THE BABES-BOLYAI UNIVERSITY

DEPARTMENT OF GEOGRAPHY

Phd Thesis

Executive summary

”THE APPLICATIONS OF GROWTH POLE THEORIES AND CONCEPT IN ROMANIA”

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Content

I. Introduction

1.1. Preamble

One of the characteristics of the last decade, especially after the deepening financial crisis that has affected all countries in 2008, is a more profound imbalance between the dwindling budgets of the central and local governments, and an increasing pressure coming from the population and the business environment on them to provide high quality public services. These two contradictory trends have led states, regions and municipalities to borrow more from the financial markets and to conduct major investments in infrastructure, given that they could not appeal to bigger taxes, in the context of an increasingly fierce competition for attracting new residents, tourists, businesses and foreign investments. Thus, these budgets are currently facing unsustainable imbalances in the medium and long term, which requires authorities to address a strategy to concentrate resources on a limited number of investment priorities, capable of generating sustainable economic development, rebalancing the budgets.

Regional development policies must reconcile two conflicting economic goals: reducing the economic disparities and promoting economic growth. Authorities must weigh these two objectives when allocating the public funds at their disposal, all in the context of the existing budgetary constraints. If a certain area proves It can act as regional growth pole with a driving role to the development of its disadvantaged suburbs, the regional development policies should be designed so as to reconcile these two seemingly contradictory objectives. In this case, the periphery may participate indirectly in the economic development of growth poles.

Since the emergence of the concept of growth pole in the sense that it is now known, specifically in the sixth decade of the twentieth century, it has prompted many theoretical and methodological controversies, yet it still is a constant of the regional development policies in many countries. Currently, growth poles can be subscribed to derived regional policy objectives, such as revitalizing the deprived areas, encouraging regional deconcentration, changing the national urban network, obtaining interregional balance, etc.. All these goals are the pillars of regional development, even at the level of supranational policies such as the ones implemented by the E.U.

In Romania, the concerns to ensure balanced regional development are relatively recent, being

strengthened with the accession of the country to the European Union, and still insufficient a European country confronted with huge economic disparities between different regions. An unsustainable concentration of the economic activities in the capital-city, a sharp decline of the isolated rural areas facing depopulation, poor access to public services, that are concentrated in the big cities, etc.. are all indicating major macroeconomic imbalances, which limits the development of the country as a whole.

1.2. Reasons for choosing the research topic:

The reasons for choosing this research topic is complex and is based on a number of objective reasons:

- the paper addresses an interdisciplinary theme, integrating notions and concepts from different research areas: geography, economics, political science, public administration, etc.., by capitalizing on many previous research results;

- The theory of growth poles has been for more than 50 years a topic of great interest for researchers and policy makers at national, regional and local level in countries such as the U.S., France and United Kingdom, but its applicability in the development of rural areas has been rather scarce, especially in Romania;

- The results of the research can be useful for the experts involved in macroeconomic and strategic planning in the context in which the regional and rural development are political priorities of the European Union and of each Member State;

- The thesis was elaborated at the same time with the preparation of the strategic and spatial planning documents at EU, national, regional and local level for the programming period 2014-2020, for each it can provide important inputs.

1.3. Goals and objectives of the paper:

<u>The purpose of the paper:</u>

This paper aims to conduct a detailed examination of the strategies for creating and sustaining the growth poles, which were designed and implemented in the last 50 years, the analysis of

their benefits in the context of regional and rural policy objectives in order to use them in the specific case of Romania. The added value of the scientific work was to develop a methodology for the selection of rural development poles, a benchmark for the researchers and stakeholders involved in the formulation of regional development policies.

Objectives:

1. to provide a systemic and integrated approach to strategic and spatial planning processes at the regional level, based on the theory of growth poles for their implementation in the case of Romania;

2. to devise a methodology for selecting the rural development (growth) poles in Romania and the degree to which these poles exert a positive influence on the surrounding polarized areas (micro-regions)
3. to apply the developed methodology in the form of a case study on the North-West region of Romania;

4. to formulated, based on the research results, recommendations for regional and rural development policies in Romania, but also for further research.

1.4. Defining the theme / scientific problem addressed. Assumptions:

The starting point in choosing the theme/topic of the paper was the assumption that the economic space, although consistent, is differentiated. The recent history of many developed countries confirms that economic growth is not uniform, it appears where there are some natural or man-premises capable of generating knowledge and developing so-called growth poles, as defined by the economic literature. This pole is often characterized by the existence of "industrial engines", linked to other industries in that region. As the industry develops engines, they lead to an increase of the output, employment, the emergence of complementary investments in innovation and the emergence and growth of other economic sectors.

A growth pole is capable of rapid economic growth and driving the economy as a whole. Based on the assumption that economic development depends on the spatial polarization, however, is false. If in the early stages of economic development is normal to have one or a few growth poles, because of the low rate of entrepreneurship outside of these centers, in advanced countries development is less polarized. This phenomenon is due to a more

diversified economic structure, which generates a spatial diffusion of innovation and economic development.

The apparent simplicity of the concept of growth pole and its ability to address the growing problems of the sector, strategic and territorial planning and inter-regional distribution of growth led to its wide acceptance and use in the planning at urban, regional and national level. However, there are some risks to implementing this concept that must be weighed before deciding to put growth poles in the center of economic development strategies. Among them we can mention:

1. The relationship between growth pole and the network of settlements, unevenly developed, existing in a particular region;

2. The success of growth poles depends on the infrastructure and services that the State must put at its disposal;

3. The intersectoral and interregional growth transmission from the pole;

4. The existing difference between the natural, spontaneous, poles and the planned ones, the problems of social integration and their physical planning;

5. The decision upon the location of the pole, its size and the sectoral composition thereof, by the fact that, unlike the original theory, the poles cannot grow around one industry and they do not have an independent existence of the regional context;

6. The establishment of a timeframe for evaluating the success and effects that a growth pole has on the economy and the polycentric development. The range of 15-25 years proposed by some authors is unattractive to politicians, because the electoral cycle is of only 4 years;

7. The need for monitoring and management of the growth poles in order to avoid their negative externalities, as there is no universally accepted model for their governance;

8. Developing a growth pole leads to a significant pressure on space and landscape, as such it should be considered in a manner consistent with what is physically and functionally available to its location and to allow the expansion or reorganization of its activities.

The assumptions considered in this research work can be summarized as follows:

a) local factors are important;

b) decentralization is essential;

c) national policies and the level of centralization are important;

d) regional performance engines are human resources, accessibility and connectivity, environmental quality, the existence of a physical infrastructure and appropriate location of a (public) service sector well developed, competitiveness and innovation, namely good governance.

1.5. Research methods and tools. Data sources:

1. Methods for gathering, recording and processing of data and information:

- Documentation - analysis and synthesis (books, articles, electronic documents, specialized publications, yearbooks, etc..)

- Statistical and comparative analysis.

The processing of statistical series was done with the Excel and SPSS programs.

