

Dinculescu, Corina-Georgeta

**Conference Paper**

## The influence of education on rural population employment: Regional disparities

**Provided in Cooperation with:**

The Research Institute for Agriculture Economy and Rural Development (ICEADR), Bucharest

*Suggested Citation:* Dinculescu, Corina-Georgeta (2016) : The influence of education on rural population employment: Regional disparities, In: Agrarian Economy and Rural Development - Realities and Perspectives for Romania. 7th Edition of the International Symposium, November 2016, Bucharest, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, pp. 279-286

This Version is available at:

<https://hdl.handle.net/10419/163386>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

## THE INFLUENCE OF EDUCATION ON RURAL POPULATION EMPLOYMENT - REGIONAL DISPARITIES

CORINA - GEORGETA DINCULESCU<sup>1</sup>

**ABSTRACT:** *A higher level and continuous education throughout entire life (necessary for adapting to the changes in the labor market) and a better health offer greater chances of sustained economic and social development. Also, a higher education level contributes to decrease the disparities between economic regions of development, due to the influence it has on employment population, in a particular area. The analysis may reveal regional employment disparities, sometimes severe, between development regions, representing a hindrance to economic development of the country, as a whole. The 8 development regions of Romania have certain particularities (features) in terms of employment, which makes some characteristics (demographic, educational etc.) to impart significant influence on employment. This paper aims to highlight the features of the rural area, in terms of population participation in economic activity, and disparities between the development regions, in terms of employment of rural population, respectively the influence that the level of education has on employment, and how it is reflected in the employment rates of rural population (by age groups), but also ranking of the development regions from this point of view.*

**Keywords:** *labour force, employment, regional disparities, level of education, rural area.*

**JEL Classification:** J21, J24, I25, O15.

### INTRODUCTION

Essential component of rural development policy, the labour resources are an important factor for sustainable rural development. To meet the multiple challenges of rural areas, regarding the social component, appears to be appropriate a qualitative analysis of labour resources to determine as precisely is possible the disparities between EU average and Romania.

The national interest is more obvious than the European one, given the specific situation of Romania, where most specific indicators (employment, education, qualification) are below the European average, and the disparities are large enough to pay more attention to this area. Thus, the analysis of labour resources in rural, and of regional disparities between them could lead to identification of specific problems of social component for each region / county, on which must take actions to improve those levels and to establish priority objectives in the field.

To assess the human resources, this paper proposes an analysis of labour resources in rural areas, aiming to highlight how one of the objectives of rural development policy for the period 2014 - 2020 - balanced territorial development of rural communities - might contribute to the economic development of the area, with a focus on decreasing regional disparities.

### USED DATA AND METHODS

The analysis of labour resources and of the rural labour force, was based on aggregated results of statistical research of Romanian Institute of Statistics, LFS (Labour Force Survey in households), by custom queries of the public available database (Tempo Online), followed by various selections, tabulations, charts and extra own processing, mainly in MS Excel.

With respect to reveal the disparities at geo-level (8 developments' regions) the author used specific methods (statistical and geo-referenced analysis with GIS). Along with the core statistical methods used by GIS<sup>2</sup> software to produce thematic maps, the relative distances method was used, which requires the national averages for all selected variables for the rural space of Romania's regions ranking.

---

<sup>1</sup> Corina Dinculescu, research assistant, Romanian Academy, Institute of Agricultural Economics, corina.dinculescu@gmail.com

<sup>2</sup> GIS Geographical Information System

For a relevant hierarchy were used specific meaningful indicators of labour resources. In this paper the author used the simple *method of ranking* - the results of which can be used in correlation analysis using nonparametric methods (rank correlation coefficient). The choice is justified by the existence of a small number of observation units (8 regions) and by analysing a reduced number of variables (depending on data availability by region).

When about ranking of each feature and for the combined rank some information is lost. It is therefore necessary to use additional other methods (*The relative distances' method like*) to check and confirm the hierarchy of development regions established by the previous method.

