interest particularly for the Romanian economic reality and for the economic research activity, for the higher education and why not, for the policy-makers which will have a new tool capable of being employed in regional analyses as well as in the medium and long term strategic planning. The General Regional Polycentric Index is an expression of the level of development of the urban and rural areas and will also be able to be used in substantiating the priority in allocating the financial resources. We also have to mention that the method of designing the General Regional Polycentric Index is an original contribution which, nevertheless needs further successive testing and the enlargement of the database used and of the number of the primary statistical indicators.

Having regard to the above mentioned remarks the paper "*Models of regional development in the European Union and Romania*" included of the following stages:

- The research of the main theories and models of regional development and of polycentric development, being a known fact that there have been a lot of discussions and papers on these topics in the last three or four decades at international level. In this context, we aimed to contribute to the clarification of this ongoing phenomenon.
- The development of a tool for territorial analysis, taking into account the population and the number of reference entities – number of towns and villages- existing in each development region and organised according to various criteria (size, socio-economic status, territorial location, etc.) which will allow: (i) the modification of the national urban system, in order to redirect the migrating flows from the consolidated cities and planned growth poles towards smaller development poles; (ii) the reduction of the internal development gaps of the regions- by engaging the local resources in the socio-economic circuit, by including them in the general dynamics of the territory (demographic dynamics, network of settlements, economic environment, transport system status,etc.), (iii) the creation of a spatial framework for encouraging the industrial relocation; (iv) the reduction of the subjectivity in the local development decisions;
- The substantiation of the recommendations for designing urban structures (other than the economic growth poles and the development poles legalised until now) capable of performing socio-economic functions having local significance, using new arguments.

We mention that the design of the General Regional Polycentric Index took account of the following: the number of reference entities - towns and villages - organised by size categories, development regions, socio-economic status categories (for the rural area); besides specific statistical processing, applications of the multi-criteria analysis were used to establish aggregates which contribute to supporting the decision making process in developing, at local level, balanced polycentric urban systems.

In our view, in Romania, the management of the polycentric regional development is a complex topic, which can be placed in the focus of the central, regional and local public administration regarding the integrated territorial development by virtue of their role in managing and reducing the territorial imbalances at regional level, in ensuring sustainable

medium and long term economic growth. The role and implications of the regional development in the system of territorial policies will be more clearly highlighted by the achievement of the objectives of the Romanian regional development policy which covers a wide series of issues of which we mention:

- Reducing the territorial imbalances through a balanced development and the prevention of new imbalances;
- Improving competitiveness and achieving permanent economic growth, by promoting a balanced spatial development of the network of municipalities, by strengthening the capacity (financial, institutional, decisional) of the current regions to support their own development process;
- Stimulating local initiatives for harnessing the available resources;
- Stimulating the internal and international interregional cooperation, the cross-border cooperation, including the cooperation of the Euroregions for economic, territorial and institutional development, for accessing common projects in accordance with the European and international agreements Romania is part of;
- Supporting local public administration to obtain financial resources for development (from the Structural Funds), as the direct public investments are limited and the decision on the spatial allocation of the national and Community public funds has an increasingly more important role in the development and implementation of the medium and long term territorial development strategies.

The scientific undertaking of assessing and identifying the possibilities of polycentric regional development focus on the eight Romanian development regions starting from: establishing the indicators of the spatial aggregation level of the towns at regional level (synthetic indicators of dispersion; connectivity; establishing the indicator of the regional aggregation level of the towns of up to 10,000 inhabitants, of 10,000-20,000 inhabitants, of 20,000-50,000 inhabitants and of 50,000-250,000 inhabitants), establishing the indicator of the regional aggregation level of the rural area according to the socio-economic status of the villages.

## 3. Research methodology

The undertaking resulted in the design of a tool for promoting a balanced and polycentric urban system, for establishing a new town-village relationship in order to ensure a balanced accessibility to infrastructures and knowledge as well as for ensuring sustainable development, prudent management and protection of the natural and cultural heritage.

The *area of research* covers the regional development in the European Union and Romania as well as the analysis of the policies in this field and the ways of assessing and allocating the financial resources for achieving territorial development. For this reason, the scientific undertaking underlying the paper "Models of regional development in the European Union and Romania" included two important stages:

(i) studying the points of view in the specialised literature on the concepts related to development and economic development, the issue and conceptualisation of development and territorial disparities at the European level; studying the status of the regional development and of the polycentric development; presenting several experiences in the management of the regional territorial imbalances, presenting some of the difficulties of the European decision-makers regarding the national convergence- regional convergence dilemma as well as their relationship with the regional disparities; studying the points of view in the specialised literature on the concepts related to the growth poles - economic growth systems; studying the types of tools used to measure the territorial imbalances at regional level;

(ii) designing the tool for establishing the capacity of polycentric development of the urban and rural system; in this context, we developed the *General Regional Polycentric Index*. In its present form, it allows the identification of dynamic areas with capacity of local economic integration and with the following features: (a) they include urban areas interconnected with rural areas (villages with different levels of socio-economic development); (b) the urban area of each region took into account the territorial distribution of the towns with a certain population size (for example, towns with less than 10,000 inhabitants, towns of 10,000-20,000

inhabitants, etc.); (c) they ensured a minimum level of regional connectivity measured by using the following statistical indicators: total number of public roads; modernised public roads; density of public roads per 100 km² of territory; road accessibility in the territory; in-use rail tracks; electrified rail tracks; density of rail tracks per 1,000 km² of territory, number of phone subscriptions at the end of the year; (d) the assessments for the urban area are articulated around certain towns, different in size, while the assessments for the rural area start from villages with different levels of socio-economic development, for example very poor villages, poor villages, medium developed villages, developed villages, villages with maximum level of development.

In short, drafting this paper included the following *stages*:

| **i. Identification of the general area of research** |
|---|
| Territorial development |

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| **ii. Selection of the topic** |
|---|
| Regional development in the European Union and Romania |

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| **iii. Drawing up of the research plan** |
|---|
| The research of the main theories and models of regional development and those of polycentric development.<br>Theoretical and methodological concepts regarding polycentrism identified within the Romanian urban network.<br>Distribution of Romanian urban and rural areas.<br>The development of a tool for identifying, monitoring and assessing the regional polycentric development, taking into account the population and the number of reference entities – number of towns and villages- existing in each development region and organised according to various criteria (size, socio-economic status, etc.).<br>Spatial aggregation of towns and rural municipalities by population size and development regions, as elements for meeting the polycentrism requirements. The identification of urban structures (other than the economic growth poles and the development poles legalised until now) capable of performing socio-economic functions having local significance. |

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| **iv. Data and information collection** |
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| Gathering information and processing the following characteristics: (a) rural areas (villages with different levels of socio-economic development – for example, very poor villages, poor villages, medium developed villages, developed villages, villages with maximum level of development); (b) b) the urban area of each region took into account the territorial distribution of the towns with a certain population size (for example, towns with less than 10,000 inhabitants, towns of 10,000-20,000 inhabitants, etc.); (c) the way of ensuring the regional connectivity measured by using the following statistical indicators: total number of public roads; modernised public roads; density of public roads per 100 sq. km of territory; road accessibility in the territory; in-use rail tracks; electrified rail tracks; density of rail |

tracks per 1,000 sq. km of territory, number of phone subscriptions at the end of the year; (d) the assessments for the urban area are articulated around certain towns, while the assessments for the rural area start from villages with different levels of socio-economic development.



**v. Information analysis**

Applying the factor analysis, the multi-criteria analysis and other statistical methods with a view of knowing the distribution of the Romanian urban and rural areas; the spatial aggregation of towns and rural settlement by population size and development regions, as elements of meeting the polycentrism requirements.



**vi. Conclusions and recommendations**

Designing a set of original indicators (the General Regional Polycentric Index, the Regional Polycentric Index for the Urban Area, the Regional Polycentric Index for the Rural Area) for identifying, assessing and monitoring the polycentric regional development. Harnessing the results and putting forward suggestions regarding the setting up of small and medium sizedd growth poles.

**Original contribution of the author** – this paper includes, on the one hand, the development of some statistical models for establishing to what extent the levels of the "x" variable (e.g. number of urban municipalities, population, etc.) recorded for each of the entities of an established entirety (e.g. a country's regions, etc.) are different from the reference level (e.g. the regional average for various size groups of towns and/or a collection of regions from a country, etc.) On the other hand, several multi-criteria analyses were performed as their synthetic result, that is the Aggregate mark, is an indicator which, in turn, not only includes the quantitative and qualitative aspects of the analysed processes and phenomena, but also allows comparisons between the analysed entities and between the development regions. This technique was used for establishing (i) the level of regional aggregation of the infrastructure system, which is generically called connectivity in the specialised literature[1] and for (ii) establishing the regional development disparities between villages[2]. The factor analysis was used for establishing the numerical imbalances of the rural population, and of the number of villages by socio-

[1] The connectivity is defined as the requirement that in a polycentric system the towns have a relatively good accessibility which is defined by various types of indicators. Having regard to the types of data available the regional connectivity was characterised by the following categories of statistical indicators: total number of public roads; modernised public roads; density of public roads per 100 sq. km; road accessibility in the territory; in-use rail tracks; electrified rail tracks; density of rail tracks per 1,000 sq. km of territory, number of phone subscriptions, etc.

[2] For the needs of this paper, the database with Communes Development Index - CDI levels was used. The analysis was performed based on the Communes Development Index (CDI) developed by Dumitru SANDU and specialists from National Institute of Statistics (2009). CDI measures the degree of development for each village based on a set of 10 indicators grouped as follows: household infrastructure, local financial resources, population health status by age groups; household goods (number of cars per 1,000 inhabitants). Based on CDI and in order to meet the needs of the paper, the rural population was organised according to the socio-economic status of the villages.

economic categories of the villages in each region, in comparison with the regional average.

As regards the tool for identifying, assessing and monitoring the local polycentric territorial development with its three indicators (the Regional Polycentric Index for the Urban Area, Regional Polycentric Index for the Rural Area, the General Regional Polycentric Index), it combines the results of the analysis techniques achieving a blend of quantitative and qualitative aspects. For a better management of the regional development, the setting up of small and medium sized growth poles is put forward having regard to the Romanian specific features (a lot of towns of local importance with a population of less than 20,000 inhabitants, nearly half of the country's population lives in villages, the urban void was created by legalising the exclusive support of large urban structures - 8 growth poles and 13 development poles), but also to the need for a better and more realistic decision for local development, for the reduction of imbalances, for stimulating the economic growth.

## 4. The synthesis of doctoral thesis chapters

### Chapter 1. The present stage of knowledge- the main theories and models of regional development. Polycentric development

The general aim of the EU regional policy (or cohesion policy) is to promote the economic prosperity and social cohesion in all 27 member states and in all 271 NUTS2 regions. In the current fiscal period (2007-2013), the budget for regional policies amounts to 347 billion euro for a period of seven years, which accounts for more than a third of the general budget of the EU for this period. The regional policy expenditure is channelled through three funds- often named "structural funds". These funds are: the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund.

Referring to the aspects of regional economic development from the perspective of polycentric development the paper includes several experts' oppinion regarding: the national convergence- regional convergence dilemma and their relationship with the regional disparities in European context; the concept of polycentric development as it is understood at European level, the growth poles as systems of sustainable economic growth and as systems for developing local polycentric networks which will ensure the emergence of a new urban-rural balance, the reduction of regional territorial imbalances. In this chapter we also presented:

(i) Some of the tools used by analysts to identify territorial imbalances at regional level (the Kuznets curve; the 2000 version of the Lucas model, etc.). According to the studies conducted by the European Commission, the regional disparities, at least as it regards employment, have raised since the '70 (Allen K., 1987). For measuring the regional specialisation and the industrial concentration, based on the available statistical data, the following indicators were used: the Specialisation Index or the Dissimilarity Index (or the "Krugmann" Index); the Herfindahl Specialisation Index, the Absolute Theil Index, the Relative Theil Index, the Topographic Theil Index.

(ii) The approach in dealing with the relation between the national convergence and the regional convergence in the process of reducing the disparities by the new EU Member

States shows that in the first stages of this process, stages characterised by an important economic growth, there is often an increase of the regional disparities (expressed in the per capita income). This fact is the result of the natural emergence of several growth poles placed in the states' capitals as well as in the great urban agglomerations. Although, alongside the economic development, the regional convergence can become a more important dimension, we have to mention that the first stages of the disparities reduction process are usually characterised by a potential arbitration between the national and regional convergence (Williamson, J.; 1965).

(iii) Some of the territorial imbalances management at regional level within 11 EU Member States (Italy, Ireland, Spain, Portugal, France, Austria, Germany, Poland, Hungary, Romania, Bulgaria) confirm the ideea according to which there is no common development model. The newest Member States , respectively the country from the Central and Eastern Europe experienced a series of aproximatelly identical developments for some of the components of regional development (as for example, the specialisation degree, and agglomeration degree). It may be seen also the fact that the inequities increased due to the performance differences of some atural growth poles (metropolitan areas) compared to the border yones. On the other hand, it is obvious that the development type, objective and ways experienced before the '90s led on long term to the „preset" of the regional development dynamic relatively commune for UE-15.

(iv) The critical factors mentioned in the specialised literature as affecting the process of conceiving and operating the growth poles refer to a wide series of participant economic actors- from small, medium enterprises to large enterprises; the system of planning the growth poles, their size and hierarchical level; the costs and benefits of the growth poles which do not alter proportionally to their size, etc.;

(v) Some aspects neglected by the decision-makers in the spatial configuration of the growth poles, such as:

- An insufficient attention towards the economic activity designed to support the entities forming a growth pole; for example, although there already is a detailed framework for the analysis of the economic activity for both the individual industries (Klassen, L. H.; 1967) and for the complex ones (Isard, W., Schooler, E. W. &Vietorisz, T.; 1959), there is no "sectoral selectivity" technique, and the

methods of planning the growth poles do not particularly encourage one economic activity or the other.

- The encouragement of the industrial relocation from the existing locations to new ones does not pay enough attention to employment; such an approach leads to many problems such as: identifying the industries to promote in the disadvantaged regions; assessing the infrastructure needed for the specific industries; finding the proper form of applicable financial assistance, etc.;
- The "spill-over" phenomenon which appeared in the great metropolitan areas in the '70s could not prevent the decline of the interregional manufacturing activity, etc.

## Chapter 2. Theoretical and methodological concepts on Polycentrism

The analyses on various development models from the Member States of the so called Community „hard core", that is the EU-15 [3] (Davies&Hallet; 2002) – implemented at both regional and national level - reveal that these models are relevant for the new Member States as well (EU-12). At the same time though, the strategic planning of the "naturally" emerged growth poles as well as the process of stimulating the creation of new growth poles in other regions have become one of the key issues of the territorial development. It has become increasingly clear that the *polycentric development may be one of the paths of the systemic approach to territorial development*. At the same time, this type of approach allows a balanced development of the territory and also the prevention of the imbalances which appear within and around the great urban agglomerations.