2. The Benchmarking analysis - to collect good practices;

3. The SWOT Analysis;

4. The long term forecast;

The information sources for the paper consisted of:

- the proposed bibliography - existing publications in university libraries and bookstores;
- data series for the period 1990-2011, available at Eurostat and the National Institute of Statistics;
- the final results of the 2011 General Census of Population and Housing;
- strategic and spatial planning documents at European, national, regional and local level (National Spatial Plans, Regional and County Regional Spatial Plans, different development strategies and plans - sectoral, national, regional, county , micro-regional and local, integrated urban development plans for growth poles);

1.6. Keywords: territorial planning, regional development, rural development, growth poles, settlement network.

II. The current state of knowledge in the field

The central place theory, and thus the concepts of centrality and polycentric, are, since their formulation by Christaller in 1933, some of the most popular (and most heavily disputed) theories of classical research tools for geographers, sociologists, economists, planners, etc. Despite numerous criticisms of this theory, most of them related to the abstractions on which it was built by Christaller (a homogeneous space, ignoring the socio-economic conditions for the development of settlements, the relativity of distances between the consumer and the place of purchase of goods and services), the central place theory, with its various ramifications methodological, remains one of the most valid and efficient methods for the analysis of urban settlement systems or networks, especially in its functional approach (eg, proposed by Dauphine). The arguments in this regard are multiple:

- Centrality is not so much about the position of a settlement, but the existence and consolidation of itsfunctions, which determines its polarization capacity exerted on the neighboring territories; the settlements systems are dynamic organisms (Dauphine);

- The attractiveness of a place is determined by all flows attracted by it, which shows a magnetizing force proportional to the population size, its activities / functions or the level of infrastructure development (Pumain and Offner);

- Central places have to be seen in a regional context and are the result of selective sectoral investment, leading to increased demand (Perroux);

- Centrality has economic, political, social and even symbolic facets (Polese and Monet).

If the centrality theories are widely applied in urban planning since the nineteenth century (Kohl, Reynaud, LaLanne), sitting right at the emergence of some of today's metropolitan areas, their applications in rural development are almost non-existent. This situation has, several explanations:

- Centrality theories have been, since their widespread promotion by Christalle, oriented towards the analysis of urban networks and systems and their effects on the widening urban-rural disparities were less explored until the years 1980-1990, when they were reinforced through the regional development policies of the EU;

- The last century has been influenced by an urbanization trend, which has been a goal politically assumed by most countries, whether democratic or totalitarian. In this context, researchers have turned their attention towards the depth research of urban poles at the expense of phenomena that occurred in rural areas;

- The majority of case studies on theories centrality, polycentrism, growth poles and other similar topics are focused on countries with a high degree of urbanization and a dense network of urban poles (USA, UK, Germany, France etc..), with highly polarized rural areas, in which the emergence and consolidation of rural poles was less feasible;

The widening urban-rural gap makes possible and even necessary the adaptation and application of the central place theories and polycentric approach in the analysis of rural settlement systems, in order to avoid the imbalances that occurred around large urban centers. This goal is particularly relevant in the case of ex-communist countries, where urbanization was not a natural one, based on a long-term planning, but a forced one, that produced demographic, economic, social and even psychological imbalances. In this context, the strategic planning for strengthening natural growth poles and stimulating the emergence of new poles in various regions has become one of the biggest challenges of regional development. Such a model of regional development in antagonistic stages (bias and reverse bias) is, in fact, proposed and developed by Myrdal and Ianoş and Haller. Another argument for the opportunity of applying central place theories in the field of rural development is the continuously increasing interest and efforts for decentralization and regionalization. In this context, as stated also by Hallgeir "the settlement network is the backbone of polycentric territorial system, providing the efficient transfer and uniform development of the entire area." The transfer of responsibilities and resources from central to local level can occur only with the existence of sound mechanisms for transmitting information between the various levels of administrative hierarchy, balanced designed across territories / regions. Moreover, such a system existed in Romania during the interwar period, when, in addition to regions and counties, there last hierarchical level consisted of rural or small urban settlements with central place characteristics, able to polarize the surrounding areas.

Closely related to the issue of polycentrism, this paper also tackles the advantages of neoclassical theories of regional development, in general, and of the growth pole theory, in particular. One of the main features of this theory is that an increase in labor and capital

depends on interregional movements in a dynamic, continuous process. On the other hand, the theory of regional development through growth poles placed the causation theory of Myrdal in spatial context, representing, from this point of view, a key step in linking regional development and territorial planning, also one of the goals of this approach research. Perroux, who is the author of the theory of growth poles, described the space as a network, whose homogeneity is ensured by centripetal forces in line with the traditional theory of networks and flexible specialization. Although promoted by Perroux as a growth model, the growth pole concept has been widely used since the early 1970s in regional development planning and strategies based on this theory have been implemented in at least 28 developed or developing countries.

After the resounding success of 60-80 years, regional development strategies based on growth poles went into obscurity, due to criticism about their effectiveness, particularly regional inequality and spatial selectivity. However, both Perroux and some of his critics (eg. Richardson) admitted that the processes of growth and regional development cannot exist in the absence of polarizing centers transposed in space or not, and that the theory of growth poles cannot be ignored by any regional policy.

From another point of view, most of the criticism about the effectiveness of growth poles is the result of empirical studies conducted in the 60s, on a representative sample and focused exclusively on the issue of industrial development of cities. Another very likely cause of the apparent failure of some development strategies based on growth poles was caused by the non-scientific selection of growth poles (often political), the inconsistency of governments and their desire to achieve outstanding results in a very short span of time. Another cause of dissatisfaction with the effectiveness of this theory may be determined by its incorrect application, for examples the attempts to establish new planned growth poles, in tough environments, at the expense of ignoring natural poles with a favorable background (also in Romania, during the communist regime).

Although Parr identified certain general characteristics of the strategies based on growth poles, in reality they are applied differently, especially in the light of the objectives pursued: national economic growth, regional economic growth, inter-regional equity or rural development. With regard to rural development strategies based on growth poles, which are also the topic of this research work, we should mention that the few authors who have tackled this subject (Stohr and Taylor, Friedmann and Douglas) are characterized by a unanimous

critical approach to top-down (center-periphery) rural development based on industrialization, opting to create "agropolitan" areas, where agriculture remains the dominant sector of the local economy (especially in the context of food safety concerns), accompanied by small industry, protected competition from large corporations. Johnson proposes the creation of a network of small urban centers in rural areas, functioning as centers of agro-food products and the development of small industries, with positive links with the network of urban growth poles.

The paper presents several examples of countries (France, Spain, Italy, Ireland, UK, etc.) who have applied national or regional development strategies based on growth poles, concluding that the effects were different from a country to another, depending on the time, implementation tools, evaluation and monitoring of the success of these policies. Unfortunately, in most cases, the strategies based on growth poles were abandoned reasons too early to assess their effectiveness, mainly for political reasons.

Regarding the link between the growth poles and regional development, we can conclude that a strategy based on such poles is efficient if the aim of the strategy is to develop backward areas or to limit the growth of big urban centers, which would lead to regional imbalances. According to Hansen, the optimum size of a regional urban growth pole is of maximum 250,000 inhabitants and inferior poles of development (eg, with a population of about 30,000 inhabitants) should be based on interlinked economic sectors, to ensure a uniform growth. Antonescu also notes that the main objective of using a strategy based on growth poles in underdeveloped areas is employment growth, by giving priority to investment in infrastructure and business support services, namely education and long-life learning. These authors advocate for focusing public services in growth poles, regarded as a positive factor in regional development.

The interest given by this paper to rural growth poles comes from abandoning ideas of unicentrical development, urban or industrial type pole-intensive and from the general interest in switching from urbanization and industrialization the social, economic and territorial cohesion. As noted, the objectives of the European Union are mostly related to poverty reduction, employment growth, the development of peripheral rural areas and small towns. Also, a regional approach to development based on rural growth poles comes to support the regional development paradigm (also promoted by Friedmann and Douglas), which advocates

for the use of the regional resources for the benefit of its inhabitants, the integrated agro-industrial development, and attention given to the specific needs the region, decentralizing decision-making and strategic planning, civic involvement, etc.. A very relevant example of this is the "agropolitan" strategy promoted by Friedmann, who proposed the creation of dense urban centers in rural areas, up to 100,000 people, around some small towns to polarize the villages around them. Stohr and Todling promoted a similar concept - "Territorial Selective Spatial Closure Model", designed to halt the flow of development resources in deprived areas, aimed at increasing rural employment, based on a bottom-up approach. These two models of rural development, however, were sharply criticized by Hansen, Richardson and Hackenberg, which are underlying the need for public investment in small and medium enterprises and strengthening their relationship with major urban centers. Weitz sees small towns rather as a necessary step in the transition from subsistence agriculture to a market-oriented one, the processing industry and services provided to farmers.