## RESULTS AND DISCUSSIONS

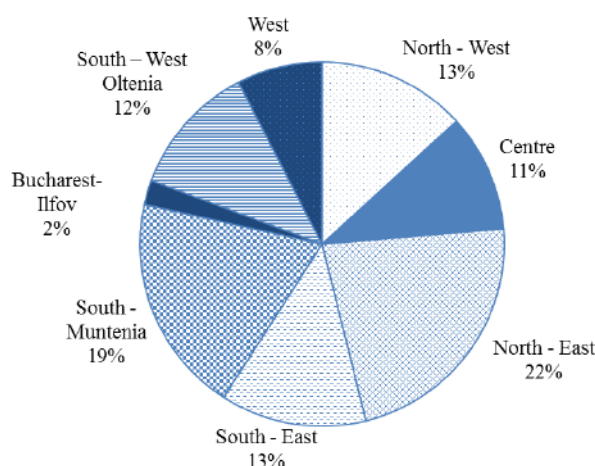
The qualitative analysis of labour resources<sup>3</sup> in rural areas will reveal how they are used, the correlation between employment and existing jobs in rural areas, the influence of the training level on employment, the correlation between: age, educational level and getting a job - factors that increase the persons' chances for getting jobs according with their training and personal expectations.

Romania's regions have certain features in terms of employment which makes some characteristics (demographic, educational, etc.) to render paramount influences on employment, which determine their future development on the medium and long term basis.

The most ruralised regions of Romania (with the largest share of rural population) were, in 2014, the "South - Muntenia" (60.5%), closely followed by the "North - East" (58.4%) while less the ruralised is the "West" region (38.3%), unless we consider the "Bucharest - Ilfov" (10.3%), which is atypical due to the large share of urban (Bucharest capital city has almost 10% of Romania's total population).

Ranks of development regions by share of rural population<sup>4</sup> in total population is maintained when ranking the regions by labour resources in rural areas (see Table 1). Combining ranks shows that four development regions of eight have the same position in both ranking (by share of rural population and by share of rural labour resources).

*Chart 1- Distribution of labour resources in rural areas of development regions, 2014*



*Data source: Romanian Institute for Statistics and own calculations*

<sup>3</sup> Labour resources represent that category of the population having all the physical and intellectual capacities that enable it to perform a useful work in any field of activities. The labour resources include the population in working age, able to work and people under and over working age currently working.

<sup>4</sup> Resident population at January 1<sup>st</sup>

The distribution of total rural labour resources (see Chart 1) in rural areas by regions reveals that almost half of them are concentrated in two regions (“North - East” and “South - Muntenia”), other labour resources being distributed as follows:

- “North - West” and “South - East” regions have each around 13% of the labour resources of rural areas and
- “South - West Oltenia” and “Centre” regions having 11.7%, respectively 10.5% of rural labour resources.

Table 1 – Development regions ranks, 2014

	Share of rural population in total region		Share of labour resources in total region		Mixed rank
	%	rank <sup>5</sup>	%	rank	
North - West	47.4	4	50.7	5	4
Centre	42.2	6	44.5	6	3
North - East	58.4	2	70.9	1	5
South - East	46.6	5	52.4	4	4
South - Muntenia	60.5	1	64.8	2	5
Bucharest-Ilfov	10.3	8	8.9	8	1
South – West Oltenia	54.0	3	59.0	3	6
West	38.3	7	40.9	7	2

Data source: Romanian Institute for Statistics and own calculations

Over the period of 2002 - 2014, the number of labour resources has continuously decreased in the years following the beginning of the review period, until 2006, when it reached the minimum period. This decrease was followed by an increasing trend toward the beginning of the period. In 2014, labour resources were slightly above the level of the beginning period<sup>6</sup>.

Knowing the number and labour resources in a certain period is not enough. For a good analysis is necessary to compute *the employment rate of labour resources*, what means the proportion in which those are used. This indicator is the ratio of the occupied population by the volume of labour resources. A high value of this indicator means that a greater part of the population included in labour resources is able to obtain the necessary income for living.

A simple comparison between the employment rate of labour resources at national level (66.9%) and at rural level for 2014 clearly shows a difference of over 10 percentage points in favour of the first one, revealing that the rural labour resources are used just over half. The greatest influence in this evolution have had, obviously, the population of working age whose slightly increasing evolution balanced the 3 percentage points decrease of the employed population outside the labour age (65 and over).

This trend highlights the fact that in the period under review, the population aged 65 and over, either retired, becoming pensioners, thus entering in the category of inactive population or not

<sup>5</sup> The ranking by the percentage of rural population, which is mathematically correct, can be confusing because a higher percentage means a less favorable situation, so the hierarchy should be reversed - however, mixing both ranks reveal very clear that a region with large share of population has a large share of labor resources used as well.