According to the document entitled the "European Spatial Development Perspective" which was also adopted by our country, the categories of territories involved in the European spatial development policies are structured according to the share of the urban or rural areas and accessibility as follows: (i) metropolitan areas/regions- formed in relation with the European metropolitan areas; (ii) polycentric urban areas- formed in

[3] The 15 EU Member States referred to are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the United Kingdom of Great Britain, the Netherlands, Portugal, Spain, and Sweden.

relation with the transnational/national or regional/local functional urban areas; (iii) urbanised rural areas; (iv) rural areas; (v) peripheral areas.

Several new concepts have been included in the current Romanian terminology describing the geographic scale but including the specific element as well: (i) Metropolitan Economic Growth Area – MEGA; (ii) Potential Urban Strategic Horizon – PUSH; (iii) Polycentric Integration Area – PIA; (iv) Functional Urban Area - FUA.

*It is worth mentioning that the structure of their polycentric development is continuously changing reflecting in a way the state's capacity to transfer the effects of its economic growth.*

In Romania, the main objective of the medium and long term strategies of spatial development is the *strengthening of the polycentric development and innovation by creating networks of links between the metropolitan areas and towns*. ". The metropolitan areas and the towns of *different sizes* can best develop their qualities in the context of a trans-European cooperation with entrepreneurs, civil and political society actors. If these areas succeed to apply, in a groundbreaking manner, collaboration networks in a European polycentric territory, they will have all the conditions to make the best use of the global competition for their own development.

The towns operating as *regional centres* should cooperate under a polycentric pattern, so that this cooperation is an added value for other towns from rural and peripheral areas, and for the areas facing challenges and specific geographic needs (for example, the structurally weak parts of the littoral and mountain areas).

**Box 1. Guidelines on the general strategic objective of strengthening the polycentric development from the "Strategic Concept of Territorial Development of Romania 2007-2030"**

(i) Harnessing the peripheral position by assuming the identity of connector and relay at continental and intercontinental level;
(ii) Connecting the poles and territorial development paths to the European network;
(iii) Balanced organisation and development of the network of urban municipalities;
(iv) Asserting the urban-rural solidarity;
(v) Adequate development of the various categories of territories;
(vi) Rural development;
(vii) Strengthening and developing the interregional links as a support for the regional development;
(viii) Increasing the territorial competitiveness;
(ix) Protecting, developing and harnessing the natural and cultural heritage.

Source: INCD-URBAN PROIECT, 2008

In order to facilitate this process, the infrastructure networks existing inside the European regions and between them must be constantly enlarged and modernised. Consequently, we support the European cooperation between the metropolitan regions and between the small and medium sized towns, both inside the internal borders and beyond the EU external ones…" (INCD-URBAN PROIECT, 2008).

In the above mentioned document, the classification of the urban municipalities as development poles and of the specific territories as areas for the implementation of the regional policy was the result of a pragmatic compromise between the categories established by the researches conducted under the European initiatives and programmes and the categories defined by the national legislation (Law no.351/2001 regarding The National Spatial Plan). In Romania, according to the studies conducted under the ESPON 2013 programme, the polycentric network is structured around the following *categories of poles*:

- Poles of European importance – over 1,000,000 inhabitants;
- Poles of national importance – 250,000 – 1,000,000 inhabitants;
- Poles of regional importance – 50,000 – 249,999 inhabitants;
- Poles of local importance – 20,000 – 49,999 inhabitants.

As provided by the Law no 351/2005 on The National Spatial Plan, as subsequently amended and completed, and in the Strategic Concept of Territorial Development of Romania in 2030 (CSNDT,2008), dealing with how the Romanian network of municipalities integrates in the EU polycentric structure, and in connection with the network of major poles from the South-Eastern Europe (according to the classifications from ESDP, ESPON, Planet Cense), the following distributions of urban areas have been identified in Romania:

(i) *MEGA type* (Metropolitan European Growth Areas) *Metropolitan Economic Growth Poles* with international vocation: Bucharest, Timişoara, Constanța, Cluj, Iaşi; they have more than 300,000 inhabitants;

(ii) *PUSH* (Potential Urban Strategic Horizon) *Poles,* which include:

a. National PUSH Poles *with potential for becoming Functional Urban Areas and with MEGA Potential on the long term*; they have more than 250.000 inhabitants;
b. Regional PUSH Poles *with potential for becoming Functional Urban Areas*; they have between 50,000 and 250,000 inhabitants;
c. Regional PUSH Poles *with potential for becoming Functional Urban Areas and with Functional Specificity,* such as*:* Alba Iulia (66.369 inhabitants[4]), Baia Mare (137,976 inhabitants[5]), Râmnicu Vâlcea (107,726 inhabitants[6]), Sibiu (170,045 inhabitants[7]), Suceava (106,138 inhabitants[8]), Tulcea (92,762 inhabitants[9]);

(iii) *Subregional poles*, which have between 30,000 and 50,000 inhabitants;

(iv) *Local poles*, which have less than 20,000 inhabitants.

In order to encourage the polycentric development and the promotion of new relations of cooperation and solidarity between the urban and rural areas, it is appropriate to design new growth poles for the small and medium sized towns in accordance with:

- The functional relations existing in the territory;
- Structural characteristics, their potential for developing into metropolitan areas;
- The potential for decentralisation/deconcentration/delocation of certain functions, particularly administrative ones;
- The capacity of small and medium sized towns to create local polycentric networks designed to contribute to: asserting the solidarity between the urban and rural areas; the adequate development of various categories of territories; the rural development; strengthening and amplifying the interregional links, as a support for the future regional development; increasing the territorial competitiveness; protection, development and harnessing of the natural and cultural heritage.

[4] According to the Census of 18 March 2002.
[5] Idem 4.
[6] Idem 4.
[7] Idem 4.
[8] Idem 4.
[9] Idem 4.

## Chapter 3 Distribution of Romanian urban and rural areas

On 1 July 2007 the *total population of Romania* amounted to 21,537,563 inhabitants. The population is unequally divided among the development regions; the largest parts of the population can be found in the North-East Region (17.3% of the total) and in the South-Muntenia Region (15.3%), and the lowest values of the population are in the West Region (8.9% of the total) and in the Bucharest-Ilfov Region (10.3%).

**Table 1. The urban and rural population by development regions, on 1 July 2007**

| | Total No. of pers. | Urban No. of pers. | Rural No. of pers. | Share of the total, % | | Inhabitants/ sq. km |
|---|---|---|---|---|---|---|
| | | | | Urban | Rural | |
| **TOTAL** | **21,537,563** | **11,867,909** | **9,669,654** | **55.1** | **44.9** | **90.3** |
| North-West Region | 2,725,563 | 1,455,129 | 1,270,434 | 53.4 | 46.6 | 79.8 |
| Central Region | 2,523,904 | 1,505,451 | 1,018,453 | 59.6 | 40.4 | 74.0 |
| North-East Region | 3,726,642 | 1,618,548 | 2,108,094 | 43.4 | 56.6 | 101.1 |
| South-East Region | 2,830,430 | 1,564,967 | 1,265,463 | 55.3 | 44.7 | 79.1 |
| Bucharest-Ilfov Region | 2,225,932 | 2,055,823 | 170,109 | 92.4 | 7.6 | 1222.4 |
| South Region-Muntenia | 3,300,801 | 1,371,808 | 1,928,993 | 41.6 | 58.4 | 95.8 |
| South-West Region Oltenia | 2,279,849 | 1,086,530 | 1,193,319 | 47.7 | 52.3 | 78.0 |
| West Region | 1,924,442 | 1,209,653 | 714,789 | 62.9 | 37.1 | 60.1 |

Source: Population of counties, cities and towns, on 1 July 2007, Territorial Statistical Yearbook, National Institute of Statistics, Bucharest, 2009

*The urban population of Romania* (11,867,909 inhabitants) accounts for a little over 55% of the country's population, which places *Romania among the weakly urbanised European countries*.

As regards the division among the development regions, the *highest values of the urban population* are in the Bucharest-Ilfov Region (17.3% of the total urban population), *relatively close values of urban population* are in the North-East Region (13.6%), in the South-East Region (13.2%), in the Central Region (12.7%) and in the North-West Region (12.2%), while the *lowest values of the urban population* are in the South-West Region

(9.2% of the total urban population), in the West Region (10.2%) and in the South Muntenia Region (11.6%).

*The urbanisation degree by regions* (expressed by the share of the urban population in the total population at regional level), compared to the average urbanisation degree at national level, is *lower* in four of the regions, with values between -13.59% and -1.76 %, and *higher* in four other regions, with values between 0.14% and 37.21%.

The *urban population development trend* is going downwards; thus, in 2007 the urban population reduced by 376.689 inhabitants since 2000.

On 1st July 2007, the Romanian urban network consisted of *319 cities and towns*. On the whole, the highest concentration of urban areas can be found in the Central Region (17.9% of the total number of towns), and the lowest one can be found in the Bucharest-Ilfov Region (2.8%, that is 9 towns).

In Romania the distribution of towns and cities by the size of the population is established in the National Spatial Plan (NSP) and the *relative correspondence* between the various categories of urban areas and those from the "European Spatial Development Perspective (ESDP)"[10] is the following:

(i) The category of "3rd rank towns" in NSP which includes towns of up to 10,000 inhabitants and towns with a population of 10,000-20,000 inhabitants corresponds to the "Functional Urban Areas (FUA)" from the ESDP;

(ii) The category of "2nd rank towns" in NSP which include towns with a population of 20,000-50,000 inhabitants corresponds to the "Polycentric Integration Areas (PIA)" from the ESDP;

(iii) The category of "Supra-regional Poles" in NSP which includes towns with a population of 50,000-250,000 inhabitants corresponds to the urban areas belonging to the "Potential Urban Strategic Horizon (PUSH)" category from the ESDP;

(iv) The category of "Towns of more than 250,000 inhabitants" in NSP corresponds to the "Metropolitan Economic Growth Area (MEGA)" structure.

[10] We mention that due to the difference in time between the completion of the "European Spatial Development Perspective" (ESDP) and that of the National Spatial Plan (NSP) there is a difference between the number of towns; the Table 7 includes a comparison between the classification of towns according to NSP (2008) and that according to the "European Spatial Development Perspective (ESDP)".

*The towns with a population of less than 20,000 inhabitants – The towns with a population of less than 20,000 inhabitants* (217), are mostly small towns (3rd rank towns according to NSP), they have a highly varying level of development and facilities, they serve the rural area [11], they belong to the category of small towns with local importance.

(i) In this category there are *119 towns of up to 10,000 inhabitants* which account for 37.3% of the total number of towns in Romania. Most of these towns are in the Central Region (27 towns) and in the South-West Region (20 towns), the fewest being in the South-Muntenia Region (12) and in the Bucharest-Ilfov Region (2). The towns of up to 10,000 inhabitants have insufficiently developed infrastructure and public utilities or sometimes these components are almost inexistent. It is also worth mentioning that the industrial restructuring of the '90s has affected particularly these small urban centres most of them being mono-industrial, a phenomenon which contributed even more to the reduction of their urban functions.

The population of the towns of up to 10,000 inhabitants amounts to 800,591 inhabitants, which account for 6.75% of the total urban population. The largest urban population from the towns of up to 10,000 inhabitants is in the Central Region (178,595 inhabitants, that is 22.3% of the population of this category of towns); on the average there are 6,488 inhabitants per town), and the smallest urban population is in the West Region (114,786 inhabitants, that is 14.3% of the population of this category of towns).

(ii) There are 98 *towns with a population between 10,000 and 20,000 inhabitants*, most of them being situated in the South-Muntenia Region (20) while the fewest are situated in the Bucharest-Ilfov Region (4)

The *population of the towns of 10,000 -20,000 inhabitants* amounts to 1,337,571 inhabitants and accounts for 11.3% of the total urban population. The largest urban population is in the South-Muntenia Region (270,387 inhabitants, that is 20.2% of the population of this category of towns) and the smallest urban population is in the Bucharest-Ilfov Region (55,724 inhabitants, that is 4.2% of the population of this category of towns) followed by the South-East Region (128,930 inhabitants, that is 9.6% of the population of this category of towns).

[11] A special, favoured category, within this group includes the tourist resorts which, although they have a small demographic size, can have an important role at national and regional level in the future.

*The towns with a population between 20,000-50,000 inhabitants* – In Romania, there are 56 towns of 20,000 – 50,000 inhabitants which account for 17.6% of the total number of towns. These towns belong to the category *middle-sized towns of local importance*. Most of the towns from this category are situated in the Central Region (14) and the fewest in the Bucharest-Ilfov Region where we can find only two such towns. The 56 urban municipalities of this category are either cities (2nd rank) or towns (3rd rank), *centres with a role in achieving balance at county level*, many of them having not only a special economic development, but also a favourable position. These urban municipalities have a polarising role, for this reason they have to be supported, strengthened in order to ensure the balanced development of the urban network; these towns have a potential for decentralisation/deconcentration/delocation of certain functions, particularly those concerning administration and service.

The population of the towns of 20,000 -50,000 inhabitants amounts to 1,714,449 inhabitants and accounts for 14.4% of the total urban population. The largest urban population of these towns is in the Central Region (418,396 inhabitants, that is 24.4% of the population of this category of towns) and the smallest urban population is in the Bucharest-Ilfov Region (51,668 inhabitants, that is 3.0% of the population of this category of towns).

*The towns with a population between 50,000-250,000 inhabitants* – There are 38 of such towns, accounting for 11.9% of the total number of towns. They are included in the category *towns of regional importance* (ESPON, Critical dictionary of polycentricism, 2004). The population amounts to 3,975,480 inhabitants and accounts for 33.5% of the total urban population. The largest urban population of the towns of regional importance is in the North-East Region (767,668 inhabitants, that is 19.3% of the population of this category of towns) and the smallest urban population is in the West Region (390,631 inhabitants, that is 9.8% of the population of this category of towns). In the Bucharest-Ilfov Region there are no towns of regional importance.

*The subgroup of the towns of regional importance with a population between 50,000 and 100,000 inhabitants*- The subgroup of the towns of regional importance with a population between 50,000 and 100,000 inhabitants amounts to 1,572,425 inhabitants and accounts for 39.6% of the urban population of the towns of 50,000-250,000 inhabitants. The

largest urban population in this subgroup is in the South-Muntenia Region (335,679 inhabitants, that is 21.3% of the population of this category of towns) and the smallest urban population is in the South-West Region (174,651 inhabitants, that is 11.1% of the population of this category of towns). We mention that in the Bucharest-Ilfov Region the subgroup of towns of regional importance with a population between 50,000 and 100,000 inhabitants does not exist.