All these theories address the linkages between small towns and adjacent rural areas, both in terms of spatial relationships and in terms of the sector (eg. Linkages between agriculture and industry), highlighting interventions that would be needed to generate the development of certain regions. However, they give little attention to the relationships and networks that operate between different functional groups existing in both environments, handling the existing spatial and sectoral linkages, but also the development of these poles and regions as a whole. Overall, there is some consensus among these theories: urban development depends on the vitality of adjacent rural areas.

A recent and relevant application for rural growth poles theory is the concept of "rural center of excellence" in France. This is a result of the policy initiatives to revitalize areas with over 30,000 inhabitants, which have no city in their proximity. Supporting these areas was done in parallel with the development of so-called "poles of competitiveness", located in major urban centers, both policies serving to promote competitiveness by harnessing local skills and their integration.

Concern for the development of a network of rural growth poles comes in the EU-27, cones in the context in which 91% of its area is covered by rural areas and 56% of its population lives in predominantly or significantly rural areas, which generate about half of aggregate employment in the Community.

These rural areas, however, are characterized by different levels of development, with the existence of underdeveloped rural regions characterized by decline and depopulation and urban rural areas, facing the pressure of urban expansion. However, they gather an impressive amount of various natural, architectural and historical resources. Most rural areas are polarized by small and medium towns, sometimes also by cities, and are marginalized in the decision making process. Moreover, the overall context is characterized by a decline in the agricultural employment and an ageing rural population in remote areas, along with overcrowding cities, leading to social and environmental problems.

In the polycentric development model proposed by the European Spatial Development Perspective - ESDP, only urban territorial entities are identified as poles of development, while the rural development is dependent on the evolution of cities and their ability to deliver growth to surrounding areas. This fact leads to the following negative consequences: uncontrolled development of peri-urban areas, including the mix of residential and economic functions, the appearance of residential neighborhoods with social problems, excessive growth of commuting and migration, increasing disparities between remote rural and peri-urban areas, etc. In the polycentric model based only on large urban poles, social, economic and territorial cohesion occurs difficult and this situation can be explained by the fact that all EU Member States are characterized by the existence of rural areas with strong cultural and social roots.

Therefore, as indicated by the new Territorial Agenda of the European Union in 2020, it is necessary to support socio-cultural, economic and territorial balanced connections between urban centers and rural areas, aimed at exploiting the rural areas potential to contribute to the sustainable development objective. Cohesion in itself, as a primary objective of the EU, can occur only in each region and settlement, in communities that have the ability to pursue their development objectives.

Once they are recognized as development poled, rural areas can act as partners able to respond to the current problems of territorial cohesion. They will be able to accommodate new inhabitants and activities that will be attracted both with their own resources and through networking with urban growth poles, in the framework of common development plans. On 6 October 2011, the European Commission launched for debate the package for the

programming period 2014-2020. The draft regulations are aimed at stimulating growth and employment throughout Europe, by directing EU investment to the objectives of the European Agenda for growth and jobs ("Europe 2020"). The emphasis is on a more limited number of investment priorities, in line with these objectives, which will be the centerpiece of the new partnership agreements that all Member States will conclude with the European Commission. Intense debates are currently taking place in the Member States in order to launch a new generation of cohesion policy programs in 2014. The specific objectives of the European Union related to rural development are:

- to contribute to the territorial cohesion of the European Union (leveling disparities, a dialogue between rural areas and urban centers, the maintenance and improvement of public services, transport and communication infrastructure, etc.);
- strengthening local economies (saving activities and existing jobs and creating new ones, preferably endogenous to combat depopulation, structural unemployment, commuting, etc.).
- encouraging public-private partnerships in a given territory and the elaboration of strategies for development objectives;
- creating and strengthening the networks for knowledge dissemination between rural areas;
- reaffirming multifunctional agriculture, with equal access to services and integrated land use planning;
- the preservation of biodiversity and the environment in a sustainable development perspective;
- fighting climate change, global warming and natural disasters;
- affirming the rural heritage and culture in their diversity;
- citizen involvement in community life through participatory governance methods (bottom-up);
- strengthening the administrative capacity of the local institutions and the local population, especially in terms of generating new initiatives;
- the integration of young people and women in the labor market as employees or self-employed.

Territorial development strategies at EU level are currently implemented through the Structural Funds dedicated to this area:

• The European Fund for Sustainable Rural Development and Territorial Agriculture (EFRDTA) - supporting rural areas;
• The European Regional Development Fund (ERDF);

• The Sustainable Urban Development Fund (EUDF) - supports planning in urban territories;
• The European Social Fund (ESF).

Another tool for regional development undertaken at European level for 2014-2020 is the community-led local development (CLLD), with a key role in liaising urban-rural. These new initiatives are based on Leader-LAGs (Local Action Groups) and involve the development and implementation of integrated and multi-sectoral local development strategies. These actions aim to encourage the involvement of local stakeholders (the bottom-up approach), increasing the capacity of local communities and the integrated use of funds (multi-fond).

Regarding the specific case of Romania, the experience of regional, rural development and spatial planning are recent, linked to the EU accession process, completed in 2007. However, it is necessary to emphasize here that, in the interwar period as well as in the communist one national territorial planning and administration strategies were implemented, even if the purpose and results of these regulations were different. In the interwar period, Romania was characterized by a well-defined hierarchy of settlements, including the existence of rural poles (”plăși”), small towns, county seats, regional capitals, in the context of an urbanization rate of 20%. During the communist period, after a period of forced industrialization and urbanization, a network of big cities was established, relatively homogeneously distributed in the regions. However, in the mid 80s, Romania has abandoned its policy of growth poles culminating with a ban of migration to large cities and rural migration was oriented towards small and medium towns. At the same time, a plan to create agribusiness centers in remote rural areas, together with the destruction of unviable villages was adopted, but it was only partially implemented.

After 1990, concerns for regional development and spatial planning have been sporadic, the proof being the small number of key documents adopted: the National Spatial Plan, The Spatial Development Strategy of Romania for 2030, different county and regional spatial plans, etc. All of them stressed the importance and role of urban centers to ensure a balanced development of the territory and proposed the establishment of new towns in remote rural areas, but their provisions were implemented to a very limited extent (the re-urbanization of 2000 has led to an estimated of 55 new cities, but over half of them do not meet the legal criteria for obtaining this status, and the emergence of several hundred small communes, many unviable because of low population and limited financial resources).
In 2008, after joining the European Union, eight urban growth poles and 13 poles of urban

development were nominated by the Romanian Government, which were financially supported through the European Regional Development Fund, for investments in infrastructure, urban, economic and social infrastructure. So-called "urban centers", namely towns with over 10,000 inhabitants, could also access financial resources, provided to prepare an integrated plan for urban development. Towns of less than 10,000 inhabitants, which representing half of the urban settlements in Romania, could not access funds for integrated urban development and only a small range of specific projects aimed at different educational facilities, health and social assistance, infrastructure, utilities, etc. were designed for them. These very small towns were also able to join the villages around them in Local Action Groups, funded by the National Rural Development Programme, but without having the opportunity to attract substantial funds for development.

In this broad context, this paper proposes a methodology for selecting those settlements, small communities (under 10,000 inhabitants), with urban or rural status, that have the ability to diffuse upward effects on subordinated territorial subsystems with a case study on North West region (Northern Transylvania) in Romania.

Once identified, these settlements, that meet the characteristics of a central place, can be integrated into a polycentric network that will become a vector of the spatial planning strategy implementation and of the strategic development of the areas concerned. In turn, this network of settlements with the status of central place (called "rural development poles - PDR" in this paper) will interact with the growth poles network existing at higher territorial levels (urban growth and development poles, urban centers).