<sup>6</sup> Includes population aged 15 years, which would be fair (because the law allows employment from age 15 - with their parent or legal guardian consent), but not perfectly comparable to the figures of LFS.

stating employed<sup>7</sup> status, when they fulfilled the criteria to be classified in such category. However, there are still people in the labour market over the working age (65 and over), which could be explained by the need of additional revenue for covering the living costs.

The hierarchy of the development regions in terms of employment rate of labour resources in rural areas shows a difference between the maximum and minimum rates of employment of rural labour resources of 16.8 percentage points, highlighting with this indicator as well, and the disparities in regional development. An interesting, but understandable and expected (see explanation above) reveals the “Bucharest-Ilfov” region, which, although it has the lowest share of resources for rural labour, the last position in the ranking of regions has the highest employment rate of any region (63.6% versus 46.8%, “Centre” region, with the lowest employment rate of labour resources).

The work resources’ analysis does not provide a complete picture out of population employment (that part of used resources). Particularly, important for analysing existing workforce at a specific date is determination of its structure by different characteristics: age, level of education, residence, region of development, etc., and the correlation between these characteristics.

The main indicators characterizing the population by participation in economic activity are reflected in the following synthetic table (Table 2).

*Table 2 - Participation in the economic activity of the rural population aged 15 and over, by educational level, 2014*

- thou persons -

Education level	TOTAL	Active population	Employed population	Unemployed population	Inactive population
<b>TOTAL</b>	7,630	4,165	3,945	220	3,465
<b>Superior</b>	239	1,956	182	13	43
<b>Secondary</b>	2,988	2,120	1,994	127	868
<b>Lower</b>	4,403	1,849	1,769	80	2,554

*Data source: Romanian Institute for Statistics*

In 2014, just over half of the rural employed population (aged 15 and over) had secondary education, the other half is characterized mostly by a lower level of education. As regards to unemployed persons in rural areas, it is clear that their educational profiles was dominated also by secondary (57.6%) and lower (36.3%) levels.

*Rural inactive population* is dominated by a lower educational level (almost three quarters of total).

*The preponderant secondary educational level* could shape the idea of a possible lack of interest of the rural population to invest in their education, which would allow them to get a job according to their qualifications and to have more chances to obtain higher wages. But this is not the only one explanation – the inability to adapt the education system to the labour market requirements could be certainly another one.

A close look at the *employment rates of rural population* shows significant discrepancies between development’s regions, the spread between the maximum and the minimum rates of

<sup>7</sup> According to the methodology of the survey on labor in households, employment comprises all persons 15 years and over who carried out an economic activity for at least an hour (at least 15 hours for self-employed and unpaid family workers in agriculture previous year 2011) in the reference period (one week) in order to get income in the form of wages, payment in kind or other benefits.

Since 2011, self-employed and unpaid family workers working in agriculture are considered employed persons unless they are owners of agricultural production (not necessarily of the soil/farm) obtained and meet one of the following conditions:

a) agricultural production is destined, even at least in part, sold or exchanged in kind (barter);  
b) agricultural production is exclusively for own consumption, if it represents a substantial part of total household consumption.

employment of the workforce is nearly 25 percentage points - “North - East” with an employment rate of 62.6% and the “Centre” region, with the lowest employment rate of 39.2%.

Only two regions have employment rates of rural population higher than country rural area level - “North - East” (62.6%), and “South - West Oltenia” (56.1%).

By age groups, there is the same ranking of regions where the employment rate of the rural population, the “North - East” having the highest employment rates in almost all age groups (except for the age group 15-19 years, in which the highest employment rate was in the “South - West Oltenia” - 18.2%).

It can be said therefore that of all the regions, the “North - East” is in the most favourable situation, in terms of rural population employment.