This category includes 22 towns which account for 57.9% of the total amount of the group; most of the towns of this size are in the South Muntenia Region (5), followed by the North-East Region (4).

*The subgroup of the towns of regional importance with a population of 100,000-200,000 inhabitants* – it has a total population of 1,752,422 inhabitants and accounts for 44.1% of the urban population of the towns of the reference group. The largest number of inhabitants is in the North-East Region (508,424 inhabitants, that is 29.0%) and the smallest number of inhabitants is in the South-East Region (134,619 inhabitants, that is 7.7%).

The population of the subgroup of towns of regional importance with 100.000-200.000 inhabitants can be divided in three categories:

(i) *The population of the regional PUSH poles (with potential for becoming FUA*) accounting for 28.0% of the total population of the category (491,384 inhabitants); analysed by development regions, the situation of the regional PUSH poles (with potential for becoming FUA) belonging to the category of towns of regional importance is the following: 30.2% of the number of inhabitants of the regional PUSH poles (with potential for becoming FUA) is in the Central Region; 27.3% in the North-West Region; 21.7% in the South-West Region; 20.8% in the North-East Region; in the Bucharest-Ilfov Region, in the South-East Region, in the South-Muntenia Region and in the West Region there are no towns of the category of regional PUSH poles (with potential for becoming FUA);

(ii) *The population of the regional PUSH poles with functional specificity* accounts for 29.3% (512,067 inhabitants); in this category the largest urban population is in the Central Region (30.2% of the total number of inhabitants of the regional PUSH poles with functional specificity), followed by the North-West Region (27.3%), the South-West

Region (21.7%) and by the North-East Region (20.8%). We mention that in the Bucharest-Ilfov Region, in the South-East Region, in the South-Muntenia Region and in the West Region there are no towns of the category of regional PUSH poles with functional specificity.

(iii) *The population of the towns of regional importance which have not been classified as regional poles* – it accounts for 42.7% of the population of the towns with 100,000-200,000 inhabitants. Analysing the development regions, the largest number of inhabitants can be found in the North-East Region (29.9% of the total) and in the South-Muntenia Region (22.6%), and the smallest urban population from the towns of regional importance not classified as regional poles is in the South-West Region (14.4%) and in the North-West Region (15.2%) [12].

There are 13 towns of 100,000-200,000 inhabitants; most of the towns of this size are in the North-East Region (4); in each of three development regions (the South-West Region, the Central Region and the North-West Region) there are 2 such towns, and in each of other three regions (the West Region, the South Muntenia Region and the South East Region) there is one town with 100,000-200,000 inhabitants. In the above mentioned category there are 8 towns with specific functions, such as:

- Four towns from the category of *regional PUSH poles with functional specificity*, as follows: the city of Baia Mare from Maramureş county in the North-West Region; the city of Sibiu from the county bearing the same name in the Central Region; the city of Suceava from the county bearing the same name in the North-East Region; the city of Râmnicu Vâlcea from the Vâlcea county in the South-West Region; these poles are *2nd rank towns – centres of regional influence, county capitals, main entrances to nationally and internationally important tourist areas, important cultural and higher education functions;*

- Four towns from the category of *supra-regional PUSH poles (with potential for becoming FUA)*, as follows: the city of Târgu Mureş from Mureş county in the Central Region; the city Bacău from the county bearing the same name in the Norh-East Region; the city of Ploieşti from Prahova county in the South-Muntenia Region; the city of Arad from the country bearing the same name in the West Region.

[12] In the Bucharest-–Ilfov Region, in the Central Region as well as in the West Region there are no towns of regional importance not classified as regional poles.

*The subgroup of the towns of regional importance with 200,000-250,000 inhabitants* – The population of the towns of this category amounts to 650,633 inhabitants which accounts for 16.4% of the total number of inhabitants of the category 50,000-250,000 inhabitants. We mention that only 38.5% of the population of these towns can be found in supra-regional PUSH poles (with potential for becoming FUA) in the North-West Region; the rest of 68.5% of the population (205,077 inhabitants) can be found in the South-East Region and in the South Muntenia Region (445,556 inhabitants) where there are no supra-regional PUSH poles.

This subcategory includes 3 towns, accounting for 7.9% of the total volume of the group; in each of three regions (the South Muntenia Region, the South-East Region and the North-West Region) there is one town of this size [13].

*The towns with a population of more than 250,000 inhabitants* – The towns from the category of more than 250,000 inhabitants usually have a high economic level, the capacity to develop metropolitan tertiary services, well-known cultural and higher education centres, and an influence over the neighbouring areas; here we can find the headquarters of territorial institutions with regional competences. Two categories of urban poles have developed within this category of towns, as follows: National poles (with potential for becoming FUA) and with metropolitan potential; MEGA (Metropolitan European Growth Areas) metropolitan poles with international vocation.

This category consists of 8 towns and accounts for 2.5% of the total number of towns in Romania; they can be found in each region, except the South-Muntenia Region, where there are no towns of more than 250,000 inhabitants.

The population of the towns of more than 250,000 inhabitants amounts to 4,039,818 inhabitants and accounts for 34.0% of the total urban population. The largest urban population is in the Bucharest-Ilfov Region (1,931,838 inhabitants, that is 47.8% of the population of this category of towns) and in the South-East Region (597,802 inhabitants, that is 14.8%) and the smallest urban population is in the Central Region (277,945 inhabitants, that is 6.9%)[14].

[13] We mention that the city of Oradea from Bihor county, in the North-West Region belongs to the category of supra-regional PUSH poles (with potential for becoming FUA).

[14] There is no town of more that 250,000 inhabitants in the South-Muntenia Region.

(i) There are 3 *national poles (with potential for becoming FUA) and with metropolitan potential* which are towns of relatively similar sizes (an average of 290,299 inhabitants): Braşov of the Central Region; Galaţi of the South-East Region; Craiova of the South-West Region;

(ii) There are 5 *MEGA (Metropolitan European Growth Areas) metropolitan poles with international vocation: the city of Cluj-Napoca*, Cluj county, from the North-West Region; *the city of Iaşi*, Iaşi county, from the North-East Region; *the city of Constanţa*, Constanţa county, from the South-East Region; *the city of Bucharest,* from the Bucharest-Ilfov Region*; the city of Timişoara*, Timiş county, from the West Region. The total population of the 5 MEGA (Metropolitan European Growth Areas) metropolitan poles with international vocation is 3,168,921 inhabitants and accounts for 78.4% of the population of the towns of more that 250,000 inhabitants and 26.7% of the total urban population.

Currently, the interest for developing and implementing the spatial system of the polycentric development is completed with a series of approaches according to which rural settlements are attached to polycentric urban systems (OECD, 2007) which is likely to contribute to stimulating the economic growth, to the transfer of services from the urban area to the rural one, to supporting the territorial cohesion.

In order to establish the Polycentric Index which includes the rural area as well, for the conditions existing in Romania, this chapter included the analysis of the distribution of the number of villages and of the rural population by development regions and by socio-economic status.

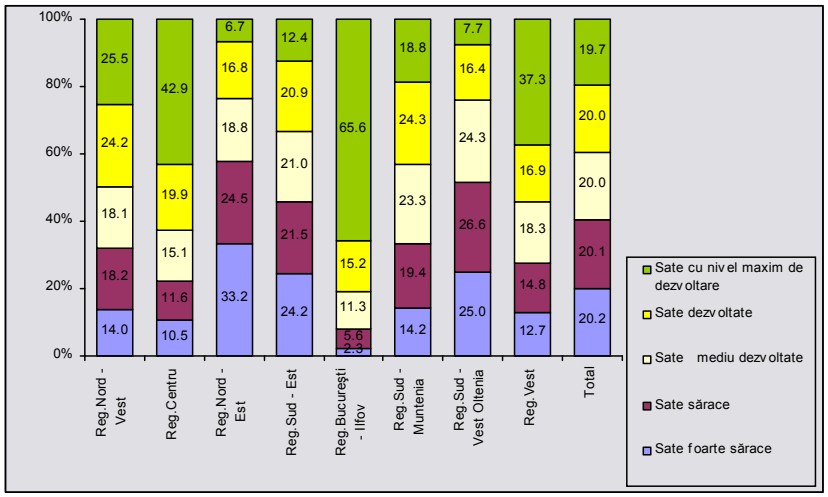
**Table 2. The number of villages and rural population, by development regions and categories of socio-economic status of villages, 2008**

| Region | Very poor villages | Poor villages | Medium developed villages | Developed villages | Villages with maximum level of develop-ment | Total |
|---|---|---|---|---|---|---|
| **Total number of villages** | **5389** | **2739** | **1904** | **1243** | **817** | **12092** |
| North-West Region | 637 | 399 | 309 | 238 | 163 | **1746** |
| Central Region | 563 | 308 | 257 | 209 | 226 | **1563** |
| North-East Region | 1405 | 473 | 244 | 138 | 46 | **2306** |
| South-East Region | 739 | 285 | 175 | 102 | 43 | **1344** |
| Bucharest-Ilfov Region | 14 | 16 | 20 | 20 | 28 | **98** |
| South-Muntenia Region | 639 | 484 | 394 | 262 | 130 | **1909** |

| Region | Very poor villages | Poor villages | Medium developed villages | Developed villages | Villages with maximum level of develop-ment | Total |
|---|---|---|---|---|---|---|
| South-West Region-Oltenia | 935 | 520 | 287 | 133 | 36 | **1911** |
| West Region | 457 | 254 | 218 | 141 | 145 | **1215** |
| *Regional average* | *674* | *342* | *238* | *155* | *102* | *1512* |
| | | | | | | |
| **Total number of inhabitants** | **1,956,125** | **1,945,310** | **1,938,070** | **1,937,247** | **1,892,903** | **9,669,655** |
| North-West Region | 177,139 | 231,506 | 230,272 | 308,053 | 323,464 | 1,270,434 |
| Central Region | 106,743 | 117,984 | 153,687 | 202,743 | 437,295 | 1,018,452 |
| North-East Region | 699,819 | 516,668 | 397,512 | 353,680 | 140,416 | 2,108,095 |
| South-East Region | 306,842 | 272,512 | 265,788 | 263,524 | 156,798 | 1,265,464 |
| Bucharest-Ilfov Region | 3,842 | 9,538 | 19,249 | 25,811 | 111,669 | 170,109 |
| South-Muntenia Region | 273,109 | 373,446 | 450,054 | 467,833 | 364,550 | 1,928,992 |
| South-West Region-Oltenia | 297,667 | 317,751 | 290,470 | 195,160 | 92,272 | 1,193,320 |
| West Region | 90,964 | 105,905 | 131,038 | 120,443 | 266,439 | 714,789 |
| *Regional average* | *244,515* | *243,164* | *242,259* | *242,156* | *236,613* | *1,208,707* |

Source: Calculations from Sandu D.; Voineagu V.; Panduru Filofteia in "*Development of Romanian communes*", July, NIS, Bucharest, 2009.

**Chart 1. The structure of the rural population by regions and categories of socio-economic status of villages, 2008**




Source: Calculations from Sandu D.; Voineagu V.; Panduru Filofteia in "*Development of Romanian communes*", July, NIS, Bucharest, 2009.

*The regional distribution of the number of villages by their socio-economic status*- The total number of villages in Romania is 12,092 (not including the villages with a

population of less than 20 inhabitants recorded at the 2002 General Agricultural Census - Sandu, D. et al, 2009).

Most of the villages are in the North-East Region (2,306 villages, that is 19.1% of the total number), the fewest villages being in the West Region (1,215 villages, that is 10.1%).

*As regards the entire country, the situation by categories of socio-economic status of villages* is the following: 44.6% of the total number of villages are very poor villages; 22.7% are poor villages; 15.7% are medium developed villages; 10.3% are developed villages; 6.8% are villages with maximum level of development.

*The regional distribution of the rural population and its socio-economic status* – The total rural population in Romania amounts to 9,669,654 inhabitants. The distribution of the rural population by development regions is unequal. The largest rural population is in the North-East Region (2,108,094 inhabitants) and the smallest is in the West Region (714,789 inhabitants)[15]. Analysing the entire country (except the Bucharest-Ilfov Region), the population of the villages is quite evenly distributed by categories of socio-economic status of villages.

## Chapter 4. Spatial Aggregation of Cities and Rural Areas. The General Regional Polycentric Index

Establishing the spatial aggregation level of the cities within the regions was based on generally agreed indices used by the specialized literature (T. Villaverde Castro, 2004) like the size, location and connectivity.

The starting point for calculating the indices concerning the towns size and location was the dispersion calculation. Based on the dispersion ($\sigma$) the mean square deviation ($\sigma^2$) had been calculated, and based on it and on the average level ($X_{med}$), determined the coefficient of variation. This one is expressing in a comparative way the spread related to the average value[16].

[15] If the Bucharest-Ilfov Region (170,109 inhabitants) is excluded due to its lack of representativeness.

[16] From all synthetic indices of spread the variation coefficient is by far the most used and useful for comparative analyses. (Dalgraad C.J., Vastrup J., 2001).

The Connectivity was defined by the present paper as the request according to which in a polycentric system, cities and towns have a relatively good accessibility, feature defined within the present work by 8 types of statistical indices: total public roads; modernised public roads; public roads density on an area of 100 km²; territory causeway accessibility; in-use rail ways; electrified rail ways; rail ways density on a territory with the area of 100 km²; telephone subscribers number, etc.

The adopted aggregation technique corresponds to the multi-criteria method. For each of the connectivity indicators was calculated at the region level a rank established by prioritization according to the other regions ranks in an ascending order, assigning to it a grade/score/ rank ($R_i$). The ranking is designed from 1 to 9 (8 ranks for each of the 8 Romania development regions and a rank for the average at national level, or regional average). Afterwards, an importance coefficient ($k_i$) is assigned to each of the 8 connectivity indicators chossen. The importance coefficients scale was prioritized according to (i) the importance rank of the Connectivity Index – very important, major, secondary; (ii) the possible consequences of not fulfilling the agreed criterion, which may be: extremely sever at region economy level; severe, but only at level of some activities carried on within the region; effects with a low influence within the region, sometimes just isolated effects. In this context, the values assigned to the importance coefficients ranked for connectivity featuring indices are the following:

(i) For "consequences with lower impact effects within the region, sometimes just isolated effects" the importance coefficient scale is designed between 4 and 1;

(ii) For "severe consequences but only at the level of some activities in the region" the importance coefficients scale is designed between 10 and 5;

(iii) For "extremely severe consequences at region economy level" the importance coefficients scale is designed between 13 and 10.

