

# Analysis of the Workforce in Macroregion Two and Macroregion Four

Bogdan Chiripuci<sup>1</sup>  
Albert Scricciu<sup>2</sup>

## *Abstract*

*The economic development that preceded the economic crisis of 2008 has caused a lack of staff on the labor market, in particular of specialists in certain key areas, in all developed countries. The acute shortage of skilled staff at European level is also found among Romania, where companies play an important role in defining society at local and regional level. Romania has about 19 million people, of whom only 5 million are full-time employees, and the labor market estimates a shortage of more than 1 million employees in 2021, according to a study by audit and consulting firm PwC. In this respect, it was considered appropriate to analyze two development macroregions in Romania, which register smallest, respectively the and largest population in terms of national level. The general objective of the research is to identify the macroregion that has a greater potential for making private and even public investments. In this way, the method of multicriteria analysis at the level of applied methodology was used, so that current and future entrepreneurs can observe a clear delimitation of the two opposite areas of the country, regarding the existing potential on the labor market. Being positioned in opposite parts of the country, Macroregion Two and Macroregion Four each have certain specific economic characteristics, which can lead to a sustainable macroregional strategy for on the stability and prosperity of the labor market.*

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## **Introduction**

In recent years, Romania has continued to lose hundreds of thousands of Romanians able to work through external migration, and employers had to find solutions at this problem by different methods. The industry field was most seriously affected, as the lack of skilled workers led entrepreneurs even to be unable to honor orders from strategic customers abroad.

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<sup>1</sup> Bucharest University of Economic Studies, Bucharest, Romania; bogdan.chiripuci@gmail.com.

<sup>2</sup> National Institute of Marine Geology and Geoecology (GeoEcoMar), Bucharest, Romania; albert.scricciu@geoecomar.ro.

The aging population, the lack of skilled young people in certain professional fields and, perhaps most seriously, the migration to Western European countries, have led entrepreneurs in Romania to stop business development or even close their business because of labor shortages. A recent important step in the development of the economy was the period since the end of the economic crisis in 2008, which generated a need for labor, especially those specialized in certain areas, both in Romania and in all developed countries. At national level, the situation is worse, as the able-bodied population prefers to migrate to countries such as Germany, the United Kingdom, France or the Netherlands (countries which in turn face a severe shortage of labor). The last 15-20 years represent the greatest exodus of the population in the history of modern Romania, and the most acute labor shortage, which jeopardizes the economic development of the country. This aspect is also confirmed by the HR specialist, Oana Botolan Datk, managing partner of Consulteam South East Europe, who mentions that Romania is second in the world, after Japan, at the lack of specialized staff on labor market.

### **Literature review**

In the 21st century, there are major changes in which social and economic processes intertwined and areas adjacent to large cities become strategic hubs, where public policy plays an important role in local development. (Yigitcanlar, T., et al., 2008).

Local entrepreneurs claim that they have difficulty finding employees for clearly defined jobs, as they are willing to offer the pecuniary remuneration that candidates request, and add various benefits such as meal vouchers, free transport or accommodation. Furthermore, entrepreneurs come with the solution to ensure the transfer of employees who are a few tens or even up to 200 km away from the factory, a solution implemented for several years. In the last period, the employers have begun relocating thousands of people from moldovan and wallachian villages to the heavily industrialized areas in the center and west of the country through temporary employment agencies.

Moreover, due to insufficient staff, some commercial companies concluded cooperation contracts with certain prisons: for example, in 2018, more than 2.500 detainees carried out various lucrative actions, which were remunerated, according to the data of the National Administration of Penitentiaries. The employers' organizations in Romania also claim that the shortage of labor force, if it exceeds one million people, as estimated, will soon cause a new economic crisis.

In this way, cities are seen as drivers of the economy, but also as places of social exclusion, where urban decision-makers face problems of prosperity, while addressing a potential increase in social inequality. Increasing revenue and spatial expansion in urban regions highlights the current labor market gap (Bramwell, 2012). Metropolitan governance, both in academic literature and in practice, gives the impression of an endless story. The governance of metropolitan regions continues to be of overwhelming interest in this respect for practitioners and scientists (scholars – researchers, scientists) around the world. In recent decades, new elements have entered the debate, in particular resizing and new regionalism. However, the problems related to the effective governance of what are generally known as urban regions remain largely unresolved (Fürst, D., 2004). Empirical and theoretical literature is intended to examine the use by various social groups of informal sources provided by relatives, friends and acquaintances during both job search and its consequences on the labor market. It also addresses the role of the network's size and structure, the facilities of the contacts' resources and the nature of the links between the contacts to explain the differences in the effects of the workplace information networks.