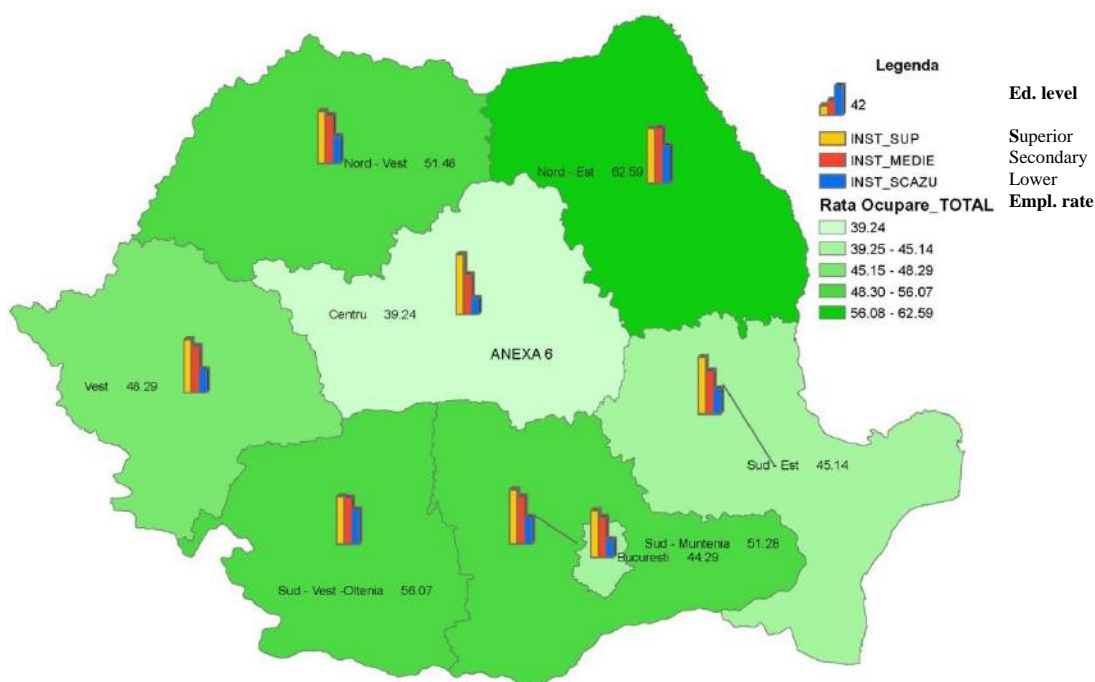
At some age groups the employment rate gap is much larger than for total. Thus, for the North-East region the difference is of more than 25 percentage points in terms of employment of rural population aged 60 and over and the case of total rural areas in this age group. Large differences of more than 15 percentage points are remarked to the age groups 20-24 years and 55-59 years.

At the opposite side lies “Centre” region, which, same as for total rural, registered the lowest rates of employment of the rural population in the age groups 15-19 years, 25-29 years and 40-54 years, the difference between them and the total rural level being over 10 percentage points.

On the other age groups, the lowest employment rates are in the “Bucharest-Ilfov” region. The differences are significant: for age groups of 20 - 24 years and 55-59 year the employment rates are less than half of the level for total rural areas, for age group of 60 - 64 the employment rate of the population accounts for only a quarter of the total rural and for 65 years and over the employment rate represents only one seventh of the rate of the total rural employment.

Similar disparities between the development's regions are observed when analysing the employment rates of the rural population by *educational level* (see Map 1).

Map 1 - Employment rate of rural population by regions and level of education, 2014



Data source: Romanian Institute for Statistics and own calculations

The “Centre” region shows the highest employment rate of rural population with higher education (84.8%). This is followed by the “South - East” region with an employment rate of rural population with higher education (80.1%), “North - East” (77.2%) and “South - Muntenia” (76.5%), all values above the rate for total rural areas.

For the rural population with secondary education, the employment is reflected differently by region. The highest rates of employment of the rural population with secondary education are in the “North - East”, followed by “North - West” and “South – Muntenia”, regions where employment rates of this population are located above the rate for total rural areas.

“North - East” and “South - West Oltenia” region rank first in terms of employment of rural population with lower education.

The correlations between the age groups and the education level in terms of rural population employment reveal significant differences between regions.

A segment of the population, and particularly carefully monitored, are **young people NEET**<sup>8</sup>. Along with reduced employment of young people in rural areas, the rate of young people not engaged in any form of employment, education or NEET training<sup>9</sup> recorded a significant increase. These young people seemed to have disappeared from the radar of education and social system and from the labour market as well, as it was explained in one OECD study<sup>10</sup>.