Based on the 8 considered connectivity indices prioritizations, and also on the prioritization of the values of the coefficient of importance assigned to each indicator it had been calculated the complex indicator "Aggregate Score of Connectivity" ($Asc_i$)[17].

$$\mathbf{Asc_i = (\sum R_i * k_i) / \sum k_i}, \quad (1)$$

*Where:*

| | | |
|---|---|---|
| $Asc_i$ | - | The Aggregate Regional Score for Connectivity for the Development Region "i", respectively for the national average level; |
| i | - | 1,….., 8 region, 9 – regional average level; |
| $R_i$ | - | Rank of each connectivity indicator ascending prioritized; |
| $k_i$ | - | Importance coefficient assigned to each indicator. |

So, the "size" is quantified by the variation coefficient for the cities population, the "location" is expressed by the dispersal in territory of cities with a certain population ($x_j$ <10.000 inhabitants, 10.000-20.000 inhabitants, ...>250.000 inhabitants), and the "connectivity" is expressed by the aggregate Rank of the Regional Connectivity. Based on these weights, was calculated the aggregate indicator of Regional Polycentric Index for the Urban Areas ($IPR_URB_i$).

*The calculation formula for the Regional Polycentric Index for the Urban Areas ($IPR_URB_i$) is the following*:

$$\mathbf{IPR_URB_i = CV_i * \sigma_i^2 * Asc_i} \quad (2)$$

*where*:

| | | |
|---|---|---|
| $IPR_URB_i$ | - | Regional Polycentric Index for Urban Areas. |
| i | - | 1,….., 8 region, 9 – regional average level [18]; |
| $CV_i$ | - | The regional distribution of population of towns of a certain size; |
| $\sigma_i^2$ | - | The territorial distribution of cities within a region and of a certain population dimension; |
| $Asc_i$ | - | The Aggregate Score corresponding to the Regional Connectivity; |

[17] The scarce data concerning the available data and information made us to addopt the following working hipothesys: the assessment of connectivity was determined on the whole of each development region. The levels calculate din this way have been then used for the calculation of the Regional Polycentric Index for Urban Areas. At the levelof each development region the Aggregated Regional Score for Connectivity functioned as a constant for different size categories for the towns considered by this paper.

[18] The indicator was calculated by summarizing the level of each region and dividing by 8 existent development regions (this indicator acts as a "regional/ national average" for the reference phenomenon quantified).

For the Regional Polycentric Index specific to the Rural Space determining was used the *Communes Development Index (CDI)* designed and calculated at the villages level in Romania by Dumitru SANDU & others (2009). Depending on the CDI level, the rural population has been structured according to the economic-social status of the villages where they live, achieving aggregations on development regions[19]. According to the villages development level there have been achieved analyses on the following categories of socio-economic development level of villages: (i) very poor villages; (ii) poor villages; (iii) average developed villages; (iv) villages with a maximal level of development.

For determining the regional development disparities among the villages the following five economic analysis techniques have been used:

(i) Determining the variation in population number and also in number of villages on economic-social development categories in a given development region, compared with the regional average[20];

(ii) The calculation of the factors impact, when the phenomenon alteration is expressed by its relative deviation (ΔFI) for a given development region, compared with the regional average[21];

(iii) The calculation of the Regional Aggregate Score for Featuring the Rural Space for the Region "i" taking into account the population and villages number categorized according to their economic-social status ($RAS_SR_i$); this is a complex indicator, based on the multi-criteria analysis pattern used. For measuring the regional development disparities among the villages 10 indicators have been used: the villages population structured in 5 categories of social-economic development and in regions; the number of villages depending on 5 social-economic development categories and regions.

The indicators of each region concerning the social-economic development of villages, including the national average have been prioritized in an ascendant hierarchy, assigning them scores from 1 to 9 (one for each region and one for the national average level).

[19] It has to mention that when was calculated the CDI the study authors did not take into consideration the villages with a population under 20 inhabitants registered by the General Agriculture Census in 2002; this feature was take into account, also, in the present paper.
[20] Vincze Maria; Samochiş, B; Stegăroiu, D., 1977.
[21] Vincze Maria; Samochiş, B; Stegăroiu, D., 1977.

Afterwards, a coefficient of importance ($k_i$) had been assigned to each of the 10 indicators of the rural space. The scale of the importance coefficients has been prioritized according to (a) grade of importance of the rural space indicator – very important, major, secondary; (b) possible consequences of not fulfilling the agreed criterion, which may be: very severe at the level of the regional economy, severe but only for some activities developed at the region economy level; with effects with a lower impact within the region, sometimes just isolated affected. In this context the values assigned to the importance coefficient distributed to the rural space featuring indicators are:

(i) For "consequences with effects of a lower impact within the region, sometimes only isolated ones", the importance coefficients scale is developed between 4 and 1;

(ii) For "severe consequences only at level of activities developed within the region", the importance coefficients scale is developed between 10 and 5;

(iii) For "extremely severe consequences at the level of the region", the importance coefficients scale is developed between 13 and 10.

Based on the hierarchic differentiations developed for the 10 rural space indicators considered, and also on the importance coefficient values assigned to every indicator was developed the complex indicator "Regional Aggregated Score of the Rural Space" ($RAS_SR_i$); each of the aggregated indicators featuring the space disparities at regional level has been compared with the Regional Aggregated Score of the Rural Space for the national average.

$$\mathbf{RAS_SR_i = (\sum R_i * k_i) / \sum k_i;} \quad (3)$$

*where:*

| | | |
|---|---|---|
| $RAS_SR_i$ | - | Regional Aggregated Score of the Rural Space; |
| i | - | 1,….., 8 Regions, 9 – regional average level; |
| $R_i$ | - | Rank of each of the 10 indicators established in ascendent hierarchy; |
| $k_i$ | - | Importance coefficient assigned to each indicator, having values between 1 and 13, according to the above presented scale. |

(iv) Taking into account the significance of the Regional Aggregate Score of the Rural Space, it was agreed that for a balanced territorial development including also the rural areas, the Regional Polycentric Index for Rural Space is calculated as reverse of the

Specific Regional Aggregate Score[22]. The Regional Polycentric Index for the Rural Space is calculated according to the following formula:

$$\mathbf{IPR_SR_i = 1\ (:)\ RAS_SR_i} \quad (4)$$

*where:*

| | | |
|---|---|---|
| $IPR_SR_i$ | - | Regional Polycentric Index for Rural Space, for Region „i”; |
| $RAS_SR_i$ | - | Aggregated Score featuring the Rural Space disparities - calculated depending on the villages population and the number of villages both classified according to their social-economic status – within the region „i”. |
| i | - | 1,….., 8 Region, 9 – Regional Average Level |

So, from the inter-regional comparison of the Regional Polycentric Indices of the Rural Space we reached to the conclusion that the entities with the highest levels will reflect a lower impact of the rural issue over the regional development, while the entities with lower levels will correspond to higher impact of the rural issue over the territorial development.

*The General Regional Polycentric Index* is the synthetic expression of the development level of urban and rural areas. It is calculated as product between the regional Polycentric Index for Urban Areas (IPR_URBi) and the Regional Polycentric Index for Rural Areas (IPR_SRi), calculated depending to the population and the number of cities/ towns classified depending either on their size or on their social- economic status (as for the villages classified depending on their social-economic status).

The General Regional Polycentric Index is calculated according to the following formula:

$$\mathbf{IPR_GEN_i = IPR_URB_i * IPR_SR_i} \quad (5)$$

*where:*

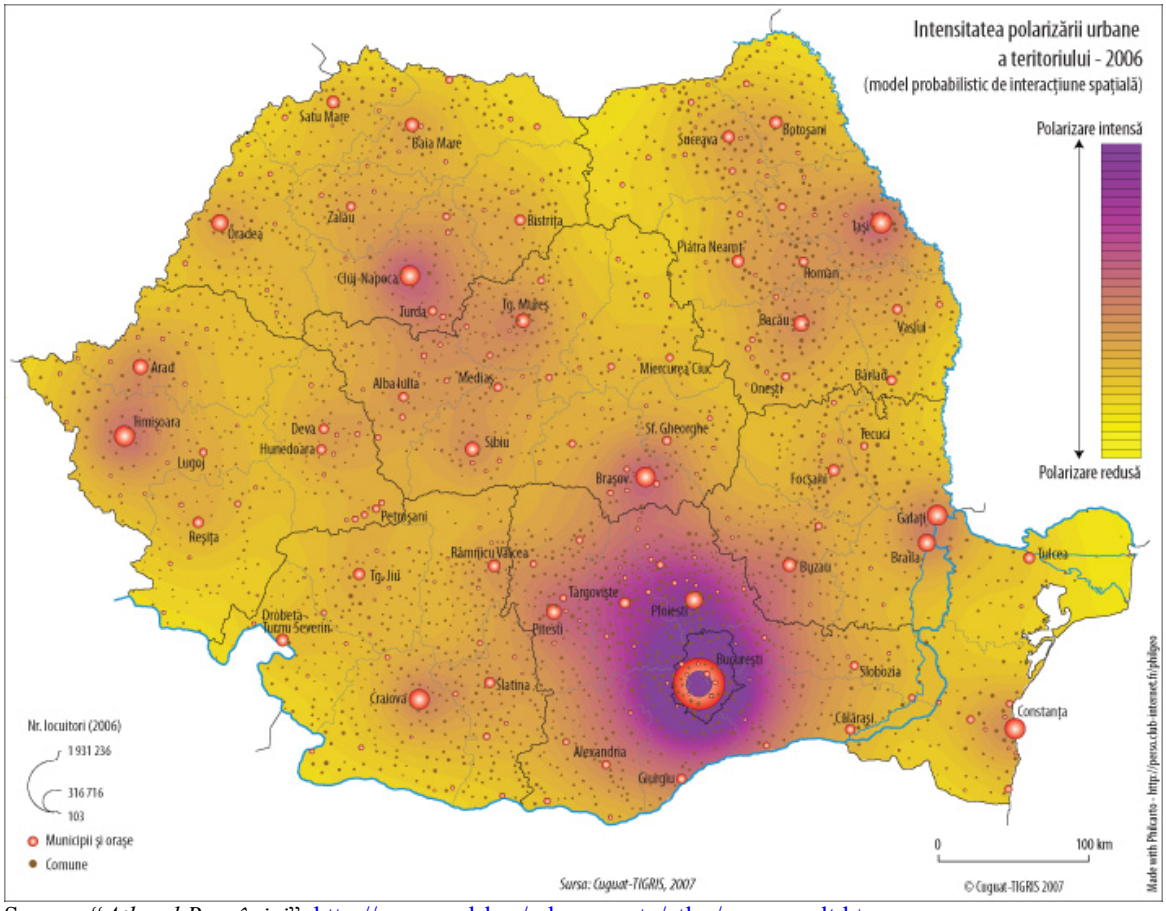
| | | |
|---|---|---|
| $IPR_GEN_i$ | - | The Regional Polycentric Index for Region „i”; |
| $IPR_URB_i$ | - | The Regional Polycentric Index for Urban Areas, for Region „i”; |
| $IPR_SR_i$ | - | The Regional Polycentric Index for Rural Areas calculated depending on the population and villages number, both classified according to their social-economic status, for the region „i”; |
| i | - | 1,….., 8 Region, 9 – Regional Average Level. |

[22] In making this decision it was considered the fact that for the spatial configuration of the growth poles, including also entities from the rural space, is requested the ability of the states of taking over urban functions, allow relocations, etc. Taking all these elements into consideration we mention that for the spatial configuration of the growth poles, including also entities from the rural space, the last ones have to be included in one of the following categories: medium developed villages, developed villages, villages with a maximum level of development.

## Chapter 5. Quantitative presentation of the urban and rural areas at regional level in Romania

The analysis of the economic growth territorial dispersion and development poles, already legally authorized in Romania by National Spatial Plan, highlights the existence of a real spatial "vacuum" among them.

**Figure 1. Regional Urban Systems**[16]




Source: "*Atlasul României*", http://www.mdrl.ro/_documente/atlas/a_soc_cult.htm

Romania is dominated by many towns of small size and a significant rural space representing more than 80 % of its territory. The rural Romanian spaces are entities with

[16] Notices for the Fig.1. Regional Urban Systems:
- The intensity of urban polarization of the territory – 2006
- High Polarization / Low Polarization
- Inhabitants number (2006):
- Municipalities and cities
- Communes

a strong historical inertia, but in the same time they pay the tribute to the compulsions concerning the distance, infrastructure, labour force quality and training, etc.

Within the context of territorial development, both small cities and some of the rural towns could play a role in the future. This research was based for the first part of the fifth chapter on the calculation of the regional polycentric index for the urban areas of different sizes, and for the second part on the calculation of the regional polycentric index of the rural space of different sizes, for all eight regions of the country.

There have been achieved statistical calculations concerning the Romanian cities, on development regions and depending on population size, meaning: (i) local importance poles – towns with less than 10,000 inhabitants; (ii) local importance poles – cities with 10,000 – 20,000 inhabitants; (iii) local importance poles – cities with 20,000 – 50,000 inhabitants; (iv) regional importance poles – cities with 50,000 – 250,000 inhabitants.

For quantifying the three dimensions featuring the polycentricism (size, location, connectivity) and deciding which of the four above mentioned categories fulfill the polycentricism terms is requested to cover the following steps:

- *Step1*: For the dimension represented by *Size*: for the data series concerning the urban population and structured according to the cities' size[23] and on the eight development regions, are analyzed the levels of the Index of Variation Coefficient (VC); the lowest values are selected because they determine the most reduced spreading compared to the average;
- *Step 2:* For the dimension represented by *Location*: for the data series concerning the cities number structured according to their size[24] and development regions, the index of dispersion ($\sigma^2$) is analyzed; the lowest values are selected, because we are interested in the spatial distribution pattern of cities of a certain dimension;
- *Step 3 :* For the dimension represented by *Connectivity* a set of specific indices was used (public roads, modernized public roads, public roads density on a

[23] The size categories of the cities are the following : (i) cities with less than 10.000 inhabitants, (ii) cities with 10.000 – 20.000 inhabitants; (iii) cities with 20.000 – 50.000 inhabitants (iv) poles if regional importance - cities with 50.000 – 250.000 inhabitants.
[24] The same as the previous step.

territory of 100 km², in-use rail ways, rail ways density on a territory of 100 km², etc.), analyzed by comparing the level of each region feature with the national average. For supporting the polycentric developments it is preferable that the regional aggregate score corresponding to the future polycentric networks be higher or as close as possible to the Regional Average Aggregate Score.

- *Step 4:* For adopting the decision on designing the future polycentric networks for different categories of urban areas, the levels of the indices of Variation Coefficient and Dispersion are analyzed and the space simultaneously presenting the lowest levels for the two mentioned indices is chosen; the result is afterwards completed with the information offered by the Regional Aggregate Score on Connectivity, synthetic expression of each region capacity to ensure the connection with other entities.

It is seen the fact that depending on the level of the Regional Polycentric Index established for the small and medium sized towns, within the future local polycentric development policies 73 towns, from the size categories of 10,000 – 20,000 inhabitants and 20,000 – 50,000 inhabitants, may be included, spread in the all 8 development regions.