In this respect, sociology literature in the information networks on jobs offers an economic perspective on such sociological concepts, such as weak or strong links, interactions, distance from structural holes, etc. This is the situation in which individuals obtain information related to jobs through a given social structure and information networks having as specificity endogenous jobs, which are social networks resulting from the uncoordinated actions of individuals. Physical and social rapprochement and exchange of information are also a matter of interest in the context of recent social interactions and literature with neighborhood effects.

In addition, in order to organize suggestions for future research and for examining income inequality, it is considered necessary to create a model integrating job information networks, in which interactions occur in the frequencies of the business cycle, with the dynamics of human capital formation, which include the common effects of human parenting capital, neighborhood and community and are set in life cycle frequencies (Ioanides, Y.M. and Datcher Louy, L., 2004).

Community-based regionalism is starting to offer a new vision, measures for "smart growth" and other attempts to connect suburbs and cities, starting to put their mark on the political and analytical scene. In this situation, metropolitan areas need to reduce poverty in order to increase from a point of view socially, and people on low incomes need to build regional ties by increasing equity, to escape the poverty (Pastor, M., 2000). More over, two topical and interlinked topics have dominated much of the recent literature on local participation and

governance: The spatial, dynamic and time-frame of the "neoliberalization" of local governance; the relationship between democracy and local governance, in particular "meaning, potential and traps of "participation". The latter has been identified with recent research problems arising from a symposium held in the early 21st century, where a number of questions have been raised: distinctions and overlaps between participation, democratization and social movements in cities; representative and participatory frictions in local democracy; and instruments for deepening democratic engagement with poor and marginalized communities in the cities of the north and the global south. It has also been noted that there is a need for more and more sustained work in terms of political dynamics as well as the economic dynamics of the city's regions and that this means engaging in issues related to citizenship and democracy (Guarneros-Meza, V. și Geddes, M., 2010).

In this respect, employment always reflects the idea that everyone should have the right to have a decent life through their own work. This connotation of social integration through full participation in working life is the one to which full engagement refers. Thus, the term "full engagement" became popular, being in accordance with social and economic policy. At the same time, the content of this objective should be reconsidered, since the continuous employment model and full-time dependency is no longer up-to-date, although it implicitly highlights many institutional arrangements. On the other hand, the "men's washing standard" denies women's full participation in employment and relieves men of full responsibility in family life.

Also, Schmid, G. and Gas, B., suggests replacing this rule with the idea of regulating transitional labor markets. These would be the complementary element of the innovation and investment strategy needed to tackle the employment crisis in Europe and beyond. These are defined as institutionalized arrangements that support or allow the change of employment status, but also the combination of labor on the labor market with other useful (and to some extent, even economic) social activities. Important elements of such a strategy are the combination of working time reduction and lifelong learning, the use of explicit wage subsidies for lower groups in coming groups or difficult persons, and the legal or contractual rights to transitional employment. In this way, these transitional labor markets would serve as a flexible buffer extending in times of recession (Schmid, G. and gas, B., 2002).

Today, the European Union is facing the emerging nexus of flexibility and security, which underpins the new concept of "flexicurity" policy, where national governments, individual companies, industry sectors and workers are involved in a whole organizational flow. On the one hand, there is a demand for flexible labor

market, employment and work organization. At the same time, there is a similar demand for the security of employees - particularly vulnerable groups - and for the preservation of social cohesion in our societies. At the same time, decision-makers, trade unions, legislators and employers' organizations have a strong need for new models and policy concepts inspired by theory, which promise to reconcile these objectives of improving flexibility, but also security, which at first glance seem to be incompatible (Wilthagen, T. and Tros, F., 2004).