An overview of young people, group of 15 - 24 years, shows the increasing discrepancy (over the years) of education level between rural and urban population. This could be explained by the large opportunities young people, living in urban areas, have to obtain a higher education and also by the severe shortage of teachers in rural areas (only a third of the teachers work in rural areas, continuously decreasing during 2002-2014).

Regarding the employment of young people aged 15 - 24 within rural area, the last 15 years are marked by the same continuous decrease trend, as for the national average. However, the employment rate of young people aged 15 - 24 in rural areas (29.8%) are above the national one, which is 22.5%.

Low youth employment rate does not necessarily mean that these people are involved in the education system, neither is NEET category. Possible explanations would be the occupation of these in an informal work (undeclared) or young migrants to various countries in EU or outside EU, without declaring change of residence.

The analysis by level of education reconfirms the fact that a lower level of education determine a low level of employment of young people aged 15 - 24 in rural areas. In Romania, it could be observed that, while reducing employment of young people aged 15 - 24 rural, the NEET rate has decreased in the last 15 years - a situation which should be positive if the values of NEET rate would have been lower. The gap between NEET rates of the EU28 and Romania was reduced from 7.2 percentage points at the beginning of the period, to 4.6 percentage points in 2014. The national situation is far from positive, although the NEET rate for age group 15-24 years in 2014 has been decreased with 2.7 percentage points comparing with 2002.

A similar trend at the national level, but with much higher values, was observed for NEET rate of youth aged 15 - 24 years in rural areas.

The highest rates of young people NEET rate it is noted at youth aged 20-24 years. In the entire analysed period, the NEET rate was higher than those of young people aged 15-19 years. In 2014, the NEET rate for 20-24 years was almost 30%, which leads to the explanation of whether they work in the informal sector or are not motivated by a corresponding salary to individual expectations, which causes them not to enter in the labour market (formal).

It is obvious that the rural space is characterized by an unfavourable situation, the high values of the NEET rate meaning that the investment in training for this segment of population is wasted, because the knowledge gained during the training period does not bring the expected results, neither for the individual level (a well-paid job), nor for society (the contribution of these

<sup>8</sup> NEET youth - youth who are neither employed nor enrolled in an education or training.

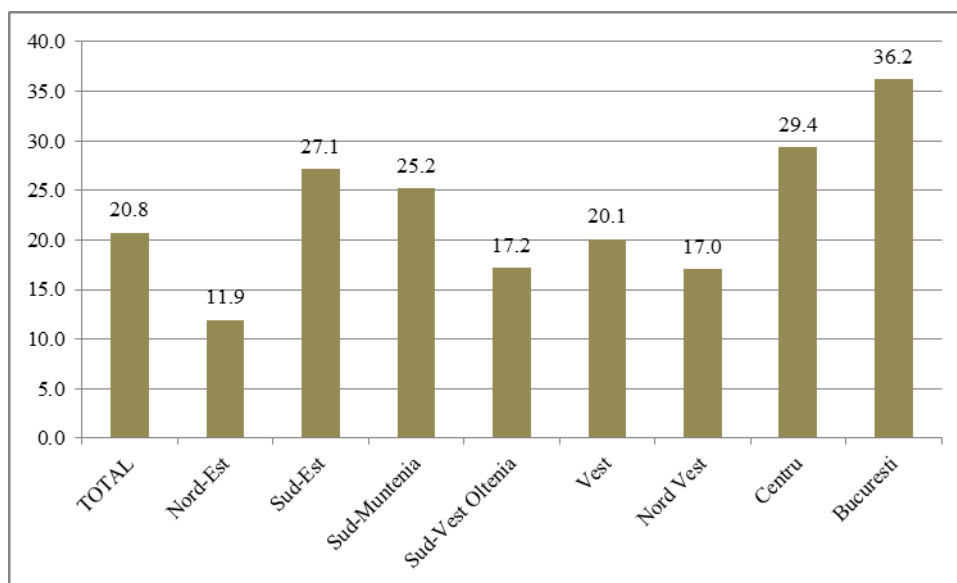
<sup>9</sup> The rate of young people not engaged in any form of employment, education or training NEET - is the ratio between young people aged 15-24 unemployed, not enrolled in some form of education or training to all young people in that age group. Shortly it will be used as *NEET rate*.

<sup>10</sup> Youth, Skills and Employability, OECD Skills Outlook, 2015

people to economic development). Having long-term NEET rate high values and continuous increase can lead to poverty and marginalization.