The dispersion of the 73 towns on size categories is the following: 67,1 % of the total are towns with 10,000 – 20,000 inhabitants (in the North-West Region, West Region, South/West Region and Central Region) and the rest of 32,9 % towns with 20,000 – 50,000 inhabitants (in South Muntenia Region, in North-East Region, South-East region and in Bucharest-Ilfov Region).

The total inhabitants number from the two towns categories is estimated at 1,449,129, representing 12.2 % of the total urban population. The structure of the urban population from the two towns categories is the following: 46.7 % of the total number of inhabitants are living in towns with 10,000-20,000 inhabitants, while 53.3 % are the inhabitants of cities with 20,000-50,000 inhabitants.

The average number of inhabitants corresponding to a town is 19.851, different depending on the town size category; so, in towns with 10,000 – 20,000 inhabitants the average number of inhabitants corresponding to a town is 32.165.

Analyzing the level of the *Regional Polycentric Index for the Rural Space* we conclude that:

- Within the regions with the highest level of the *Regional Polycentric Index for the Rural Space* are included the Region of Bucharest-Ilfov, which is not representative so it can be excluded; (1), the West Region (0.358) and the Central Region (0.225); they are followed by the North-West Region (0.212) and South-East Region(0.197);
- In the category with the lowest level of the *Regional Polycentric Index for the Rural Space* are included the South-Muntenia Region (0.135); the North-East Region (0.139) and the South-West Oltenia Region (0.159).

From the point of view of decision-maker who has to allot the funds for investments we conclude that the he/she could have as priority of hid/her spatial policy the orientation towards the rural areas registering the highest levels of the Regional Polycentric Index for the Rural Space. In the same time, this approach creates prerequisites for future synergic regional developments.

For using the settlements systems as territorial development tools is requested to "articulate" the relations among the settlements; in fact it means the increasing of urban-rural cooperation, the strengthen of functional areas in the territory; the partnership cooperation among urban and rural, small and medium sized towns at regional and transnational scale; and also the establishment of small and medium sized urban and rural clusters.

Taking into account the fact that also within the regions where the highest levels of the Regional Polycentric Index for Rural Space there are towns/ villages with a low index level (poor and very poor villages, identified based on the data and information used for calculating CDI) we suggest to attract with priority only of the villages from the socio-

economic categories average developed, developed, and of the villages with a maximum level of development; according to this hypothesis resulted the following *alternatives of treatment of the rural space comprising within the polycentric development policy*:

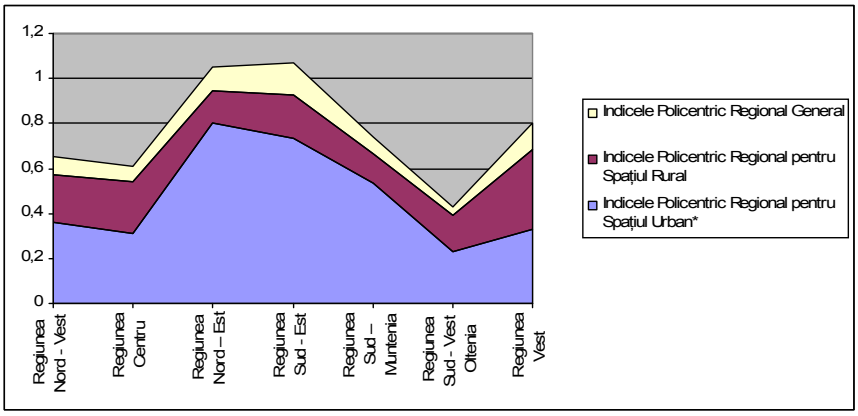
(i) If we take into account the villages with a level of economic and social development over the average coming from the 4 regions having a higher level of the Regional Polycentric Index of Rural Space (the Bucharest-Ilfov Region - 1; the West Region – 0.358; the Central Region – 0.225; the North-West Region – 0.212) we may conclude that there are established the prerequisites for attracting into the new polycentric system 4,622 villages (38.2 % of the total number of villages) with 3,173,785 inhabitants (32.8 % from the total rural population);

(ii) When from the initial alternative (i) is excluded the Region Bucharest – Ilfov, as being not representative for the rural space, then for the remaining regions (the West Region with IPR_SR – 0.358; the Center Region – 0.225; the North-West Region – 0.212) are established the prerequisites for being attracted into a polycentric network system with 4524 villages (37.4 % of the total number of villages) with 3,003,676 inhabitants (31.1 % of the total rural population);

(iii) If the villages having a level of the Regional Polycentric Index for the Rural Space from the first six regions (Bucharest-Ilfov Region with IPR_SR – 1; the West Region – 0.358; the Center Region – 0.225; the North-West Region – 0.212; the South-East Region – 0.197; the South – West Oltenia Region – 0.159) into the polycentric networks could be attracted 7 877 villages (65,1 % of the total number of villages) with 5,632,567 inhabitants (58.2 % of the total rural population).

In these circumstances, the General Regional Polycentric Indices for the eight development regions in Romania will be the following:

**Figure 2. The General Regional Polycentric Index**




Source: author's calculations

Considering the opinion of the decision-makers, the future user of the urban and rural structures as territorial development tools for mitigating the spatial development vacuum already existent in Romania, among the growth poles and the economic increasing poles, is requested to give priority to the support of the polycentric network development within the areas registering the highest levels of the General Regional Polycentric Index.

Taking into account this goal, in a first stage, we consider that the following regions may be registered: the South-East Region (with a IPR_GEN of 0.144), the West Region (with a IPR_GEN of 0.117), and the North-East Region (with a IPR_GEN of 0.112).

Then, in a very next stage of continuing the measures of supporting the spatial development and reducing the development vacuum will be situated the North-West Region (0.077), the South Muntenia Region (0.072) and the Center Region (0.700).

In the hypothesis according to which depending on the reference entities classification based on the General Regional Polycentric Index *two stages of the new spatial policy above mentioned are designed,* are established the prerequisites for attracting into the regional polycentric networks of 17,031,782 inhabitants including 8,725,556 inhabitants in the urban environment and 8,306,226 inhabitants from the rural environment representing 73.5 % of the total urban population and 85.9 % of the total rural population. In the same time the rural population which could be involved during the first two stages

of urban-rural polycentric development will be the population coming from 10,083 villages, respectively 83.4 % of the total villages number.

In this way new premises for spatial spread of the development policies are established. Such an approach of the intelligent coordination of the urban and rural towns actions is harmonized also with the principles grounding the European Union policy on developing the capacity of helping the territorial partners to cooperate. Also, new and more powerful levers may be developed for changing; simultaneously and prerequisites for using the strongest points of each unit involved in the future polycentric networks for a better result are also developed.

## 5. Conclusions and proposals

### 5.1. The main conclusions of the doctoral thesis are the following:

**1.** Within the context of the globalization and European integration deepening it was obvious that there is no clear, simple and universal pattern able to answer to the region economic development goals, but there are a series of elements – both external and domestic – influencing the development policy and strategy, that should be rigorously analyzed, exactly quantified and realistic exploited.

**2.** In Romania, the regions have no administrative role but a statistical and planning one, and the regional policy is applying the principles of the European development policy. The base document for regional development policies in Romania is "The Strategic Concept on the Territorial Development of Romania (SCTDR)[25]" whose directing lines are: (i) The connection to the European network of spatial development poles and corridors; (ii) the urban cities network structuring and development through developing at national and regional scale of transport and telecommunications networks, considered real "reinforcements" for the well balanced development systems; (iii) the assertion of urban – rural solidarity; (iv) the inter-regional links network strengthening and development; (v) natural and cultural heritage capitalization.

**3.** Through polycentric developments the prerequisites of systemic development approach are established, allowing on one hand a better balanced territory development and on the other hand, the avoidance of the discrepancies emerged around the large urban agglomerations.

**4.** The polycentric development tries to mix together the issues of competition and cohesion. The cohesion policy and Europe 2020 Strategy will significantly contribute to the growth and welfare spreading all over the Union, mitigating simultaneously the economical, social and territorial disparities, and approaching challenges like population aging and climate changing.

**5.** The polycentric network in Romania is build according to the Law no. 351/2001 on land development, with subsequently modifications and completions, and also to the provisions of the "Strategic Concept of Territorial Development in Romania 2030"

[25] Approved in 2005.

(MDRL, 2008), identifying six kinds of urban areas distribution, as follows: (i) metropolitan growth poles, MEGA type; (ii) national poles OPUS type (Strategic Urban Potential Horizon); (iii) regional poles OPUS type (Strategic Urban Potential Horizon); (iv) regional poles OPUS type (Strategic Urban Potential Horizon); (v) sub-regional poles; (vi) local poles.

**6.** The trend of the total population development in Romania is marked by a decrease (in 2008 the inhabitants number was by 4% lower than in 2000). The urban population of Romania (11.867.909 inhabitants) means a little more than 55 % of the total country population, placing our country among the less urbanized countries in Europe. The highest weights of the urban population are registered in the Bucharest – Ilfov Region (17,3 % of the total urban population), while the lowest weights of urban population are in the South-West Region (9,2 %) and the West Region (10,2 %). Obviously, these conclusions are justified also by the regions sizes.

**7.** On the 1st of July 2008, the Romania urban network included 319 cities, the highest concentration of cities is registered in the Central Region (17,9 % of the total cities number, respectively 57 cities) and the lowest cities number is registered in the Bucharest – Ilfov Region (2,8 % cities, meaning 9 cities).

**8.** Within the regional development policy is requested to: (i) both the MEGA (Metropolitan European Growth Areas) metropolitan poles with an international vocation, and the national poles (with FUA potential – Functional Urban Areas) function as metropolitan zones/ areas for ensuring the links with the European metropolitan areas; (ii) analyze also the possibility of the over-regional urban poles OPUS (cities with 200.000 – 250.000 inhabitants) future development in the South-East Region and in Muntenia South Region where there are no such entities; (iii) urban towns with 20.000 – 50.000 inhabitants which are either municipalities (rank II), or cities (rank III), playing a balancing role at county level, shall be transformed in real polarization elements, and for that they have to be supported, strengthened and attracted within the process of functions location – mainly administrative and services - for the well balanced development of the urban network; (iv) small towns with 10.000 – 20.000 inhabitants (rank III – according to PATN), generally having a role of serving the rural space and also a very different level

of development and endowing, shall be involved in the decentralization processes and become local poles of development connected to the local/ regional network.

**9.** Analyzing the number of the rural population and villages we reached to the conclusion that for the future polycentric networks the average developed villages, within the developed villages, and also the villages with a maximal development level could be, beside the cities of local importance, possible partners in the process of developing poles of a smaller size.

**10.** For reaching the national objectives established by the Europe Strategy 2020 – having in view a deeper integration of EU policies and also for materializing the integrated directions from the mentioned reference document – we consider that beside an EC common strategic frame[26] (the CSF) and promotion activities for operational programs (PO)[27], a partnership contract for development and investments[28], are equally requested *coherent tools for measuring the allotments (one of them being the General Regional Polycentric Index IPR_GEN) based on which the development of new proper territorial structures will be grounded – as for example the smaller and medium size poles with local urban – rural characteristics*.

**11.** The General Regional Polycentric Index was calculated by multiplying the Regional Polycentric Index for Urban Areas by the Regional Polycentric Index for Rural Areas, each of its components being ascertained mainly by the population size and the number of towns, respectively villages, with the difference that the city's population and their number have been structured on different size categories, while the villages population and villages number have been split on social-economic categories.

**12.** Within these terms, after calculating the General Regional Polycentric Indices depending on different criteria and for each of the eight development regions in Romania, we reached to the following conclusions:

[26] Which translates the objectives and goals of the Europe 2020 Strategy in investment priorities including the Cohesion Fund, the European Regional Development Fund, the European Social Fund, the European Agriculture for Rural Development Fund, and the European Fishery Fund.

[27] which should establish the investment priorities, the EU and national resources allotment among the fields and programs with priority in cohesion policy enacting.

[28] representing the main management tool transposing the content of the strategic documents in actual investments priorities together with clear and measurable objectives.

(i) During the first stage of designing the local polycentric development policies for small and medium size entities, they will be able to register within the local polycentric systems in the West Region (with a IPR_GEN of 0,263) and in the South-East Region (0,225);
(ii) On medium and long term, within the second priority categories for supporting the local polycentric development measures the North-West Region (0,146) and Central Region (0,145) will be included.

**13.** When, depending on the classification of the reference entities/ development regions in Romania according to the General Regional Polycentric Index new patterns and *prerequisites of spatial diffusion of the development polycentric policies effects* are established. These aim the intelligent coordination of the urban and rural towns' actions for ranging within the polycentric development principles – which are the base of the European Union policies on increasing the Member States ability of supporting the partners co-working. The efficient capitalization of towns and small and medium size communes will be also ensured by applying tools which are able to obtain changes, using the strengths of each entity involved, for getting the best synergic outlook will be created.

**14.** By promoting the national urban system alteration and encouraging the emergence of many new small size poles some of the principles listed by the "Strategic Concept of Territorial Development in Romania – 2030" are also supported, respectively: proper strengthening of urban – rural solidarity, of different territory categories, including the rural ones, by the indigenous development, based on diversity and performance; the promotion of partnerships among cities/ urban agglomerations and the association patterns of rural administrative entities. The expected proposals results concerning the increase of smaller and medium size poles number are:

- Changing the national urban system in view to *reduce the regional discrepancies and re-direct the migratory flows from the strengthened metropolis and planned growth poles to the smaller size development poles.*
- By the establishment of smaller and medium size development poles *balanced industrial relocations, the progress of the industries through dispersion at inter-regional level is encouraged. This phenomenon was limited by the influence of the scale economies and slowed down the spreading of the industrial capacities, the*

*spreading of the general economic development at spatial level – taking into consideration the fact that - generally speaking - the economic nature connections do not always attract the development of the connections at spatial geographical level. However, the activity of the services sector is encouraged –encouraging domestic industry development by offer development, especially of the technology transfer; encouraging innovation of the processes and products; the development of the entrepreneurship abilities and start-ups.*

### 5.2. Proposals for future

**1.** Nowadays more than ever, the complexity and size of the European regional development patterns, including the Romanian ones, is subject of the globalizations' consequences. However they will be different from one area to another, from a territory to another, depending on the way local/ regional interests are expressed by the proper indices and also by the local resouces forthcoming and possibly involvable according to the public interest at a certain moment. Therefore, the European regional development within the broader context of globalization has to be regarded as an international integration (market) process, where the economies and local/ regional social systems experiment a rapid development of their influence sphere, suffering a mutual interdependence.

**2.** Taking into consideration the fact that within the expanding at spatial level of the general economic development the economic connections do not always involve connections at geographical level too. In the future the governmental and legislative decisions shall take into account the Polycentric Development Indices, what the present paper tried to suggest. Only in this way the territorial, economical and social cohesion will became axis of a real support during 2014-2020 and in the same time, as the start base for well balanced and sustainable development projects meant to ensure an equitable chance for different regions, with different development parameters, for reducing the disparities.