At the end of last century, Stöhr, W.B., addressed the consequences of the failure of the large-scale industrial enterprise, reaching an analytical approach to the inability of central government policies to cope with the results of economic restructuring. This research was based on a number of comparative case studies demonstrating how local communities across Europe (East and West, industrial and rural) responded promptly to economic dislocation and decline (Stöhr, W.B., 1990).

More over, the study of California's regional labor development collaboratives takes this different and new approach to economic and labor development. In this respect, there is a theory based on a group of sectors concerned and other relevant stakeholders (foundations, governments and labor development), which emerged in the late 1990. In order to meet the multiple objectives of economic growth opportunity, increasing regional economic, the competitiveness and reducing the poverty rate, several experts in the field supported a new labor development system that was collaborative in scope, Regional on scale and career-oriented toward the desired work (Chapple, K., 2005).

Also in this direction, Ihlanfeldt, K.R. conducted a market survey in Atlanta to find out the knowledge people have about to find out what people know about the spatial distribution of job offers in the metropolitan area. Respondents were asked to rank areas in the region, based on the number of jobs for workers without university education. Thus, a variety of methods are used to assess the accuracy of the responses, for the purpose of obtaining a correctly ranking (Ihlanfeldt, K.R., 1997).

In this way, in order to be able to determine which of the two opposite regions of Romania has a higher potential regarding the labor market, we will use the method of multicriteria analysis. It aims to support the decision-making process so that the authorities have a better understanding of both the problem and the possible solutions.

### Research results and discussions

In order to carry out a meaningful analysis of the two macroregions of Romania (Two and Four), we present a case study, which aims to build a framework that includes all the premises of research with a view to the subsequent implementation of a management plan for the development of these areas.

Two opposite sides of Romania were chosen for analysis, the south-west side and the eastern side, represented by the two macroregions mentioned above. To this end, the analysis of these areas will be carried out in detail, following the completion of the multicriteria analysis, in order to design a framework on the potential for the sustainable development of the two macroregions. With regard to the scope of sustainability, the aim pursued was to reduce unemployment, create new more attractive jobs, reduce job vacancies, identify current infrastructure at macroregional level, but also social, economic and social perspective and develop the social relationship in the community. Moreover, areas with a medium, maximum and minimum number of national vacancies, which were analyzed in terms of their influence on each of the two areas of Romania, were taken into for consideration. All these aspects must be incorporated into regional policies for the development of globalization that take account of socio-economic aspects both in urban and rural areas, with measures tailored to the specific features of the area.

In this respect, it was decided to use the method of multicriterial analysis, which the authors called the determination of the labor force situation in two opposite macroregions of Romania. This method is used to quantify the socio-economic transformation according to its own behavior parameters, based on a set of clearly defined economic and technical indicators, backed up by qualitative information and data.

This model of ratification requires a number of steps as follows:

- drawing up the list of indicators, on the basis of which the prospect of determining the labor market situation of Macroregions Two and Four, can be identified, and assigning coefficients of importance to each indicator;
- the values of the coefficients should be between 5 and 10 depending on the influence on labor market potential analyzed (for 5-6 the importance is reported as secondary, 7-8 is considered to be major and 9-10 is considered to be of great importance);
- determining the rank for the 10 indicators at the level of the two macroregions (establishing the rank of each macroregion according to the reference area; for

establishing the hierarchy, the grades will be 1 and 2, including the average of each macroregion). This indicator will determine the establishment of priorities at the criterion level, a particularly important aspect in any analysis study.

- calculation of the aggregated note at the level of each indicator according to Table A1 (Annex A1):

$$N_{agik} = R_k \times C \quad (1)$$

Where:

$i$  = indicator (1-2)

$K$  = macroregions (Two, Four).

- identification of the overall indicator for each macroregion; this step includes the sum of the resulting aggregated notes at the level of each macroregion analyzed.

$$I_k = \sum_{i=1}^{25} N_{agi} \quad (2)$$

In order to identify the socio-economic perspective of the two opposite areas of the country, the method of multicriterial analysis has been used at macroregional level to determine the differences between the two areas and their potential. In applying this method, 10 indicators have been used, which are considered as drivers of determining the employment situation in the two areas of Romania.