III. Personal contributions to scientific research

Therefore, rural development poles were defined as rural settlements or small towns with a population of less than 10,000 inhabitants, having the ability to diffuse growth among the rural areas they polarize. These poles gather a relatively dense population in the context of the given territory, are easily accessible, have a well-developed physical and housing infrastructure, offer a wide range of public and private services and polarize economically the area where they are located, hosting companies in various fields and generating jobs.

Rural development poles have a number of common characteristics:
- they are outside the area of absolute domination exerted by urban growth poles, urban development poles and urban centers;
- they interact with growth poles of higher level, especially in the economic and the public and private services (higher education, specialized medical services, financial and banking services, the supply of certain goods and services);
- they are based on endogenous resources and of those provided by the polarized rural areas, with a range of local influence of about 10-15 km;
- they are positioned at the end of the territorial synapses connecting the center to the periphery.

From the strategic perspective, the importance of these centers of rural development is the fact that they introduce a new level of the sub-territorial development planning process, namely the micro-regions. This level has an intermediate position between planning at the county level and the local levels between the two territorial strategic planning processes existent in the 2007-2013 programming period, a vacuum that was only partially covered by initiatives supported by EU grants such as the Local Action Groups (LAGs) or the Intercommunity Development Associations (IDA).

The establishment of a methodology for selecting poles Rural Development Poles was made the following number of hypotheses:
a) local factors are important;
b) decentralization is essential;
c) national policies and the level of centralization are important;

d) regional performance engines are human resources, accessibility and connectivity, environmental quality, the existence of a physical infrastructure and appropriate location of a well developed (public) service sector, competitiveness and innovation, namely good governance.

The polarization capacity of settlements was determined based on an aggregate indicator that allows classification using a fair basis for reporting and identifying rural development poles. This indicator - **the Polarization Capacity Index (PCI)** - was determined based on the multi-criteria ranking method, which allow regional rankings, comparing settlements and measuring the gaps between them. Regarding the method of calculation for the PCI, we have opted for the method of the real ranks, one of the mathematical and statistical tools that is the most effective for the multi hierarchy of territorial entities. This method has the following advantages: measures the relative distance between the values registered by the indicator and allows the allocation of a different specific weights for each indicator, based on its relevance to the research topic.

Applying the real ranks methodology in the specific case of this research topic involved the following steps:
- the selection of 25 indicators comprising the polarization capacity index;
- the calculation of the partial real ranks for the 25 selected indicators, taking into account the type of indicator (minimum or maximum,);
- the partial rank aggregation, depending on the specific weight given to each indicator analyzed separately, and calculating the real final rank of each settlement;
- ranking the 420 municipalities in the region covered by the case study based on the value of real final rank (from maximum to minimum).

In what regards, the calculation of the partial real ranks, for each administrative-territorial unit "i" and each indicator 'j' contained in the final real rank, a partial real rank was determined (R_j^i), using different formulas depending on the nature (minimal or maximal) of the indicator 'j' as follows:

a) If the indicators expressed a more favorable situation as it had higher values (such as, for example, the number of employees), the partial real rank was calculated by the formula:

$$R_j^i = n - \frac{a_j^i - a_j^{\min}}{a_j^{\max} - a_j^{\min}}(n-1) \quad , i = 1, 2...\text{n} ; j = 1, 2 ...\text{m}$$

Where,

(n) is the number of administrative-territorial units;
(m) is the number of indicators considered by the analysis

$(a^{max}{}_j)$ is the value of the indicator (j) in the unit with the highest performance

$(a^{min}{}_j)$ is the value of the indicator (j) in the unit with the lowest performance

In this case, the administrative-territorial unit with the highest performance $(a^{max}{}_j)$ will receive the first rank and the one with the minimum performance $(a^{min}{}_j)$ will be ranked with the rank n.

If the indicator was expressing a more favorable situation when it has a smaller value (such as, for example, the number of number of unemployed citizens), the partial rank was calculated by the formula:

$$R_j^i = n - \frac{a_j^{\max} - a_j^i}{a_j^{\max} - a_j^{\min}}(n-1)$$

In this case as well, the administrative-territorial unit with the highest performance $(a^{max}{}_j)$ will receive the first rank and the one with the minimum performance $(a^{min}{}_j)$ will be ranked with the rank n.

Where,

(n) is the number of administrative-territorial units;

(a^{max}_j) is the value of the indicator (j) in the unit with the highest performance

(a^{min}_j) is the value of the indicator (j) in the unit with the lowest performance

The aggregation of the partial ranks (R_j^i) for each indicator 'j' was done in the form of weighted averages. The weight (p_j) given to each indicator 'j' refers to its relative importance for the purposes of this study. The sum of these weights (weight coefficients) is always equal to 100% or 1.

$$\sum_{j=1}^{m} p_j = 100\%$$

Calculating the real final rank (the Polarization Capacity Index - PCI) of each settlement ($i\ (\overline{R_i})$) involved calculating the weighted average of the partial rank:

$$\overline{R_j} = \frac{\sum_{j=1}^{m} R_j^i p_j}{100}, \text{ i = 1,2...n}$$

The 25 indicators comprising the Polarization Capacity Index were grouped into 6 categories:

A. Indicators of accessibility (IA - 15%):

A.1. Access to road network:

B. Indicators of position within the territorial system which includes (IP - 20%):

B.1. Distance (km) to the first city / town with over 30,000 inhabitants

C. Indicators of economic development (IED - 20%):

C.1. Number of businesses/1000 inhabitants.

C.2. Unemployment rate - the number of unemployed /1000 active persons

C.3. Employment rate - The number of employees/1000 inhabitans

C.4. Commuting rate - number of commuters/1000 workers

C.5. The rate of employment in non-agricultural activities - number of persons employed in non-agricultural activities /1000 employed people

D. Indicators of human capital (IHU - 18%):

D.1. The share of skilled labor - Number of qualified workers/1000 active persons

D.2. Share of population with higher education - number of persons with tertiary education/1000 inhabitants

D.3. Migration rate - migration balance/1000 persons residing

D.4. Average rate of natural growth – natural balance/1000 persons residing

D.5. Population age dependency ratio - Number of old (60+) and young people (0-14)/adults (15-59)

D.6. Temporary migration rate - The number of residents temporarily absente/1000 inhabitants

D.7. Labor force renewal rate

D.8. Total population growth rate

D.9. Number of inhabitants

E. Indicators on Public Service (IPS - 15%):

E.1. Share of households connected to the water supply network

E.2. Share of households connected to the sewerage network

E.3. The infant mortality rate

E.4. The number of inhabitants / doctor

E.5. Share of school population

F. Indicators of physical infrastructure (IPI - 12%):

F.1. Number of newly built dwellings

F.2. Average living floor per capita

F.3. Number of hospitals

F.4. Number of high-schools / vocational schools

The case study was carried out on one of the 8 NUTS 2 regions in Romania – namely North West (Northern Transylvania), covering 14.3% of the national territory and 13.1% of the population total (ranking third among the eight regions). The North-West registered socio-

economic and demographic trends similar to those of all the 8 development regions in Romania, namely:

- a continuous decrease of the total population in the last 20 years (7.9% in the period 2002-2011 only);
- low population density (73.3 inhabitants / km ^{3});
- negative natural growth and aging population;
- multi-ethnic and multi-confessional character (about 25% of the population is made up of different ethnic groups - Hungarians, Germans, Roma, Slovaks, etc.);
- positive Internal migration, due to the polarization exhibited by the two major cities - Cluj-Napoca and Oradea - on other areas of development;
- external migration is the growing phenomenon that has come to affect approximately 400,000 people (about 15% of the region);
- the share of population with higher education is around 10% being concentrated in urban centers, while nearly half of the inhabitants have only basic education (primary and secondary);
- over 88% of the workforce in the region is qualified mostly in agriculture and industry, the dominant sectors of the regional economy before 1989;
- the median age of the population is 39 years and slowly increases annually due to higher life expectancy and the reduction of the share of young population, so the dependency ratio reached 125.8;
- the renewal rate of the working age population is 91.7%, which means that in the next 15-20 years the number of active population will decrease;
- Infant mortality rate has dropped considerably in recent years, but remains above the EU -27 average;
- a doctor serves an average number of 338 residents, medical staff being concentrated in major academic centers (Cluj-Napoca, Oradea), while in rural settlements there is a shortage of medical staff, especially in the context of the external migration of specialists;
- school population represents 21.4% of the resident population of the region, but the number of students is decreasing due to low birth rates. However, in the region studied more than 84,000 students, Cluj-Napoca is the second largest university in Romania, after Bucharest;
- the number of dwellings in the region increased by 7.2% in the period 2002-2011, the total living floor increased by 33.7% and the average living floor per person by 46.5%, due to the construction of new housing and expansion / modernization of the existing ones;

- in the region, there are currently 52 hospitals, after 7 units were closed and 12 were merged in 2011;
- in the region currently operate 260 schools and 12 post-secondary schools;
- only 63.8% and respectively 46.1% of households in the region have water supply and sewage facilities, percentages that are above the national average;
- the GDP / capita of the North-West region stands at 43% of the EU-27 average, Northern Transylvania ranking fourth among the eight development regions of Romania. Regarding the structure of GDP, it is dominated by services (53.8%) and industry (26.8%), although the share of agriculture still exceeds the national average (8.6% versus 7.4%);
- the employment rate (64.9%(exceeds the national average and the EU-27 one, but decreased by 20% against 1990. On the other hand, much of the region's population is employed in agriculture (31.6% of total), indicating thus a sub-employment phenomenon;
- the average labor productivity increased 3 times in the last decade, but is still at about 46% of the EU – 27 average, being negatively affected by the very low yield of the agricultural sector;
- the entrepreneurship rate is relatively high (27.2 companies/1000 inhabitants), above the national average, and the number of companies increased even after the 2008 economic crisis. However, growth was visible only for small and very small, while the number of large companies is decreasing;
- the number of jobs in the region declined by 40% since 1990, employees representing only 24.1% of the total population of the region and 90% of them are concentrated in urban areas;
- the unemployment rate in the North West region is of approximately 4%, well below the national average and the EU – 27 one, the main reason being a significant labor migration to other countries;
- the commuting rate of the labor force in the region is around 18.8%, short distances (usually between settlements in metropolitan / peri-urban and urban centers) being preffered;
- although it is a border region with Hungary and Ukraine and the road transport infrastructure has improved in recent years, the region is isolated from the main pan-European corridors crossing Romania.

In the last century, the North-West region has gone through several administrative-territorial reforms that are relevant for the dynamics of the settlements network in order to identify those places that have had and still have a key role in various regional sub-systems, such as talking about historical determinism.

The various models applied to administrative-territorial organization in the region allow us to draw some relevant conclusions:

- Current county seats were developed over time around their administrative functions, having such attributes since the nineteenth century;
- In the region, there are other three urban centers - Dej, Sighet Marmatiei and Turda – that were county seats 50 years ago (in the interwar period), that still retain a significant polarization capacity, being the only cities with more than 30,000 inhabitants (excepting, of course, the county seats) and playing the role of territorial equilibrium centers;
- In the interwar period, sub-county administrative entities called ”plăși” were established, consisting of an urban or rural center and a number of polarized villages. A detailed analysis of the seats of these entities indicates that these settlements have generally retained a polarizing role even during the communist and post-communist period, due to the investments in infrastructure and central symbolic functions. Examples may include the following settlements in the region: Beclean, Ileanda, Gherla, Târgu Lăpuș, Hida, Huedin, Mociu, Aghireșu, Câmpia Turzii, Iara, Prundu Bârgăului, Năsăud, Rodna, Dragomirești, Vișeu de Sus, Ocna Șugatag, Negrești-Oaș, Halmeu, Supuru de Jos, Jibou, Șimleul-Silvaniei, Cehu-Silvaniei, Tășnad, Valea lui Mihai, Aleșd, Beiuș, Ceica, Marghita, Salonta Săcueni, Tileagd, Tinca, and so on;
- Places that did not have traditional administrative functions, being developed during the forced industrialization of the communist period, when they acquired an important polarizing role, generally faced a visible demographic and socio-economic decline. Relevant examples of this kind of settlements are: Dobrești, Popești, Stei, etc.

Overall, in the last 50 years, we can talk about a substantial reduction in the number of localities with political-administrative functions (from 60 in the interwar period to 6, at the moment). The switch to a centralized decision-making processes was a gradual one, by abolishing the seats of the sub-county administrative units and some of the counties, leading to a more pronounced hypertrophy of the network of settlements in the region. However, the symbolic function of the rural settlements and small towns as well as the historical determinism paves the territorial design of functional sub-systems, with the realization of the objectives of decentralization and regionalization or of the administrative-territorial reform (by merging more administrative-territorial units), currently under discussion in Romania, at the central government level.

Regarding the evolution of the network of settlements over the past century, we can remark several stages of urbanization, which led to a tripling of the number of cities in the region, from 14 in 1912 to 43 today. The most important administrative-territorial reform was conducted in 1968, when six communities in the region have received the urban status, respectively during 2000-2005, when other 8 villages become towns. With regard to this last wave of urbanization, we can rather discuss about a process of re-urbanization, considering the fact that the urban population of the region declined by 20% since 1990. The population growth rate recorded a peak in the 60-70s amid a rapid industrialization process, followed by a rebound in the 80s, in the context of an economic crisis and of reduced fertility, and administrative measures (blocking major cities) which continued until the early 90s. After 1990, as indicated previously, the urban population declined significantly with multiple causes:

- a massive migration of ethnic groups (Hungarians, Germans) from some urban areas of the region, between 1990-1992;
- the shrinking urban economies, reflected in the closure of mining units, industrial companies, etc. and increasing unemployment;
- the pressure of urban housing and the increase in the cost of living (utilities, transportation, etc..), which has led many townspeople to move to rural areas;
- reversing the dominant migration flows, which led to the migration of people from urban to rural or metropolitan areas or to their home towns, including the practice of subsistence agriculture;
- the amplification of external migration of labor force, especially from the northern part of the region;
- declining birth rates and an aging population.

In these circumstances, the process of re-urbanization of the 2000s did not lead to an increased urbanization, which is maintained at 51-52% of the total population, below the national and European averages, which makes the region mostly rural, according to OECD methodology.

The average size of a city in the region is of about 30,000 inhabitants, below the national average and the urban network is strongly hypertrophied, especially in Cluj and Bihor, counties where the population of the county seat is 5-7 times higher than of any other city. On

the other hand, the urban population tends to concentrate in small cities and towns, in the context in which 20 towns (46.5% of the total) have less than 10,000 inhabitants (below the minimum threshold for an urban settlement required by the Territory Arrangement Plan National), in the context of the continuous decrease of the population and of the process of re-urbanization of the 2000s. Given that in many EU countries (UK, Sweden, etc..) settlements with less than 10,000 inhabitants are considered urban, we have chosen to include in the selection area of rural development poles also these very small towns which often got the urban status despite the legal criteria, as a result of intense political lobbying. Unfortunately, in most cases, acquiring urban status brought many disadvantages, among which we can mention: raising local taxes, lack of access to EU funds for rural development, increasing the administrative burden, etc.. During the 2007-2013 programming period, very small towns could not access funds for integrated urban development through the European Regional Development Fund (a threshold of 10,000 inhabitants).