*… In the contrary, the inter-regional and intra-regional disparities increases, and the economic, social and territorial unbalance becomes deeper.*

**3.** In order to be able to prepare new and realistic regional development projects in Romania for the next program period of European Funding for 2014-2020 the Regional Development Plans based on the Regional Territorial Development Plans and the Regional and Metropolitan Development Strategies need to be finalized. The elaboration of the Integrated Urban Development Plans (PID), which has been started in 2010, is not only very expensive but also represents a challenge for each involved community. As such it shall reflect - throughout this documentation - the way local interests are observing the process of Europeanization of the Romanian territorial structures in the context of process generated by the economic-financial crisis on the one hand, and by the globalization process on the other.

**4.** The concerns on preparing the development terms of some realistic regional and local development projects on the access of each community to the future European funding (2014-2020) shall increase, being equivalent with a well balanced vision on the territorial development, a constant concern on the well balanced and sustainable development of different urban and rural zones, because the urban – rural relationship in a country where 45 % of the population lives in the rural environment has to be a primordial one, with few priority objectives soundly grounded. However the Romanian economic, social and territorial cohesion policy tend to observe the general directions of *"... establishing a new polycentric European space, allowing not only the emergence of new urban networks but also the building of common development scenarios..."* (According to the document entitled "The Spatial Development Perspective of Europe – SDPE", ESPON, 2006). In the same time, the development pattern of small and medium size local polycentric networks will allow realistic options for the urban – rural partnership, industrial activities relocations, will facilitate the development of the services sector, the development of domestic industry by increasing the offer – especially the technology transfer, the innovation, entrepreneurship capacities and multiplying the green-fields.

## 6. Limits and Perspectives of the research

**1.** Based on the regional aggregation level assessment for different size categories of the Romanian cities and villages and taking into consideration the Rural Regional Polycentric Index, the Regional Polycentric Index for Urban Areas and also the General Regional Polycentric Index polycentric development projects can be designed. These projects, combining all these data and information, should include not only large or regional growth poles but also urban and rural areas which, considering the development axes based on size, location, connectivity, economic development indices, are able to deliver data and information for a balanced territorial development.

**2.** The analysis and designing of some territorial aggregation tools was a real challenge we faced. This is because we had to make a careful selection from the multitude of tools developed for assessing the socio-economic phenomena and processes linked to the spatial aggregation. Please note that the knowledge adaptation process and the transfer of the European Union regional development patterns considered at least two dimensions of our country specificity, meaning: the high number of existent small towns – which at local level have to became real development "engines"; the rural space dimensions in Romania on one hand, and on the other hand the fact that when grounding the spatial development policy decisions the rural towns are more often individually treated and not connected to the neighboring spaces. We tried to design a tool for promoting a balanced, polycentric urban system, and also for enlightening a new city – village relationship considering ensuring a balanced accessibility to infrastructures and knowledge, and also a sustainable development, careful management and conservation of our natural and cultural heritage.

**3.** We consider that by developing the General Regional Polycentric Index, an expression of urban and rural areas, development level, real prerequisites for decision makers will be developed, for defining balanced polycentric development systems of different sizes according to the existent structures in Romania. In the same time, the General Regional Polycentric Index suggested by this paper represents a synthetic expression of a broad variety of economic, social and geography/ spatial factors considered for harmonizing the mutual interdependencies. By its design, this index reflects the individual structural

characteristics of the development regions using data and information specific to the urban and rural areas.

**4.** Considering the initial proposal of this paper, on developing an instrument of identification, assessment and monitoring of the regional, polycentric development we consider that more analysis and debates are needed on its establishment, it's composing indicators and it's mode of aggregation on one hand and it's functionality, on the other.

**5.** Romania owns unexploited resources and capacities that can be capitalized only by taking into account the local specificity, articulating the traditions, culture, touristic and economic potential with the development parameters. For ensuring an efficient use of the financial resources in fields directly linked to the cohesion policy[29] it may be observed also the encouraging of more and smaller size local poles.

**6.** A higher concern for surveying the achievement of synergic effects and their assessment is needed when speaking about new territorial projects addressed to the smaller and medium size communities. The authors of the scientific literature consider that the growth pole planning and/ or implementation are not an easy task, although the benefits could be significant (AllenK., 1987). We have to reveal the fact that the establishment of a growth pole within a relatively small center is a kind of a risky action, for many reasons. The infrastructure becomes more and more sophisticated and indivisible; the industries/ fields of activity are more and more specialized and vertically integrated, generating higher and higher demands for services and other suppliers; an increasing of the development demand is achieved within the regions less developed, linked on its turn to the beneficial characteristics induced by the large size urban agglomerations, the last ones having the capacity of spurring the economic development also in the economically lagged behind regions; the proximity remains an important factor in growth poles development.

**7.** The characteristic of the small towns representing "a certain way of life" and the common challenges they face in spite of the existent differences among the Member States concerning their administrative and financial structures is confirmed by the establishment of the European Confederation of the Towns and Municipalities of the

[29] The conclusions of the Fifth report on the economic, social and territorial cohesion: The Future of the Cohesion Policy, EC, Bruxelles, COM 2010 (642/3).

European Union (CTME). The body was formally established at the beginning of this year, representing the small towns in seven member States (France, Germany, Italy, Hungary, Poland, Romania and Serbia), which reunited their forces to increase their influence over the EU policies.

Within this context, we are hoping that the establishment of growth poles in Romania will be supported by the new European Confederation of Towns and Municipalities of the European Union (CTME), pleading for supporting the EU structural funds reform[30], for reformatting the cohesion policy of EU before the next programs wave, planned to be launched in 2014.

[30] According to the Communicate published in EURACTIV, 17 February 2011.

# 7. Selective Bybliography


| | | |
|---|---|---|
| 1. | ALASIA, A | "*Alternative measures of Territorial Disparity: An Application to Canada, OECD, Public Governance and Territorial Development Directorate*", Territorial Development Policy Committee, Working Party on Territorial Indicators, 2002 |
| 2. | ALLEN, K | „*Growth centres and growth centre policy*" in Warne, E.J.D. (ed.), *Regional Policy in Efta*, Geneva, 1971, în Vanhove, N., *Regional Policy: A European Approach*, Ashbury 1987 |
| 3. | ALONSO, W. | „*The economics of urban size*", Papers of the Regional Science Association, 26, 1971 |
| 4. | AMISSE, Sylvain & Colab. | „*The concept of cluster and its two logics*", EAEPE Conference „Labour, Institutions and Growth in a Global Knowledge Economy", Roma, 6-8 noiembrie, 2008 |
| 5. | ANGELESCU, Coralia | "*Economia României şi Uniunea Europeană*", Vol.VI, Colecţia Teorie Economică, Ed. ASE, Bucureşti, 2007 |
| 6. | ANTONESCU, Daniela | „*Dezvoltarea regională în România. Concept, mecanisme, instituţii*", Ed.Oscar Print, Bucureşti, ISBN 973-668-011-8, 2003 |
| 7. | ARROW, K. | „*The economic implications of learning by Doing*", Review of Economic Studies, 29, 1962 |
| 8. | ASCHAUER, D.A. | „*Is public expenditure productive?*", Journal of Monetary Economics 23, ISSN: 0304-3932, Imprint: ELSEVIER. |
| 9. | ATALIK, G. | "*Some effects of regional differentiation on integration in the European Community*", papers of the Regional Science Association, vol. 69, 1990. |
| 10. | BACHTLER, J.; YUILL, D. | *2007 "Regional Policy in Western Europe: Taking Stock of the Shift in Paradigm*", in Ruhr-Forschungsinstitut für Innovations- und Strukturpolitik (RUFIS), Beiträge zur Ballungsforschung, Bochum, 2008 |
| 11. | BANSKI, Jerzy | „*Dilemas for Regiuonal Development in the Concepts Seeking to Develop Poland's Spatial Structure*" in Regional Insights, Vol.44, no.3, June 2010, Regional Studies Association, Seaford, East Sussex, UK, 2010 |
| 12. | BARA, Simona | „*Stadiul dezvoltării agriculturii României comparativ cu statele Uniunii Europene*" Probleme economice, nr.29,CIDE-INCE, Academia Română, ISSN 1222-5401, Bucureşti, 1996 |
| 13. | BARA, Simona, MOLDOVAN Minodora, RUSALI Mirela, ROMAN Ioana | „*Identificarea zonelor rurale cu disfuncţionalităţi în agricultură*", Probleme economice, nr.30,CIDE-INCE, Academia Română, ISSN 1222-5401, Bucureşti, 1996 |
| 14. | BARCA, Fabrizio | *"The Union and Cohesion Policy – Thoughts for Tomorrow"*, Transcript of the presentation at the Conference for the 5th Anniversary of Poland's Accession to the EU, Brussels, November 4, 2009 |
| 15. | BARCA, Fabrizio | *„An Agenda for a Reformed Cohesion Policy,*<br>*A place-based approach to meeting European Union challenges and expectations"*, Independent Report prepared at the request of Danuta Hübner, Commissioner for Regional Policy, Brusseles, 2009 |
| 16. | BARCA, Fabrizio | *„An agenda for a reformed cohesion policy. Independent Repoprt*" Solicitat de Danuta Hübner, Commisioner for Regional Policy, April 2009 |
| 17. | BARNA, R.C. | *"Economia regională"*, Ed. Fundaţiei pentru Studii Europene, Cluj-Napoca, 2008 |
| 18. | BARRIOS, S. STROBL, E. | *"The Dynamics of Regional Inequalities",* in Economic Papers of the European Commission, No. 229, Brussels, 2005 |
| 19. | BARTA, GY.; BELUSZKY, P.; FÖLDI, ZS.; KOVÁCS K. Coord. | *„A területi kutatások csomópontjai"* MTA, Regionális Kutatások Központja, Pécs, 2010 |
| 20. | BASTIAAN, De Goei& Colab. | „*Functional Polycentrism and Urban Network Development in the Greater South East, UK: Evidence from Commuting Patterns*" in Regional Studies, Vol.44, no.9, Nov. 2010, Regional Studies Association, Seaford, East Sussex, UK, 2010 |
| 21. | BECKMANN, M. J. MCPHERSON, J.C. | „*City size distribution in a central place hierarchy: an alternative approach*", Journal of Regional Science, 10, 1970 |
| 22. | BENEDEK, J. | *„Amenajarea teritoriului şi dezvoltarea regională"*, Presa Universitară Clujeană, 2004 |
| 23. | BENKO, G | *„La science régionale*", PUF, Paris, 1998 |
| 24. | BERRY, B. J. L. | „*Hyerarchical diffusion: the basis of development filtering and spread in a system of growth centers*" in: N. M. HANSEN (Ed) Growth Centers in Regional economic Development. New |

| | | |
|---|---|---|
| | | York: The Free Press, 1972 |
| 25. | BICKENBACH, F. ; BODE, E | *„Disproportionality measures of concentration, specialization and polarization”*, Kiel Working Paper 1276. Kiel Institute for World economics, 2006 |
| 26. | BIRSAN, Maria | *“Integrarea economică europeană”*, vol.III –Mediul European al Afacerilor, Ed. Fundației pentru studii Europene, Cluj-Napoca, 2006 |
| 27. | BÎRSAN, Maria | *“Integrarea economică europeană”*, vol.II –Uniunea Europeană – relații economice cu alte zone, Ed. Fundației CDIMM Maramureș, Baia Mare, 1999 |
| 28. | BOHATEREȚ, V.M.- Coord. | *“Posibilități de dezvoltare a României prin programe și fonduri de la Uniunea Europeană”*, Academia Romana - Filiala Iași, Ed.Terra Nostra, Iași, 2007 |
| 29. | BOISIER, S. | “*Growth Poles: Are They Dead?*”, in B. Prantilla (ed.), National Development and Regional Policy (Nagoya, Japan: United Nations Centre for Regional Development, 1981 |
| 30. | BONACCORSI, A. | *„Towards better use of Conditionality in Policies for Research and Innovation under Structural Funds – The Intelligent Policy Challenge*”, University of Pisa, Italy, 2008 |
| 31. | BORBÉLY László | *“A regionális fejlődés elmélete és modelljei. Policentrikus fejlődés”,* A Romániai Magyar Közgazdász Társaság és a Babe udományegyetem s–Bolyai T, Közgazdaság- és Gazdálkodástudományi Kara magyar tagozatának közös szakmai közlönye, Kiadja a Romániai Magyar Közgazdász Társaság, RMKT, 2009, ISSN 1582-1986, CNCSIS 755-2007 (C) |
| 32. | BOSCO, M. G. | „*Specialization and concentration in a polarized country, the case of Italian regions*” in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. And Petrakos*, G. ,* Routledge: Taylor and Francis, 2008 |
| 33. | BOUDEVILLE, J.R. | *“Problems of Regional Planning”***,** Edinburgh: Edinburgh University Press, 1966. |
| 34. | BRANDL. B. ; FOLZER, C. | „*Regional structural change at the interface between old and new member states, the case of Austrian regions*”, in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. And Petrakos, G. *,* Routledge: Taylor and Francis, 2008 |
| 35. | BRULHART, M. TRAGER, R. | „*An Account of geographic concentration patterns in Europe*” Regional Science and Urban Economics, 35 (6): pg. 597 – 624, 2005 |
| 36. | BUCK, N., GORDON, I.R., HALL, P., HARLOE, M. & KLEINMAN, M | „*Working Capital: Life and Labour in Contemporary London*”, London: Routledge, 2002. |
| 37. | CAMPEANU, Virginia; MOLDOVEANU, Marcel; Coordonatori | „*Contextul european şi global de dezvoltare a Romaniei pre şi post aderare*”, Institutul de Economie Mondială, Academia Romană, Bucureşti, 2006 |
| 38. | CARROL C. | “*The Lucas Growth Model*”, <http://econ.jhu.edu/people/ccarroll/public/lecturenotes/Growth/LucasGrowth.pdf> |
| 39. | CATTAN, N. | “*Redefining territories: functional regions, Territorial Development Service – Territorial Development Service Committee*”, OECD, Paris, 2002 |
| 40. | CHINITZ, B. | “*Contrasts in agglomeration: New York and Pittsburgh*”, American Economic Review, 51, 279–89, 1961 |
| 41. | CIUPAGEA, C. Coordonator | “*Procese definitorii şi tendinţe în integrarea economică europeană. Strategii de dezvoltare economică a României în perspectiva integrării în Uniunea Europeană*”, Academia Romană, INCE, CIDE, Colecţia Biblioteca Economică, Vol.8, Bucureşti, 2003. |
| 42. | COCEAN, Pompei; FILIP, Sorin | “*Geografia regională a Romaniei*”, Ed.Presa Universitară Clujeană, Cluj-Napoca, 2008 |
| 43. | COJANU, V. | „*A Discussion on Competitive Groups of Countries Within the European Area of Integration*”, South- East European Journal of Economics 5:2 (2007a), pp. 185-202 |
| 44. | COJANU, V. | „*Regional Policy and Development in an Enlarged Europe: A Survey of Theoretical Arguments*”, Review of International Comparative Management, 6 (2005), 153-169 |
| 45. | COJANU, V. | „*The Case for Competitive Areas of Integration: A Literature Review*“, Studia Europaea LII: 2 (2007b), pp. 213-234 |
| 46. | COJANU, V. &Colab. | “*Cerinţe specifice ale gestionării instrumentelor structurale şi implicaţiile pentru România*”, Institutul European din România, Bucureşti, 2004 |
| 47. | COMAN, Adela | “*New Growth Theory and economic Development*” în The impact of Romania’s accession to the EU on regional structures, vol.1, Ed.AETERNITAS, Alba Iulia, 2007 |
| 48. | CONROY, M. E. | „*On the rejection of growth center policy in Latin American Regional development planning*”, Land Economics, 49, 1973 |