**Table 1. The importance coefficients for the analysed indicators.**

Item no.	Indicators	Coefficient of importance
1	The social perspective at macroregional level	9
2	The economic outlook at macroregional level	9
3	Development of the social relationship in the community	7
4	Infrastructure at macroregional level	8
5	The creation of new, more attractive jobs, through various economic activities	10
6	Decrease in unemployment at macroregion level	10
7	Fewer job vacancies	10
8	Areas with an average number of vacancies	8
9	Areas with the most job vacancies	10
10	Areas with the lowest job vacancies	6

*Source:* Authors' own conceptualization.

These 10 indicators in Table 1 were given a value based on the importance given to determine the labor force market situation of the two opposing macroregions

of the country. Therefore, the lowest value was attributed to the indicator "least job vacancies" which encompasses a low attractiveness of the labor market supply among the population. In order to be able to separate the possibilities for development at macroregional level, it has been assigned independent indicators such as the "Social perspective at macroregional level", "Economic perspective at macroregional level" and "Development of the social relationship in the community". They have the role, together with the identification of the current situation of the infrastructure, to harmoniously combine the research result, together with the indicators that strictly define the existing offer at the level of field of activity, according to the CANE nomenclature, of the National Office of the Trade Register - "Areas with fewer/most vacancies"; "Areas with an average number of vacancies". At the same time, maximum values have been given to indicators that best define the situation on the labor market, namely: "Creating new, more attractive jobs through various economic activities"; Reducing unemployment in the macroregion; reducing job vacancies. They offer full transparency as to the past and the present nature of the measures carried out at macroregional level, so that a sustainable strategy can be achieved for the future, to reduce unemployment and provide more attractive jobs, which could be able to involuntarily increase the birth rate and the repopulation of these areas.

This analysis will enable us to highlight areas that constantly produce jobs and those that have a high level of unemployment over the period 2014-2019. Moreover, following this case study, we can provide a relevant framework for the results that can be the basis for a management plan to be drawn up at local and regional level as regards the development of the two opposite areas of Romania.

## Results

The overall indicator has been calculated as the sum of the aggregated scores obtained for each of Romania's two macroregions, within the 10 indicators mentioned above. Depending on the value of each indicator, the overall indicator has been determined, which has led to the discovery of the macroregion with the highest potential for labor market development. As can be seen from Table 2, the highest level of the overall indicator is found in Macroregion Two, which indicates that this area has greater potential for labor market development than the southwest of the country. Macroregion Four is in a predominantly plain area with small areas of hilly and mountain, which gives it an interesting dynamic of relief, which has so far enabled it to enjoy a variety of economic activities and a better attractiveness in the labor market of the investment made by the entrepreneurial area. On the other hand, the eastern part of the country, meaning Macroregion



Two, shows a slight gap according to the analysis carried out, which indicates that this area needs a macroregional strategy allowing for new investment and the development of public-private partnerships, the key element for reducing unemployment and the number of job vacancies.

**Table 2. Determination of the global indicator**

County	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	TOTAL
Macroregion Two	18	18	14	8	20	20	10	8	10	12	138
Macroregion Four	9	9	7	16	10	10	10	16	20	6	123

*Source:* Authors' own conceptualization, based on the multicriteria analysis method.

Macroregion Two is a statistical size, without legal personality, established in 2001 on the basis of the GEO 75/2001, by aggregating the data collected by the Regional Statistical Directorates General within two development regions: the North-East region and the South-East Oltenia region. It is practically made up of the following counties: Bacau, Botosani, Braila, Buzau, Constanta, Galati, Iasi, Neamt, Suceava, Tulcea, Vaslui and Vrancea. On the other hand, Macroregion Four, also, established in 2001, is made up of two development regions, which also have no legal personality: the South-West region and the Western region. Practically, this macroregion consists of the following counties: Dolj, Gorj, Mehedinti, Olt, Valcea, Timis, Arad, Caras-Severin and Hunedoara.

From a multicriteria analysis point of view, depending on the importance of the indicator, Macroregion Two has achieved maximum values in indicators such as: the social perspective at macroregional level; the economic perspective at macroregional level; the development of the social relationship in the community; creating new, more attractive jobs through various economic activities; reducing unemployment at macroregional level; areas with the lowest job vacancies. The importance of these indicators at macroregional level is intended to develop the potential offered by the labor market within the area, so that sustainable government policies and measures can reduce the value of unemployment and reduce the number of job vacancies. Moreover, building on the development of the entrepreneurial environment by accessing structural funds, new opportunities of more attractive jobs can be opened, which would allow the prevention of the long-term appearance of vacancies.