Another aspect worth noted is that, during 2002-2011, the largest population decline was recorded in medium-sized cities (50,000 to 99,999 inhabitants), followed by small ones (20000-49999 residents), many with a strong industrial basis in the communist period, which was restructured heavily in the post-revolutionary period. On the other hand, large cities (Cluj-Napoca) and very small towns (under 10,000 population) showed a much less pronounced negative dynamic, but the causes are still different: the development of the service sector, namely, balancing the phenomenon of suburbanization.

The network of rural settlements has also undergone substantial changes over the past 100 years. Thus, the number of communes was reduced from 1713 in 1930, to 384 in 1989, reaching 403 at present, due to various administrative territorial reforms. If in 1930 the communes had an average of 1-2 villages and were organized into the sub-county administrative units (the so called ”plăși”), consisting of 15-60 common, today the average number of villages per commune reached 4.5, the average population is of around 3000 inhabitants and the sub-regional administrative structures have been dismantled since the '60s. However, the average size of a village reduced in this range from 986 to 669 people (-28%), due to rural-urban migration, which made more communes feckless as independent administrative-territorial units. We have to mention here that in 7% of the total communes in the region the population decreased by over 50%, just in the last 35 years, which puts into question their existence in the medium term. A territorial analysis further shows that these

communes are characterized by a relative isolation from any major urban center, a factor that seems to have had a strong influence on the depopulation phenomenon. Around 60% of the communes most affected by depopulation and hypertrophy are concentrated in the Cluj County, where the network of settlement is absolutely dominated by the presence of the second largest urban center of the country - Cluj-Napoca.

On the other hand, 7% of the communes in the region faced a growth of population. These settlements are either located around major urban centers and influenced by the deepening of sub-urbanization, or benefiting from growth natural (most with a good representation of ethnic groups that have a traditional high fertility rate - Roma, Ukrainians, etc.).

Over 40% of the rural population of the region lives now in communes with a population of less than 3,000 inhabitants, which does not represent a critical mass for certain public or private services. For comparison, this figure was only 18% in 1977.

Regarding at the network of polarization centers and areas in the region, at present we can speak of the existence of only 9 urban centers with more than 30,000 inhabitants, threshold considered generally minimal to discuss about a polarizing center of regional or county importance. These cities play a leading role in the spatial interactions of the North-West Regions, by actually being the beneficiaries of human, material, informational flows.

By applying a mathematical model of spatial interaction, we can conclude that in the region there are the following polarizing centers:
- a city with complex services of regional significance (Cluj-Napoca);
- a city with complex services of sub-regional importance (Oradea);
- two cities with mixed services of sub-regional importance (Baia Mare and Satu Mare);
- four cities with mixed services of county significance (Bistrița, Zalău, Turda and Sighetu Marmației).

The analysis of the regional polarization areas indicated the existence of a direct relationship between the intensity of urban polarization and population density. The highly polarized areas, located along major territorial synapses (development corridors, bearing intense flows) or those in close proximity to these urban settlements are densely populated recording less pronounced population declines or even a slight increase. In general, these areas are

characterized by intense commuting, but show a balanced migration balance. On the other hand, remote areas, far from the urban centers, are less populated, are facing a massive population decline recorded amid the permanent migration of the population, while commuting is hampered. The revitalization of these areas is possible only through investment in the rural development poles identified by this paper, which can act as centers of local equilibrium. Therefore, one of the criteria that we have considered in the selection of these areas is the distance from the nearest town with more than 30.000 inhabitants.

At the level of the North-West region, we can identify some areas with no polarization centers, confronted with a significant socio-economic decline: the southern and eastern part of the Bistrița- Năsăud County, the southern part of Satu-Mare, the mountain area, the northern and eastern part of the Cluj County, in the southern part of the Bihor County, as well as in the southern and south-eastern part of the Sălaj County, etc..

On the other hand, excepting the Territorial Planning Units stated in the 2007-2013 North-West Development Plan, we have not identified the existence of background studies on the development of rural poles or polarization centers in rural areas.

Regarding the areas that were the most affected by the restructuring of local economies after 1990, they were generally former mining areas, areas with heavy industries, processing units of natural resources (construction materials, chemical industry, glass and metal factories, etc.). Most of these mining areas are located in mountainous, inaccessible areas, being less attractive to investors, but with a significant touristic potential. Most relevant examples of this are kind of areas are: Ștei-Nucet; Borod-Șuncuiuș-Dobrești-Vadu Crișului, Popești-Derna-Aleșd (Bihor county) Ip, Hida-Surduc-Jibou-Bălan-Chieșd-Șărmășag-Bobota (County Sălaj), Baia-Mare, Borșa-Vișeu (Maramureș County) and Rodna (Bistrița-Năsăud County). Since 1998, these area got the status of ”less-favoured areas”, which allowed providing fiscal facilities for investors who have developed businesses in these areas, with a relatively successful of the program. Regarding the mono-industrial areas in the North-West Region, they have gone along with mining and diversifying economic activity, existing at the moment only where foreign or domestic investment occurred in small towns without a diversified economy and no industrial tradition: Fărcaşa (electrical components), Bobota, Foieni and Săcădat (furniture), Păuleşti and Valea Vinului (electronic components), Valea lui Mihjai

(footwear), Rieni and Vetiş (food), etc. - all with over 50% of the total jobs provided by a single company.

In this region we can also discuss about a certain functional specialization of the villages (CUGUAT-Tigris), with the following types:

a) densely populated rural areas with agriculture based on individual micro-farms;
b) rural areas with a concentrated habitat and an agricultural specialization trend;
c) rural areas relatively well-equipped and with a diversified rural economy;
d) rural areas located in difficult geographical areas with aging population and a poor agricultural economy;
e) rural areas with subsistence agricultural economy and aging population;
f) less populated rural areas with agricultural economics and trade associations;
g) plain rural areas, sparsely populated and equipped, with an associative economy.

According to the survey called Romanian Poverty Map, the poverty rate in the North-West regions is the lowest in the country, but there are major differences between urban and rural areas. Thus, in the region, a number of 25 communes have a poverty rate of over 40% and are considered deprived. Most of these settlements are located in remote areas, far from major urban centers.

According to a study conducted by the European Institute of Romania, about 80% of the total surface of the region is covered by rural disadvantaged areas - mountain areas, significantly disabled and disadvantaged rural areas with specific handicaps. These areas have a number of characteristics which lead to a lower agricultural productivity, exposed to natural hazards.

Around 75% economic activity of the North-West region is concentrated in 30 urban and rural settlements. Noteworthy is the dominance of the 6 county seats, which focus together 58.5% of the number of employees and 64.3% of total number of businesses in the region. Only Cluj-Napoca hosts about one third of the companies and one-fifth of the total workforce. We can also discuss about an excessive concentration of the economic activity in the urban areas, given that, of the 30 economic poles identified only four have the status of rural settlement (Florești, Sânmartin, Borș, Fărcașa), and even these communes are placed in close proximity to a major urban center, which allowed them to enjoy the economic benefits of relocation from city centers and of investments in new production facilities and service sector

In terms of functional specialization, the research has identified specialization centers with a predominantly service profile (Cluj-Napoca, Oradea, Sânmartin, Dej, Floreşti, etc.) There are also some with a predominantly industrial profile (Marghita, Valea lui Mihai, Ștei, Câmpia Turzii, Gherla Fărcaşa, etc.) and with a mixed profile, industry and services, where we find most of the other urban centers. We have also observed a trend of sectoral functional specialization around particular industries (eg. leather and footwear - Valea lui Mihai, Marghita Aleşd, food and beverages - Stei, electrical equipment industries – Bistrița, Fărcaşa; electronics – Borș, furniture – Salonta, Gherla Sighetu-Marmatiei, Târgu Lăpuș, plastics - Năsăud, building materials - Turda, metallurgy - Beclean Câmpia Turzii, Zalău, automotive - Satu-Mare, Dej, Carei etc.). Around these settlements there is therefore potential for the establishment of industrial clusters, even though we should also consider the risks associated with a trend towards a mono-industrial profile, vulnerable to certain market dynamics.