| | | |
|---|---|---|
| 49. | CONSTANTIN, Daniela Luminița, Coordonator | "*Coeziunea economico-socială şi politica regională. Contribuția fondurilor europene la finanțarea programelor*", Ed.ASE, Bucureşti, 2007 |
| 50. | CONSTANTINESCU, Mădălina | "*Urban Development from European Integration Perspective*", în The impact of Romania's accesssion to the EU on regional structures, Vol.2, Ed.AETERNITAS, Alba –Iulia, 2007 |
| 51. | COWELL, F. A. FLACHAIRE, E. | „*Sensivity of Inequality measures to extreme values*", Discussion Paper no. DARP 60*,* London: London School of Economics, 2002 |
| 52. | CRIPPS, Francis &Colab. | "*Regional Challenges in the Perspective of 2020 Regional Disparities and Future Challenges*", A report to the Directorate-General for Regional Policy; Unit Conception, forward studies, impact assessment, CONTRACT N°CE.16.AT.060 / 2008.CE.16.C.AT.022, Brussels, May, 2009 |
| 53. | CZURIGA, Esyter | "*The regional Policy of the EU and its Results in Portugal: Convergence and divergence in practice*", în Society and Economy. Journal of the Corvinus University of Budapest, vol.31, no.2, Dec.2009, AKADEMIAI KIADO, Budapesta, 2009. |
| 54. | DAVIES, S. & HALLET, M.. | **"***Interactions between national and regional development*" Hamburgisches Welt-Wirtschafts-Archiv (HWWA), Discussion Paper 207**,** 2002. |
| 55. | DINU, Marian; SOCOL, Cr.; NICULESCU, Aura | "*Fundamentarea şi coordonarea politicilor economice în Uniunea Europeană*", Col.Prelegeri, Ed.Economică, Bucureşti, 2006 |
| 56. | DURANTON, G. & PUGA, D. | "*On the sources of convergence: a close look at the Spanish regions*", CEPR discussion paper, no. 1543, 1996 |
| 57. | ELLISON, David | *"Subnational Regionalism in a supranational context: the case of Hungary"*, ăn Romanian Journal of European Affaires, vol.8, no.1, April 2008, European Institute of Romania, Bucharest, 2008 |
| 58. | FAIR, T. J. D. | „*A regional approach to regional development in Kenya*", South African Geographical Journal, 45, 1963 |
| 59. | FALUDI, A. | "*Polycentric territorial cohesion policy*", Town Planning Review, 76, pp.107-118, 2005 |
| 60. | FAWCETT, L. | "*Exploring regional domains: a comparative history of regionalism*", International Affairs vol. 80, no.3., 2004 |
| 61. | FILION, Pierre | „*Reorienting urban development? Structural obstruction to new urban forms*" în International Journal of Urban and Regional Research, vol.34, no.1, Ed. Wiley Blackwell, 2010 |
| 62. | FITJAR, R.D. | "*Building Regions on Economic Success: Prosperity and Regionalism in Rogaland*", Scandinavian Political Studies, Vol. 29, No. 4, 2006 |
| 63. | FUENTE (De La) A. | " *On the sources of convergence: a close look at the Spanish regions*", CEPR discussion paper, no. 1543, 1996 |
| 64. | FUENTE (De La) A. | " *On the sources of convergence: a close look at the Spanish regions*", CEPR discussion paper, no. 1543, 1996 |
| 65. | GAILE, G. L. | „*The spread-backwash concept*", Regional Studies, 14, Londra, 1980 |
| 66. | GĂITAN, G. | *„Cadrul conceptual, legislativ şi instituțional pentru amenajarea teritoriului şi dezvoltarea regională în România",* Urbanproiect, p.65, Bucureşti, 2006 |
| 67. | GĂITAN, G. | "*Cadrul conceptual, legislativ şi instituțional pentru amenajarea teritoriului şi dezvoltarea regională în România"*, Urbanproiect, Bucureşti, 2006 |
| 68. | HAGUE, C. & KIRK, K. | "*Polycentricity scoping study*", Office of the Deputy Prime Minister, London, 2003. |
| 69. | HAMID, Hosseini | *"Why development is more complex than growth: clarifying some confusions".* Review of Social Economy, Volume 61, Issue 1st March 2003, pages 91 – 110, 2003 |
| 70. | HANSEN, N. | *"Efficient regional resource allocation and growth centre policy"*, Paelnick, J.H.P. (ed.), Programming for Europe's Collective Needs, Amsterdam, 1970, în Vanhove, N., Regional Policy: A European Approach, Ashbury 1987 |
| 71. | HIRSCHMAN, A. O. | *„The Strategy of Economic Development",* New Haven, CT: Yale Uniersity Press, 1958 |
| 72. | HOOVER, E. M. | "*Location Theory and Shoe and Leather Industries"*, Cambridge, Harvard University Press, 1936 |
| 73. | HOOVER, Edgar M.; GIARRATANI, F. | "*An Introduction to Regional Economics*", Regional Research Institute, West Virginia University, 1999 |
| 62 | HORVÁTH GY. | *"Decentralizácio és regionalizmus Európában",* Pécs, 2001 |
| 63 | HORVÁTH GY. (szerk.) | *„Régiók és települések versenyképessége",*MTA, Regionális Kutatások Központja, Pécs, 2006 |
| 74. | HORVATH, Gyula | „*Cohesion Deficiencies in Eastern and Central Europe. Inequalities of Regional Research* |

*Area*", Discussion Papers, no.72, Series editor GAL Zoltan, Budapesta, 2009

75. HOSSEINI, Hamid — *"Why development is more complex than growth: clarifying some confusions",* Review of Social Economy, Volume 61, Issue 1st March 2003

76. IANCU, Aurel — *"Real Convergence and Integration"* în Romania Journal of European Affaires, vol.7, no.4, Dec.2007, European Institute of Romania, Bucharest, 2007.

77. IANOŞ, I. — „Oraşele şi organizarea spațiului geografic", Ed.Academiei RSR, Bucureşti 1987

78. IARA, A. — „*The regional economic structure of Romania 1992 – 2001*", in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. And Petrakos*, G. ,* Routledge: Taylor and Francis, 2008

79. ILLÉS I. — *"Regionális gazdaságtan- Területfejlesztés",* TYPOTEX, Budapest, 2008

80. ISARD, W., SCHOOLER, E. W., VIETORISZ, T. — „*Industrial Complex Analysis and Regional development. New York*": John Wiley and Sons, 1959

81. ISARESCU, Mugur — "New and Future Member States: Romania's role in the EU-27", în Romanian Journal of European Affaires, Vol.5. no.3, Special Issue, European Institute of Romania, Bucharest, 2005

82. JAMES, B. G. S. — „*The incompatibility of industrial and trading cultures: a critical appraisal of the growth point concept*", Journal of Industrial economics, 13, Londra, 1964

83. JENSEN, O.B RICHARDSON T. — *"Making European Space, mobility, power and territorial identity"*, Routlege, 2004.

84. JENSEN, O.B. — „*Discourse Analysis and Socio-spatial Tansformation Processes: A theoretical framework for analysing spatial planning*", Newcastle upon Tyne, Department of Town and Country Planning, University of Newcastle upon Tyne, 1997

85. JULA, D., JULA, Nicoleta, AILENEI, D., GÂRBOVEAN, A. — „*Economia dezvoltării, Teoria dezvoltării – probleme naționale – dimensiuni regionale"*, Editura Viitorul Românesc, 1999, Bucureşti

86. KLAASSSEN, L. H. — *„Growth Poles. An Economic View*", în Vanhove, N., Regional Policy: A European Approach, Ashbury 1987

87. KLAREN, F., BOSSERT, Th.J. — "*Promise of Development: Theories of Change*" in Latin America, WestwiewPoint, 1986.

88. KLASSEN, L. H. — *„Methodes of Selecting Industres for Depressed Area",* Paris: OECD, Paris, 1967

89. KLASSEN, L. H. — *„Area Economic and Social Development: Guidelines for Programmes",* Paris: OECD, Paris, 1965

90. KLASSEN, L. H. — *„Methodes of Selecting Industres for Depressed Area"*, OECD, Paris, 1967

91. KRIEGER – BODEN, C. — „*Southern enlargement and structural change, case studies of Spain, Potugal and France*", 2008

92. KRIEGER – BODEN, C. — „*Eastern enlargement in a nutshell, Case study of Germany*" in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. And Petrakos, G. , Routledge: Taylor and Francis, 2008

93. KRIEGER – BODEN, C. — „*Southern enlargement and structural change, case studies of Spain , Potugal and France*", 2008

94. KRIEGER-BODEN, C. — „*Eastern enlargement in a nutshell, Case study of Germany*", in „The Impact of European Integration on Regional Structural Change and Cohesion", Ed. by Krieger-Boden. C. , Morgenroth, E. And Petrakos, G. , Routledge: Taylor and Francis, London, 2008

95. KRUGMAN, P. — *„Geography and trade",* MIT press, Cambridge, Massachusetts, 1991

96. KULE, Lalia — „*Urban-rural interactions in Latvia*" in Regional Insights, Issue I, Vol.I, Summer 2010, Regional Studies Association, Seaford, East Sussex, UK, 2010

97. KUZNETS, S. — " *Economic growth and Income inequality* ", American Economic Review, no. 65, 1955

98. LÁZNE, Mariánské — "*Reflection paper on future Cohesion Policy*", Informal Meeting of Ministers for Regional Policy, Bruxelles, 22-24 aprilie 2009

99. LENGYEL, I. — *„Regionális gazdaságfejlesztés",* Akadémiai Kiadó, Budapest,2010

100. LENGYEL, I., RECHNITZER, J. — „*Regionális gazdaságtan*", Dialóg-Campus, p.391, Cluj, 2004

101. LEWIN, A. — „*Caracteres originaux des metropoles d equilibre"*, Urbanisme, 89, 1965

102. LIPIETZ, A. — „*The structuration of space, the problem of land, and spatial policy"*, in J. Carney, 1980

103. LUCA, L. — „*O țară şi două agriculturi - România şi reforma Politicii Agricole Comune a UE*", CRPE, Policy Memo nr. 4, Octombrie, Bucureşti, 2009

| | | |
|---|---|---|
| 104. | LUCAS R. E. | *" Some macroeconomics for the 21st century*", Journal of EconomicPerspectives, vol. 14, no. 1, 2000 |
| 105. | LUTAS, Mihaela, TIRON-TUDOR, Adriana GHISOIU, Magdalena | *" The impact of Romanian labor migration on the Romanian Development Regions*", în Costs and Benefits of European integration. Case study for Romania, Ed.RISOPRINT, Cluj-Napoca, 2009 |
| 106. | LUTTREL, W. F. | *„Factory Location and Industrial Movement",* London: National Institute for Economic and Regional Research, 1962 |
| 107. | MALECKI, Ed. | *„Jockeying for Position: What It Means and Why It Matters to Regional Development Policy When Places Compete*," Regional Studies, vol. 38, no. 9 (decembrie 2004), pp. 1101-1120. |
| 108. | MARCHIS, Gabriela | *„Impactul extinderii Uniunii Europene asupra strategiilor şi politicilor regionale*", Ed.Didactică şi Pedagogică, Bucureşti, 2009 |
| 109. | MARCHIS, Gabriela | *„Analiza fondurilor europene pre şi post adrare în Romania*", Ed.Didactică şi Pedagogică, Bucureşti, 2009 |
| 110. | MARTIN Ron | "*Thinking About Regional Competitiveness: Critical Issues*", 'Think-Piece' Paper pentru East Midlands Development Agency, University of Cambridge, 2005 |
| 111. | MARTIN Ron; SUNLEY Peter; KRUGMAN'S Paul | *„Geographical Economics and Its Implications for Regional Development Theory: A Critical Assessment*", Economic Geography, Julay 1996, 259-292 |
| 112. | MARTIN, P. | *„Public policies, regional inequalities and growth*", Journal of Public Economics 73, ISSN: 0047-2727. Imprint: ELSEVIER. |
| 113. | MATON, J. | *„Regional research and development planning: the case of East Flanders*", Papers of the Regional Science Association, 14, 1965 |
| 114. | MCCRONE, G. | *„Regional Policy in Britain*" Ed.Allen and Unwin, London, 1969 |
| 115. | MOLDOVEANU, M. | "*Noile dimensiuni ale globalizării şi integrării regionale*", în Seria Probleme economice, Col.Biblioteca Economică, vol.253, Academia Romană, INCE, CIDE, Bucureşti, 2007 |
| 116. | MONFORT, Ph. | *„Regional Convergence, Growth and Interpersonal Inequalities across EU*", Directorate General Regional Policy, European Commission, Brussels, 2008 |
| 117. | MORGENROTH, E. | *„The impact of regional specialisation, urbanisation and agglomeration on economic activity in Ireland: an empirical analysis*", Mimeo, 2005 |
| 118. | MORGENROTH, E. | *„Economic integration and structural change, the case of Irish regions*", in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. and Petrakos, G., Routledge: Taylor and Francis, 2008 |
| 119. | MORSE, R. M. MATHUR, O. P. SWAMY, M. C. K. | *„Costs of Urban Infrastructure as Related to Citz Size in Developing Countries".* Palo Alto, CA: Standford Reasearch Institute, 1968 |
| 120. | MORTON, Matthew H. | *„Applicability of Impact Evaluation to Cohesion Policy",* Department ofSocial Policy & Social Work, University of Oxford, United Kingdom, 2008 |
| 121. | MULLIGAN, G. F. | *„The effects of multiplier shifts in a hierarchical city-size model*", Regional Science and Urban Economics, 10, 1980 |
| 122. | MYRDAL, G. | *„Economic Theory and Underdeveloped Regions",* London: Duckworth, 1957 |
| 123. | NEWMAN Peter; KENWORTHY Jeffrey | "*Sustainability and Cities*" (Sustenabilitatea şi oraşele mari), 1999, Island Press. |
| 124. | NICHOLS, V. | *„Growth poles: an evaluation of their propulsive effects*", Environment and Planning, 1, 1969 |
| 125. | OLE, B. Jensen, RICHARDSON Tim | "*Making European Space, mobility, power and territorial identity*", Routlege, 2004 |
| 126. | PAPUC, Marilena &Colab. | *„Modele Regionale de Economie*", Curs ASE, 2009 |
| 127. | PARR, J. B. | *„The metropolitan area in its wider setting*", in: A. SUMMERS, P. C. CHESHIRE and L. SENN (Eds) Urban Changes in the United States and in Western Europe: Comparative Analysis and Policy, 2nd edition, 1999 |
| 128. | PASCARU, M. | "*Introducere în sociologia regională*", Ed. ARGONAUT, Cluj-Napoca, 2005 |
| 129. | PAUN, N. | "*Istoria construcţiei europene. Epoca postbelică*", Ed. Fundaţiei pentru Studii Europene, Cluj-Napoca, 1999 |
| 130. | PAUNA, Carmen Beatrice | "*Zonele cu potenţial de dezvoltare economică vectori ai creşterii competitivităţii regionale*", Centrul de Informare şi Documentare Economică, Academia Romană, Biblioteca Ecomică, Vol. 258-259-260, Bucureşti, 2007. |
| 131. | PAUNA, Carmen Beatrice | "*Labor Reallocation in Transitional Economies –Twenty Years Later* ", în Romanian Journal of Economic Forecasting, no.4/2009, Institute of Economic Forecasting, Academia Romană, Biblioteca Ecomică, Bucureşti, 2009. |