On the other hand, Macroregion Four has achieved maximum values in indicators such as: infrastructure at macroregional level; fewer job vacancies; areas with an average number of vacancies; areas with the most vacancies. The importance of

these indicators in this area is intended to show that the high level of infrastructure compared to macroregion two has led to fewer vacancies. This will also help to reduce unemployment in the long term if the indicators mentioned above, which are closely correlated, will show a sustainable manifestation.

The prospect of developing the potential offered by the labor market within the two macroregions of Romania, located in opposite parts of the country, presents real challenges for regional authorities, especially in Macroregion Two, where the overall indicator has been greatest value. The advantage of having a large size and a low to average population density will allow sustainable government policies and measures to be achieved, which can be found in the National Recovery and Resilience Plan 2021-2027.

### Analysis of research results and discussions

Romania has recently lost large sums of money due to the inability to professionalize its students in various activities, which would allow them a lifelong qualification. Since the 21st century, most adolescents have been instructed to improve in college, regardless of their professional profile or inclination, which is why today, a skilled worker, graduate only of vocational school can get higher salary than a graduate of a public college or private.

Regarding the analyzed case study, two development macroregions of Romania were taken for analysis, Macroregion Two (includes the North-East and South-East Oltenia regions) and Macroregion Four (includes the South-West and West regions), which although being in opposite areas of the country, it has certain particular characteristics. This aspect will allow us to conclude the deficiencies identified at the level of each entrepreneurial activity and to follow their evolution throughout the analyzed time interval.

**Table 3. Job vacancies in Macroregion Two**

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
A. AGRICULTURE, FORESTRY AND FISHERIES	175	204	182	186	191	223
B. EXTRACTIVE INDUSTRY	10	29	56	9	13	11
C. MANUFACTURING INDUSTRY	1.761	1.577	2.236	2.016	1.967	1.953

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
D. PRODUCTION AND SUPPLY OF ELECTRIC AND THERMAL ENERGY, GASES, HOT WATER AND AIR CONDITIONING	17	24	38	43	55	59
E. WATER DISTRIBUTION; SANITATION, WASTE MANAGEMENT, DECONTAMINATION ACTIVITIES	140	150	184	151	232	391
F. CONSTRUCTIONS	256	359	507	321	641	1.049
G. WHOLESALE AND RETAIL TRADE; REPAIR OF VEHICLES AND ENGINES	367	775	891	783	995	1.051
H. TRANSPORT AND STORAGE	188	247	211	253	521	439
I. HOTELS AND RESTAURANTS	68	167	114	197	309	423
J. INFORMATION AND COMMUNICATIONS	88	151	158	215	287	167
K. FINANCIAL AND INSURANCE INTERMEDIARIES	107	105	158	157	99	86
L. REAL ESTATE TRANSACTIONS	33	43	40	33	66	5
M. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	87	160	252	241	195	80
N. ADMINISTRATIVE SERVICES ACTIVITIES AND SUPPORT SERVICES ACTIVITIES	223	174	274	232	355	465
O. PUBLIC ADMINISTRATION AND DEFENSE; SOCIAL INSURANCE IN THE PUBLIC SYSTEM	797	1.217	1.491	1.347	1.034	941
P. EDUCATION	424	545	605	428	237	443
Q. HEALTH AND SOCIAL ASSISTANCE	1.547	1.809	2.312	2.837	1.921	1.753
R. PERFORMANCE, CULTURAL AND RECREATIONAL ACTIVITIES	205	253	349	308	269	211
S. OTHER SERVICE ACTIVITIES	16	21	30	78	25	26
TOTAL	6.509	8.010	10.088	9.835	9.412	9.776

Source: National Institute of Statistics in Romania

According to Table 3, as regards the number of vacancies registered under this macroregion, it is noted that areas such as manufacturing, public administration and defence; social security in the public system, but also health and social assistance have had the highest level of labor shortages in the time frame analysed. On the other hand, the extractive industry, the production and supply of electricity and heat, gas, hot water and air conditioning, real estate transactions, and other service activities report the minimum level of job vacancies. At the same time, in accordance with Annex A2, it can be observed that the manufacturing industry has the highest level of labor shortages in Romania, while Macroregion Two reports about 13.5% of the total of this need at national level during the period 2014-2019. Also, among the areas that have seen a decrease in the number of vacancies, within the period analysed, we list financial intermediation and insurance, professional, scientific and technical activities, as well as real estate transactions. Therefore, a worrying thing is due to this small number of economic activities, as most entrepreneurial activities report an increase in the need for labor, which is, of course, found at the level of this macroregion, where vacancies are increasing by around 50.3% in 2019 compared to the base year.