As can be seen, many economic centers of the North-West region are specialized in low value-added industries, thus explaining the low wages. These industries exploit cheap labor force or local natural resources, most manufactured products being targeted to external markets.

As concerns the associative structures of the settlements in the North-West region, they are still few and appeared rather to capitalize on some opportunities for European funding, considering that their existence is conditional on the implementation of the EU-funded projects and that they do not have their own administrative and planning capacity. In this context, in the case of metropolitan areas, growth poles (eg. Cluj-Napoca) were even forced to start establishing their metropolitan areas, in order to attract the funding necessary to implement the integrated urban development plans. Consequently, we can speak today of the existence of four related metropolitan associations: Cluj-Napoca, Oradea, Baia Mare and Satu Mare.

In the rural areas, the associative structures took the form of Local Action Groups financially supported by the LEADER Programme, under the National Rural Development Programme. The money was spent for the development of joint strategies and the implementation of common projects. A significant number of Intercommunity Development Associations (IDAs) was also established, with the aim of accessing EU-grants for integrated development of rural

infrastructure. As the associative structures in urban areas, these associations generally do not have their own financial and human resources, and their existence is often equal to the project or projects for which they were created. In even fewer cases, to these associations have been delegated powers of the local authorities, such as sanitation, provision of public services, etc.

Returning to the purpose of the thesis, which is to select those settlements that have the potential to act as rural development poles (polarizing centers at sub-regional, integrated and coherent with the network of urban poles supported by the European Regional Development Fund), after calculating the final real ranks and analyzing the list of the first 50 communities according to their polarization capacity, we can draw the following conclusions:

- Development tends to concentrate around major urban centers and along the main road and rail corridors;
- Counties with a high degree of urbanization and metropolitan urban poles, namely Cluj, do not have well defined rural polarization centers, the entire rural area is strongly polarized by the county seat;
- Many of the interwar sub-county seats continue to play an important role in the network of settlements (eg. Tileagd, Prundu-Bârgăului, Huedin, Năsăud, Ileanda, Valea lui Mihai, Tăşnad, Supur, etc.), despite the loss of political and administrative attributes in the communist period;
- The rural areas in a deep demographic, social and economic decline (eg. The Transylvanian Plain, the Cluj and Dej Hills, the Almaș and Sălaj hills, the so-called ”Codrului Country”, the Apuseni Mountains) have no strong rural polarizing centers.

Furthermore, the administrative units with the greatest polarization capacity (according to their final rank) can be divided into 3 categories:

- Very small cities (under 10,000 inhabitants) - occurring at different stages of urbanization (in the interwar period, the communist era or after 2000), some with a predominantly rural aspect and facing a significant demographic and economic decline after 1989, continue to act as polarization centers at the micro-regional level mostly due to their relatively complex functions compared with the surrounding rural areas (economic units, educational services, health and social assistance, transportation, and so on);
- Settlements situated in metropolitan areas – both with urban and rural status, they have developed in the recent years, due to the phenomenon of sub-urbanization, which has led to the assertion of residential and even economic functions. However, these settlements do not

work as polarizing centers themselves, but only borrow some of the functions of the city in close proximity;

- Autonomous rural development poles – generally play a traditional polarizing function, relatively independent from different urban centers, which are situated at long distances. Some of these settlements have even met politico-administrative functions in the interwar period (district seat). Although the role played by them in the territory was reduced during the communist period, due to the forced urbanization policy, these villages have maintained or have developed their role at micro-regional level.

Therefore, we have chosen to select those autonomous rural development poles, both with urban and rural status at present, excluding the ones that are placed in metropolitan areas, depending of the transfer of different functions from the neighbored cities. In order to ensure a balanced development of rural areas in the region, one growth pole was selected for every area with 40,000 inhabitants, considered an average area of optimal polarization for the services such polarizing center would offer (eg. hospital, high school, financial administration, etc.), resulting a list of 33 rural poles in the North-West region.

Finally, it should be noted that the settlement network is a dynamic own, as shown in this thesis, therefore the hierarchy of settlements only shows a photo for the reference period (2011-2012) and may undergo some significant changes in a relevant time horizon (eg 10 years). In this context, this analysis should be revised periodically, based on the same methodology, in order to allow the comparability of results in time, but also to capture the real dynamics of the regional settlement network.

IV. Recommendations and suggestions for future research extension

The recommendations and suggestions derived from the research undertaken for the support of selected rural development poles in Romania, as well as for deepening the research work on this topic, are:

1. Focusing the public investment (state budget and European funds) in infrastructure in the selected rural development poles in order to rationalize and streamline public spending and maximize their impact in the context of increasing budgetary constraints. The following types of investments are foreseen:

- Educational infrastructure (construction / extension / rehabilitation / modernization / equipping of pre-university education, construction of school campuses, school sport infrastructure, etc.).
- Sanitary infrastructure (construction / extension / rehabilitation / modernization / equipping of health facilities with beds - hospitals, medical-social centers, health centers, outpatient units, permanently centers, medical analysis laboratories, ambulance stations, etc.).
- Cultural and sporting infrastructure (construction / extension / rehabilitation / modernization / equipping of houses of culture, cultural centers, libraries, museums and exhibitions, stadiums and multifunctional sports facilities, swimming pools, etc.).
- Social infrastructure (construction / extension / rehabilitation / modernization / equipping of residential and day centers for the elderly, children or people with disabilities and vulnerable groups exposed to social exclusion).

These types of facilities are generally used for public services and are only effective in a context where there is a critical mass of citizens who serve them. The lack of a strategic approach to rural development in the post-revolutionary government has made investments of this type to be either unnecessary (rehabilitated schools were subsequently closed due to the small number of students), ineffective (multifunctional sports infrastructures in communes with a very aged population) or redundant (establishment of permanent medical centers in neighboring villages). By focusing these investments in rural development poles that serve a rural area of 30000-40000 inhabitants, they pave coherent and effective interventions, correlated with a stronger micro-regional impact.

2. Linking the administrative-territorial reform with the configuration of the rural

development poles network, at regional level. The current demographic trend, characterized by a continuous decrease of the average population of the communes, and the pressure to reduce state spending with the general and administrative apparatus, in particular, will lead to the need for an administrative-territorial reform in Romania. This reform will be, perhaps, seconded by a regionalization process, resulting in the establishment of regions with legal status, governance structures and financial resources, as well as that of decentralization, which will be the gradual transfer of powers from central to local level. The administrative-territorial reform will likely choose (given the experience of other countries) to merge more communes until a minimum threshold of population (eg 3-5000 people) is reached. In this context, it is important that the new administrative-territorial organization takes into account the configuration of the rural development poles and of the territorial synapses configuration, to avoid, for example, merging two or more communes with divergent priorities, polarized by two different poles. Furthermore, the criteria used to select rural development poles can be used to the smaller scale, for the objective selection of the commune that will absorb the other one(s).

3. Stimulating the creation of business support structures of micro-regional interest in rural development poles. The purpose of these structures is to ensure employment growth, the stabilization of local labor and to integrate different suppliers in the value chain. It is recommended for such business structures to be linked with the specialization of the local economies, taking into account the available resources and the skills of the local labor force.