Significant disparities in terms of the share of young people NEET aged 15 - 24 in total population 15 - 24 years in rural areas are recorded at regional level. In “Bucharest-Ilfov” region NEET rate (36.2%) is the largest, showing a negative situation (perhaps influenced by higher informal economy). The better situation has the North-East region with a NEET rate of 11.9%.

*Chart 2 - NEET rate of youth 15 - 24 years in rural areas, by regions, in 2014*



*Data source: Romanian Institute for Statistics*

The regions where there is a apparently favourable situation (ie, the NEET rate lower than of the total area) are: “North - West” (17.08%) and “South - West Oltenia” (17.2%) and “West” (20.1%). The situation is apparently favourable only. The values of this indicator are still high, showing that young people aged 15 - 24 are not enrolled in any form of education or in the labour market.

## CONCLUSIONS

The achievements of a large research done by the author, related to the matter, were presented within this very short paper.

The main conclusions are as follows:

1. there is a direct dependency between the education level and the chances for getting a job or a better wage;
2. the most vulnerable group of persons in rural areas is of 15-24 years;
3. the education system is not adapted to labour market needs;
4. the rural area is captured within a vicious circle: there are extremely reduced investments (including from public sources) able to produce jobs, and if there are some intentions to do such investments, the process are discontinued due to the lack of trained/qualified persons to apply for new jobs; But few powerful investors took over the mater and trained themselves the future workers when other factors were more important for selection of a specific place for investment.
5. the data availability and quality have a major impact on research results:
  - a. due to the fact that there are a small units of observations for which the data are representative;



- b. LFS has a limited sample and is not updated often, being remarked over large periods very low variations, which cannot be explained comparing with real life observation or other non-conventional sources possible to be scanned within big-data concept;
  - c. starting with Population Census 2011, the concept of resident population was altered comparing with its definition, including a part of legal population (not interviewed/missed at census time and wrong counted from Population Register as resident at its legal domicile); External migrants have also a very approximate estimation; So the census resident population of 20,121,641 includes 1,236,810 persons captured from register, but not necessarily being all residents of the census place, some of them living in other places, in other localities or districts or abroad. This is making the current population figures uncertain and of course all further information resulting from its use.
6. The research will continue identifying more data sources and enlarging the number of observation units and of variables and then adopting of more sophisticated methods of data analysis and of results' presentation using at maximum extent the new visualisation tools.

### BIBLIOGRAPHY

- ANDREI, T., 2003, *Statistics and econometrics*, Bucharest, Economic Publisher;
- ANTONESCU, D., 2003, *Regional development in Romania, Concept, mechanisms, institutions*, Bucharest, Oscar Print Publisher;
- BARON T., BIJI E., 2004, *Theoretical and Economic Statistics*, Bucharest, Didactic and Pedagogic Publisher;
- DOBRIN M., TACHE A., PETRIȘOR A. I., 2010, *Analysis of regional development disparities in Romania using Geographic Information Systems*, Romanian Statistical Review;
- GHIȚĂ, S., 2005, *Statistics of labour resources*, Bucharest, Editura Meteor Press;
- JABA E., 2002, *Statistical methods applied in the study of regional disparities*, Iași, Sedcom Libris Publisher;
- OBADIĆ A., 2004, *Comparison of basic macroeconomic indicators on the labour markets of a select group of countries*, Project: The competitiveness of Croatia's human resources;
- OECD Skills Outlook, 2015, *Youth, Skills and Employability*;
- POPESCU, C. R., 2002, *Regional disparities in economic and social development of Romania*, Bucharest, Meteor Pres Publisher
- PREDA D., 2002, *Employment and Sustainable Development*, Bucharest, Economic Publisher;
- TRINH LE, JOHN GIBSON, LES OXLEY, *Measure Of The Stock Of Human Capital In New Zealand*;
- National Institute of Statistics, Romania, *Labour force in Romania: Employment and unemployment, in 2014*
- National Institute of Statistics, Romania, *Romania in figures*
- National Institute of Statistics, Romania, 2002 - 2015, *Statistical Yearbooks*
- \*\*\* EUROSTAT - <http://epp.eurostat.ec.europa.eu>
- \*\*\* National Institute of Statistics, Romania - [www.insse.ro/](http://www.insse.ro/)