**Table 4. Job vacancies in Macroregion Four**

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
A. AGRICULTURE, FORESTRY AND FISHERIES	68	110	85	77	95	119
B. EXTRACTIVE INDUSTRY	4	2	2	5	4	21
C. MANUFACTURING INDUSTRY	3.336	4.060	3.976	4.107	4.318	3.249
D. PRODUCTION AND SUPPLY OF ELECTRIC AND THERMAL ENERGY, GASES, HOT WATER AND AIR CONDITIONING	14	6	3	-	5	2
E. WATER DISTRIBUTION; SANITATION, WASTE MANAGEMENT, DECONTAMINATION ACTIVITIES	61	60	114	148	131	70
F. CONSTRUCTIONS	113	153	130	76	473	111
G. WHOLESALE AND RETAIL TRADE; REPAIR OF VEHICLES AND ENGINES	407	535	604	778	649	740
H. TRANSPORT AND STORAGE	410	440	477	621	979	722

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
I. HOTELS AND RESTAURANTS	87	47	585	63	73	126
J. INFORMATION AND COMMUNICATIONS	105	103	200	204	385	291
K. FINANCIAL AND INSURANCE INTERMEDIARIES	64	79	109	119	82	75
L. REAL ESTATE TRANSACTIONS	9	22	25	13	15	5
M. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	92	130	180	210	259	137
N. ADMINISTRATIVE SERVICES ACTIVITIES AND SUPPORT SERVICES ACTIVITIES	137	304	408	378	478	462
O. PUBLIC ADMINISTRATION AND DEFENSE; SOCIAL INSURANCE IN THE PUBLIC SYSTEM	968	1.060	1.140	1.280	1.062	838
P. EDUCATION	1.578	1.642	1.483	1.608	1.714	430
Q. HEALTH AND SOCIAL ASSISTANCE	723	860	1.025	1.121	1.054	840
R. PERFORMANCE, CULTURAL AND RECREATIONAL ACTIVITIES	153	186	182	200	176	156
S. OTHER SERVICE ACTIVITIES	3	5	7	6	3	11
TOTAL	8.332	9.804	10.735	11.014	11.955	8.405

Source: National Institute of Statistics in Romania

According to the Table 4, it can be noted that the number of vacancies in this macroregion reports the maximum level of labor shortage in areas such as manufacturing, public administration and defence; social insurance in the public system, health and social care, as well as education. On the other hand, entrepreneurial activities such as the extractive industry, the production and supply of electricity and heat, gas, hot water and air conditioning, as well as other service activities report the minimum level of the offer of job vacancies. At the same time, in accordance with Annex A2, it can be observed that the manufacturing industry has the highest level of labor shortages at national level, with Macroregion Four reporting about 26.9% of the total of this need at Romania level between 2014 and 2019. At the same time, among the areas that have decreased the number of vacancies, within the period considered we list the manufacturing industry, the production and supply of electricity and heat, gas, hot

water and air conditioning, construction, real estate transactions, public administration and defence; social security in the public system, but also education. Therefore, a pleasing aspect is due to this relatively large number of reductions in job supply, since at the level of the macroregion concerned the increase in 2019 compared to the base year was only about 0.9%.