The following types of business-support infrastructures are envisaged:
- Agro-industrial parks - which provide potential investors with land or buildings (with all necessary utilities) for processing local resources (eg. Factories for processing cereals, industrial crops, vegetables, milk, meat, wood etc.). Complementary, the investors accommodated in these parks could benefit from various tax incentives for the creation of jobs and investment, in accordance with the existing laws at the national and European level, as well as comprehensive business services. The creation of such parks will also involve the adaptation of education and training programs provided by high-schools and vocational schools to the profile of these parks, right from the planning stage;
- Logistics and marketing centers for agricultural products - complex and integrated facilities, including functions of collecting agricultural products, storage, primary processing (eg. sorting, packaging, labeling), distribution and even marketing. Such centers are suitable for all

kinds of agricultural products, including berries, mushrooms, etc.. It is recommended to complement these centers by stimulating the establishment of producer groups in the polarized area, to be drawn into the ownership or management of such structures;

- Food markets (retail and en-gross) - aimed to eliminate the authoritarian dominance of intermediaries (large distribution and retail chains) and designed to ensure the sale of food products from the polarized area, in favorable terms for both customer and farm. In addition, these units may have outlets including facilities (food and non-food) for local clients, as well as a number of service units for the local citizens, that can be only found in the urban area at the moment (eg. banking, service for different articles, etc..), resulting in reduced efforts to purchase them.

- Business incubators - are designed to assist small entrepreneurs from the area polarized in different areas (production, services). They provide temporary housing services (1-3 years) for start-ups at a level of rents well below the market prices, assistance and advice for starting and developing local business initiatives. The hosted companies would benefit, in addition to these basic services, also from tax incentives and grants for investments and job creation, focusing on encouraging initiatives of young people with higher education. As a first step, we recommend carrying out feasibility studies for the establishment of solid incubators, taking into account the entrepreneurship rate in rural areas is still very low and the demand for such services may be too low to ensure their efficiency.

4. Support the establishment of associative structures around the selected rural development poles - once established, these structures of 5-15 associate members each (depending on the size of the polarized area), should lead to the formation of functional micro-regions, similar to the ones existing in the interwar period, or even to the districts created at the beginning of the communist period. These associations would be the last link of the decentralization process and would have functional management structure and representatives chosen by the associates, as well as their own executive apparatus (consisting of different types of specialists). Their financial resources will be provided from contributions of the associated, grants or support from the state and regional budget. In terms of attributions, it is preferable for these associations to benefit from the transfer of some local powers. For example, the range of activities may include: strategic planning, urban and spatial planning, waste management, provision of public services (lighting, drainage, water, gas) project management, public transport, etc..

5. Investments in improving the regional accessibility and mobility - would involve prioritizing investment in the regional transport infrastructure (especially road), by paying attention to those routes linking urban growth poles, urban development poles , urban centers and rural development poles. In this way, the flow of people, goods, services and information should be facilitated over the fastest and most relevant territorial synapses, ensuring a balanced development of the territory. These roads would become roads of regional importance, under the regional (assuming the completion of the regionalization process) or county authority, while the responsibility for developing local transport infrastructure (the links between rural development poles and their polarization areas) would fall under the responsibility of the intercommunity development associations established at micro-regional level.

6. The adaptation of the education and training programs to the micro-regional economic profile - with three dimensions:

- In terms of infrastructure – it would require the construction or improvement (based on existing abandoned infrastructure) of micro-regional campuses in the selected rural development poles that provide educational services (school, vocational school), respectively continuous training (training courses, assessments of skills) for adults. They would also provide accommodation services, food, counseling and career guidance, benefiting from workshops, laboratories and modern sports infrastructure (sports grounds, swimming pools, etc.).
- In terms of curriculum - providing greater flexibility / independence to individual schools to tailor the curricula to the specificity of the local economy. Also, the annual organization of traineeships and internships in local enterprises, under the guidance of qualified tutors, would be useful in this respect;
- Continuous training for teachers in schools / vocational schools from the rural development poles, including their approval as trainers for the provision of continuing education for adults.

7. The provision of an investment priority dedicated to the implementation of integrated rural development plans (similar to the one existing for urban growth poles) in the 2014-2020 National Rural Development Programme 2014-2020 - addressed solely to rural development poles. This would involve a requirement each rural development pole that wants to be the recipient of a grant of this type (which can go up to 3-5 million / pole) to elaborate a plan for

integrated rural development (similar to the urban integrated plans). This plan will have to establish a short list of priority projects of the pole as well as of the polarized area (micro-region), comprising rural infrastructure and transport, social and economic initiatives. This proposal comes in the context in which, in the current programming period, there was no strategic selection of integrated rural development projects, which led to unbalanced territorial distribution of these investments (several neighboring villages that benefited all from such funding or areas of over 1,000 km ² without any such public investment). In addition, many rural areas have already prepared such integrated projects and are waiting now for a suitable source of funding.

8. Developing Inter-communal Spatial Plans - covering the entire territory of the polarized area (micro-regional) and developed in conjunction with the Rural Integrated Development Plans proposed in item 7. The role of such landscaping documentations are the clear demarcation of territorial functions in the polarization area of each rural development pole, in order to ensure a coherent development (on the model of center-hinterland), and it is a necessary step in determining the need for investment in infrastructure and services.

9. The update of the General Urban for the rural development plans - to ensure the integration of specific functions of a central place in the local spatial philosophy. Thus, these planning documents should provide and regulate the location of economic units (industrial parks, food markets, etc..), educational infrastructure (school campus), extending various utility networks, the reconfiguration of the transport infrastructure in close correlation with the Inter-communal Spatial Plan and the Rural Integrated Development Plan.

10. Achieving integrated actions of territorial marketing, at micro-regional level – by covering the brand development and support for each micro-region (eg. the Bârgaielor Valley, the Oaș Country, the Transylvanian Plain, etc..), achieving a coherent strategy to promote these areas (a consolidated calendar of events, the development of promotional materials, media campaigns, etc..), and establishing micro-regional tourist information centers, designing trails in the area, etc.. In the current programming period, there were many publicly funded accommodation (guesthouses) units, tourist information centers, tourist infrastructures (including the rehabilitation of heritage objectives) promotion projects, etc.. in several villages in the region, but they are not correlated and have little chance of success in the

medium and long term. Therefore, an integrated approach is required in the field of promotion and tourism development.

Regarding the funding sources necessary to implement these 10 recommendations for supporting rural development poles in Romania, they are complex and include:
- Funds allocated from local budgets - these include expenditures for the establishment and operation of associative structures, including co-funding for grant projects;
- Funding from the county and/or regional budgets – for the development of regional transport infrastructure, development of local and country planning documentation;
- Funds allocated from the state budget - for investments in various types of infrastructure (eg. School campuses, permanent medical centers, rescue stations, etc..), co-funding for grant projects;
- Grants from the 2014-2020 National Rural Development Programme – for rural infrastructure development (including integrated projects), tourism infrastructure development, tourism promotion, development strategies and development plans, business support structures, and so on;
- Grants from the European Social Fund – the Operational Programme "Human Capital" - to invest in education and professional training;

Complementary sources of funding are also envisaged, such as private funds (eg, for conducting business support structures), public-private partnerships, etc..

We have to add here that a rural development model based on growth poles, such as the one proposed by this thesis, does not exclude new investments or the continuation of the existing ones in other communities from the polarized area, but rather suggests a hierarchical approach in which each rural settlement has a minimum set of public functions and services (kindergarten, school, family physician office, city hall, police station, etc..), absolutely required for any community, and the transfer of the other ones (for which there is a critical mass of people served or sufficient investment resources) in a polarizing center, easily accessible, where these functions are sustainable.

In my view, this research work stresses new research topics on the scope and application of the concept of growth pole theory in the regional and rural development, which will also be detailed in my further research work, and provides a set of scientific and empirical arguments

for the current debate on the decentralization processes, on regionalization and on the administrative-territorial reform, while responding to concerns from the European Union to streamline the act of public governance and maximizing the impact of public spending. Also, a number of conclusions and recommendations may be relevant for the strategic planning process (including the configuration of the operational programs), at the national, regional and local levels.

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