132. PERROUX, F. "*Economic space: theory and applications*", Quarterly Journal of Economics, 64, Paris, 1950

133. PERROUX, F. *„L economie du XX eme siecle"*, Paris: Presses Universitaires de France, 1951.

134. POLENSKE, K. R. „*Growth pole theory and strategy reconsidered: domination, linkages and distribution*", in: B. HIGGINS and D. SAVOIE (Eds) Regional economic Development.Essays in Honour of Francois Perroux. Boston: Unwin Hyman, 1988

135. POP, Adrian "Globalization, regionalization and the EU-Japan-U.S.Triad", în Romania Journal of European Affaires, vol.6, no.3, Oct.2006, European Institute of Romania, Bucharest, 2006.

136. POP, L., PANDURU Filofteia, VLAD, Gr. „*Harta sărăciei în România. Metodologia utilizată şi prezentarea rezultatelor*", CASPIS, Bucuresti, 2004

137. POPESCU, Ruxandra Irina "*Urban Dimension of the European Cohesion's Policy"* în The impact of Romania's accession to the EU on regional structures, vol.1, Ed.AETERNITAS, Alba Iulia, 2007

138. PORTER, E. Michael „*Regional Foundations of Competitiveness*", Issues for Wales, 2002

139. PORTER, E. Michael „*Clusters and Competition*", On Competition, HBS Press, 1998.

140. PUSCAS, Vasile „*Teme europene*" Ed. EIKON, Cluj-Napoca, 2008

141. RODRIGUEZ-POSE, Andres "*Socioeconomic restructuring and regional change: Rethinking growth in the European Community*", Economic Geography Oct, Vol. 70: 4, 1994, 325-336.

142. ROMER, P. M. „*Endogenous technical change*", Journal of political economy, April 1990

143. ROSCA, Elisabeta "*Regional Development Programmes in Romania in the Stage of Ante-Accession and Post-Accession*", în The impact of Romania's accesssion to the EU on regional structures, Vol.3, Ed.AETERNITAS, Alba –Iulia, 2007

144. SAGEATA, D.R. *"Modele de regionare politico-administrativă",* Colecţia Geografie Politică, Ed.TOP FORM, Bucureşti, 2004

145. SAMOCHIŞ, B., VINCZE Maria "*Metode de analiză a activităţii unităţilor agricole*", Editura Ceres, Bucureşti, 1977.

146. SANDBERG Krister & MEIJERS E. "*Polycentric development: panacea for regional disparities in European Countries*?", International Institute for Applied Systems Analysis, Austria, în Respons paper presented at the 10 th UNECE Conference on Urban and Regional Research, 22-23 May, Bratislava, 2006.

147. SANDU D. „*Dezvoltare comunitară. Cercetare, practică, ideologie*", Iaşi, POLIROM, 2005

148. SANDU D., VOINEAGU V., PANDURU Filofteia "*Dezvoltarea comunelor din România*", iulie, INS, SAS, 2009, Bucureşti.

149. SCOTT, A.J. & STORPER, M. „*Regions, globalization, development*", Regional Studies, no. 37, 2003, Regional Studies Association, Published By: Routledge, ISSN: 0034-3404

150. SHANZI Ke; FESER, Ed. „*Count on the Growth Pole Strategy for Regional Economic Growth? Spread –Backwash Effects in Greater Central China*" in Regional Studies, Vol.44, no.9, Nov. 2010, Regional Studies Association, Seaford, East Sussex, UK, 2010

151. SPIEZIA, V. *„Mesurer les économies régionales"* , Cahiers statistiques, OECD, Paris, 2004.

152. STORPER, M. „*The Regional World: Territorial Development in a Global Economy*", London: Guilford, 1997

153. SZEMLER, T. „*Economic integration and structural change, the case of Hungarian regions*" in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. and Petrakos, G. , Routledge: Taylor and Francis, 2008

154. TERLOUW, Kees „*Rescaling Regional Identities: Communicating Thick and Thin Regional Identities*", Urban and Regional research centre Utrecht Faculty of Geosciences, Utrecht University, 2009

155. TOLOSA, H., REINER, T. A. „*The economic planning of a system of planned poles*", Economic Geography, 46, 1970

156. TOTEV, S. „*Economic integration and structural change, the case of Bulgarian regions*", in: The Impact of European Integration on Regional Structural Change and Cohesion, (Ed) by Krieger-Boden. C. , Morgenroth, E. and Petrakos, G. , Routledge: Taylor and Francis, 2008

157. TRIGILIA, C. „*Sviluppo senza Autonomia: Effetti Perversi delle Politiche nel Mezzogiorno*", Bologna: Il Mulino, 1992

158. VACAREL, Iulian (Coord.) "*Cunoaşte Romania – Membră a Uniunii Europene*", Ed. Economică, Bucureşti, 2007

159. VANHOUDT, P., *„How productive are capital investments in Europe?"*, European Investment Bank papers (EIB), Papers 5, www.eib.org/efs/papers.htm

MATHÄ, T. &
SMID, B.

160. VANHOVE, N. *„Regional Policy: A European Approach"*, Ashbury, 1987

161. VARGA, Attila; JAROSI, Peter; SEBESTYEN, Tamas "*Geographic Macro and Regional Model for EU Policy Impact Analysis of Intangible Assets and Growth*", 2010/4, Universitas QUINQUEECCLESIENSIS, Budapesta, 2010

162. VICKERMAN, Roger; SPICKERMANN Klaus; WEGENER Michael „*Accessibility and Economic Development in Europe*", Regional Studies 33:1, 1999, 1-15

163. VIESTI, G. „*Come nascono i distretti industriali*", Rome: Laterza, 2000

164. VINCZE Maria "*Dezvoltarea regională şi rurală. Idei şi practici*", Presa Universitară Clujeană, 2000

165. VINCZE Maria; SAMOCHIŞ, B.; STEGĂROIU, D. "*Contibuţii teoretice asupra estimării indicilor de determinaţie şi posibilităţi de aplicare în cercetările economice*", Bucuresti, Revista Statistică, nr.4, 1975.

166. VINCZE Maria; SAMOCHIŞ, B.; STEGĂROIU, D. "*Procedeu pentru măsurarea influenţei factorilor în relaţii de tip funcţional*", Bucureşti, Revista Statistică, nr.1, 1971.

167. WATERHOUT, B.; ZONNEVELD, W.; MEIJERS, E. "*Polycentric development policies in Europe: Overview and Debate*", Built Environment, 31, pp.97-102, 163-173, 2005.

168. WILLIAMSON J. „*Regional inequality and the process of national development: a description of the patterns*", Economic Development and Cultural Change, vol. 13, 1965.

169. Banca Mondială "*Raport asupra dezvoltării mondiale pe anul 2009*", Banca Mondială, Washigton, 2009.

170. Banca Mondială „*World Development Report: Reshaping Economic Geography*", World Bank, WashigtonD.C., 2009

171. Centre for Regional Studies Hungary "*Role of Regions in the Enlarging European Union*", în Discussion Papers, Edited bz GAL Zoltan, Budapesta, 2001

172. Centre for Regional Studies Hungary "*Regional Changes of the Transition in Bulgaria and Hungary*", în Discussion Papers, Edited bz GAL Zoltan, Budapesta, 2002

173. Comisia Europeană „*Cel de al cincilea raport privind coeziunea economică, socială şi teritorială: viitorul politicii de coeziune*" Bruxelles,
COM(2010) 642/3, 2010

174. Comisia Europeană „*Implementation of the Lisbon Strategy Structural Reforms in the context of the European Economic Recovery Plan – a more detailed overview of progress across the EU in the specific macro- and micro-economic as well as the employment areas*", Companion Document, Volume II, COM(2009) 34/2, Bruxelles, ianuarie 2009

175. Comisia Europeană „*Regions 2020 - Globalisation Challenges for European Regions*", Background Document to Commission Staff Working Document Sec(2008)2868 Final - Regions 2020 An Assessment of Future Challenges for EU Regions, Directorate General for Regional Policy, Brussels, Jan., 2009

176. Comisia Europeană „*Cartea verde privind coeziunea teritorială, Transformarea diversităţii teritoriale într-un avantaj",* Comunicarea Comisiei către Parlamentul European, Consiliu, Comitetul Economic şi Social European şi Comitetul Regiunilor, COM(2008) 616 final, Brussels , 6.10.2008

177. Comisia Europeană "*Regions 2020. An Assessment of Future Challenges for EU Regions*", Commission Staff Working Document, Commission of The European Communities, SEC(2008), Brussels, 2008

178. Comisia Europeană „*Communication from the Commission to the European Parliament and the Council : Fifth progress report on economic and social cohesion Growing regions, growing Europe*", COM (2008) 371, 18 june, Brussels, 2008.

179. Comisia Europeană "*Regions 2020. An Assessment of Future Challenges for EU Regions*", Commission Staff Working Document, Commission of The European Communities, SEC(2008), Brussels, 2008

180. Comisia Europeană *An Assessment of Future Challenges for EU Regions. Regions 2020*, Brussels, 2008

181. Comisia Europeană "*Al patrulea Raport privind coeziunea economică şi socială*" (Growing Regions, Growing Europe), mai, Brussels, 2007

182. Comisia Europeană „*ESPON 2013 Programme „European observation network on territorial development and cohesion*", Decizia Comisiei Europene C(2007) 5313, 7 Noiembrie 2007

183. Comisia Europeană *Council Decision of 6 Oct.2006 on Community strategic guidelines on cohesion* (2006/702/EC), Official Journal of the EU, Brussels, 21/10/2006

184. Comisia Europeană „*ESPON 1.1.3„Enlargement of the European Union and the wider European Perspective as regards its Polycentric Spatial Structure Final Report*", Brussels, 2005 (revizuit August 2006),

www.espon.lu

185. Comisia Europeană — *„ESPON Project 1.1.1.The role, specific situation and potentials for urban areas as nodes of polycentric development*", Bruxelles, July 2004

186. Comisia Europeană — "*Critical Dictionnary of Polycentricity*", Brussels, July 2004.

187. Comisia Europeană — "*Second Cohesion Report*" CEC, Brussels 2001.

188. Comisia Europeană — "*European Spatial Development Perspective – ESDP*", Brussels,1999

189. Comisia Europeană — *„Al şaselea raport Periodic asupra Regiunilor*", Brussels, 1999

190. Comisia Europeană — „*Carta Verde. Politica de dezvoltare regională în România*", Guvernul României şi Comisia Europeană, Bucureşti, 1997

191. Comisia Europeană — „*Agenda teritorială a Uniunii Europene*", http://www.mie.ro/_documente/dezvoltare_teritoriala/amenajarea_teritoriului/Agenda_teritoriala.pdf

192. Committee for Spatial Development, CSD — „*Principles for a European Spatial Development Policy*", Leipzig, 4 October 1994', CSD.

193. Ecotec Research & Consulting — „*A Practical Guide to Cluster Development, A Report to the Department of Trade and Industry and the English RDAs*", Ecotec Research & Consulting , 2004

194. Eurostat — "*A revised urban-rural typology*" în Eurostat Regional Yearbook 2010, Luxemburg, 2010

195. INCD pentru Urbanism şi Amenajarea Teritoriului - URBANPROIECT — „*Detalierea obiectivelor Conceptului Strategic de Dezvoltare Teritorială a României 2007-2030 în scheme teritoriale directoare şi pachete de proiecte de relevanţă teritorială regională, inter-regională şi naţională, în vederea accesării fondurilor europene şi a altor fonduri prin propuneri de finanţare integrate*", Contract nr. 354/2008, MDRL, Noiembrie, INCD pentru Urbanism şi Amenajarea Teritoriului - URBANPROIECT, Bucureşti, 2008

196. Institutul European din România — "*Politica de dezvoltare regională*", Seria Micromonografii - Politici Europene, Ed.Institutul European din România, Bucureşti, 2004

197. Ministerul Dezvoltării Regionale şi Locuinţei — "*Conceptul Strategic de Dezvoltare Teritorială a României 2007-2030- CSDTR*", MDRL/MDRT, Bucureşti, 2009

198. Organizaţia Economică pentru Comerţ şi Dezvoltare - OECD — "*Competitive Cities in the Global Economy* " (Competitivitatea oraşelor mari în economia globală), OCDE, Paris, 2007.

199. Universitatea de Arhitectură Ion Mincu, Bucureşti — "*Conceptul Naţional de Dezvoltare Spaţială*", UAUIM - Centrul de Cercetare, Expertiză şi Consultanta, Bucureşti, 2006

200. * * * — „*Legea 351/2001 privind aprobarea Planului de amenajare a teritoriului naţional*", Publicat în Monitorul Oficial nr.408 din 24 iulie 2001, Bucureşti, 2001.

201. * * * — <http://ec.europa.eu/regional_policy/policy/future/barca_en.htm>

202. * * * — <http://dumitru.sandu.googlepages.com/bazededate>

203. * * * — <www.espon.lu>

204. * * * — <www.citypopulation.de>

205. * * * — <http://ec.europa.eu/regional_policy>