**Table 5. Unemployed registered at the level of Macroregion Two**

Region	Year					
	2014	2015	2016	2017	2018	2019
Northeast	1.328.273	955.804	921.525	834.077	730.972	636.484
Southeast	1.121.136	830.482	799.202	739.688	578.478	504.913
TOTAL	2.449.409	1.786.286	1.720.727	1.573.765	1.309.450	1.141.397

*Source:* National Institute of Statistics in Romania

According to the Table 5, as regards the number of unemployed registered at Macroregion Two level, is reported a gradual decrease in the time frame analysed. At the same time, it can be observed, according to Table 3, that vacancies in this macroregion report a much higher number than the total of unemployed. In this respect, the assumption that research should be developed at the level of each qualification of registered unemployed is validated with the aim of placing them on the labor market. It can, also, be noted that there has been a decrease in the number of unemployed for each region, and therefore also at macroregional level. At the same time, in accordance with Annex A3, the share of unemployed people in the macroregion analysed compared to the national level is approximately 36%. In this respect, we consider this share to be an important one, which must be taken seriously when it is to be achieved economic policies at national level.

**Table 6. Unemployed registered at the level of Macroregion Four**

Region	Year					
	2014	2015	2016	2017	2018	2019
Southwest Oltenia	1.191.094	874.980	823.114	760.816	623.230	537.043
West	464.211	321.391	264.291	227.086	196.947	177.547
TOTAL	1.655.305	1.196.371	1.087.405	987.902	820.177	714.590

*Source:* National Institute of Statistics in Romania

According to the Table 6, as regards the number of unemployed registered at Macroregion Four, is reported a gradual decrease of the analyzed indicator in the

period 2014-2019. At the same time, it can be observed, according to Table 4, that vacancies in this macroregion report a much higher number than the total unemployed. This gives us the assumption that research should be developed at the level of each qualification of registered unemployed, with the aim of placing them in the labor market. This decrease in the number of unemployed is certainly also driven by other factors such as mortality, population migration to other countries or the retention and increase of voluntary unemployment. However, the number of vacancies, however, we believe, can be supported by involuntary unemployment, but also by the implementation of policies to reduce voluntary unemployment.

At the same time, it can be seen that there has been a decrease in the number of unemployed for each region, and therefore also at macroregional level. At the same time, in accordance with Annex A3, the share of unemployed people in the macroregion analysed compared to the national level is approximately 23.5%. This indicates that there should be symmetry among the four macroregions at national level on the indicator under review. In theory, we consider a systematic approach to entrepreneurial activities necessary, so that on the basis of economic policies in all areas of the country, unemployment is gradually and sustainably reduced.

### Conclusions

Following the analyzed case study, it was found that the two development macroregions in Romania, which have the smallest and the largest population at national level, register a decrease in the unemployment rate in the analyzed time interval. At the same time, according to the analysis of the multicriteria method, the highest level of the global indicator is found in Macroregion Two, which indicates that this area has a greater potential than the southwestern part of the country, regarding the development of the labor market.

Areas such as manufacturing, public administration and defense; social security in the public system, but also health and social care, has reported the most of job vacancies in the time period considered for both areas. On the other hand, the production and supply of electricity and heat, gas, hot water and air conditioning, as well as other service activities, report a minimum level of job supply for the two development macroregions analyzed. The only exception is real estate transactions domain, which in Macroregion Two has registered few job vacancies. With regard to the time period analyzed, it was found that only the real estate transaction sector reported a decrease in the number of job vacancies in both development macroregions. Also, Macroregion Two has reported this downward trend only

within the financial intermediation sector, while Macrorregion Four has decreased in other values of areas such as manufacturing, electricity and heat production and supply, gas, hot water and air conditioning, public administration and defense; public social security and education.

At the level of the unemployed registered in the two opposite areas of the country, it has been noted that there is a gradual decline in the number of people registered in this category, which shows that the two indicators analyzed are in a relationship that is dependant on each other. This case study could, also, be a starting point for clarifying the differences identified, so that new research can demonstrate the source of these inconsistencies. At the level of assumptions, we can say that there are no qualified staff for job vacancies among the unemployed or there is no interest from the unemployed in offering a new career perspective, there is no interest from the unemployed in giving themselves a new career perspective.

The two assumptions can help local entrepreneurs and regional and government decision-makers to determine the best measures and policies to be imposed in terms of labor supply, but also certain constraints among the unemployed, so that the number of job vacancies is gradually reduced.

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## Annexes

## Annex A1

## Calculation of the aggregated note

The indicator	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	TOTAL
<b>Macroregion</b>											
Indicator's rank	9	9	7	8	10	10	10	8	10	6	-
Macroregion Two	18	18	14	8	20	20	10	8	10	12	138
Macroregion Four	9	9	7	16	10	10	20	16	20	6	123

Source: Authors' own conceptualization, based on the multicriteria analysis method

## Annex A2

## Vacancies in Romania

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
A. AGRICULTURE, FORESTRY AND FISHERIES	382	611	606	637	634	755
B. EXTRACTIVE INDUSTRY	101	83	100	80	66	127
C. MANUFACTURING INDUSTRY	10.711	13.685	15.793	15.756	16.403	13.304
D. PRODUCTION AND SUPPLY OF ELECTRIC AND THERMAL ENERGY, GASES, HOT WATER AND AIR CONDITIONING	98	113	297	365	300	293
E. WATER DISTRIBUTION; SANITATION, WASTE MANAGEMENT, DECONTAMINATION ACTIVITIES	803	1.094	1.068	1.094	1.269	1.279
F. CONSTRUCTIONS	1.147	1.479	1.623	1.821	2.412	2.398
G. WHOLESALE AND RETAIL TRADE; REPAIR OF VEHICLES AND ENGINES	2.949	4.656	5.216	5.075	5.641	6.269

ACTIVITIES OF THE ROMANIAN ECONOMY	Year					
	2014	2015	2016	2017	2018	2019
	Number					
H. TRANSPORT AND STORAGE	1.650	2.568	2.686	3.323	4.567	4.061
I. HOTELS AND RESTAURANTS	439	540	1.141	866	1.133	1.380
J. INFORMATION AND COMMUNICATIONS	939	1.668	2.257	2.027	2.946	2.462
K. FINANCIAL AND INSURANCE INTERMEDIARIES	790	864	1.253	1.435	991	708
L. REAL ESTATE TRANSACTIONS	98	135	151	128	184	106
M. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	818	1.124	1.499	1.602	1.624	1.330
N. ADMINISTRATIVE SERVICES ACTIVITIES AND SUPPORT SERVICES ACTIVITIES	1.841	1.943	2.901	2.858	2.574	2.851
O. PUBLIC ADMINISTRATION AND DEFENSE; SOCIAL INSURANCE IN THE PUBLIC SYSTEM	6.455	8.158	9.685	8.695	7.612	6.200
P. EDUCATION	2.619	2.471	2.500	2.473	2.701	1.480
Q. HEALTH AND SOCIAL ASSISTANCE	4.881	6.451	8.461	9.197	6.948	6.452
R. PERFORMANCE, CULTURAL AND RECREATIONAL ACTIVITIES	814	1.272	1.454	1.430	1.206	1.206
S. OTHER SERVICE ACTIVITIES	988	1.037	1062	1.125	1.375	1.160
TOTAL	38.523	49.952	59.753	59.987	60.586	53.821

Source: National Institute of Statistics in Romania

## Annex A3

## Unemployed registered in Romania

Macroregion/ Development region	Year					
	2014	2015	2016	2017	2018	2019
<i>Macroregion 1</i>	1.292.894	1.193.513	1.043.507	935.665	751.237	647.348
NORTHWEST region	566.718	509.367	467.007	438.818	352.233	306.523
CENTER region	726.176	684.146	576.500	496.847	399.004	340.825
<i>Macroregion 2</i>	1.827.750	1.786.286	1.720.727	1.573.765	1.309.450	1.141.397
NORTHEAST region	995.057	955.804	921.525	834.077	730.972	636.484
SOUTH-EAST region	832.693	830.482	799.202	739.688	578.478	504.913
<i>Macroregion 3</i>	1.353.654	1.293.787	1.170.980	998.466	839.938	690.156
SOUTH-MUNTENIA region	1.053.446	1.011.023	909.914	757.328	617.681	493.207
BUCHAREST - ILFOV region	300.208	282.764	261.066	241.138	222.257	196.949
<i>Macroregion 4</i>	1.235.178	1.196.371	1.087.405	987.902	820.177	714.590
SOUTHWEST OLTENIA region	884.986	874.980	823.114	760.816	623.230	537.043
WEST region	350.192	321.391	264.291	227.086	196.947	177.547
TOTAL	5.709.476	5.469.957	5.022.619	4.495.798	3.720.802	3.193.491

Source: National Institute of Statistics in Romania