

Considerations on the Regional Disparities in the Romanian Academic Education

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Abstract

The present paper brings into question the problem of regional development in Romania, in particular, it analyses the disparities between regions in the field of higher education.

We based our research on a set of indicators which characterize academic education, such as the number of universities, the teaching staff in higher education and the graduates in higher education. For all of these we studied the concentration/diversification at a regional level, considering two components: the public education and the private education. Methodologically, we used the coefficients of concentration/diversification proposed by Gini and also the Struck coefficient.

The results indicated that there is a relatively high concentration for higher education. The Bucharest-Ilfov development region has grouped most part of the universities, both public and private.

Key words: regional disparities, concentration/diversification, higher education, Gini coefficient

J.E.L. classification: A2, I21, I23

1. Introduction

Since 1990, the Romanian education system underwent a continuous reform which was both criticized and praised. In the past 25 years more universities were founded, both private and public, after a long period in which the access to a university was somewhat limited. Therefore, the possibilities for many people to attend a university increased, with a number of consequences on the labour market.

Higher education in Romania is offered in both public and private higher education institutions. All of them are coordinated by the Ministry of Education and Scientific Research. In higher education there are agencies that play a very important role in fields such as financing and scientific research or partnerships with social and economic environment.

The Romanian higher education has undergone significant changes since the academic year 2005/2006. Now it includes three cycles, according to the principles of the Bologna process. It is also correlated with the European educational system and with the applications of the European system of transferable credits.

The objectives and the main features of higher education include the assurance and equal access to academic education, the underlining of economic competitiveness on research and innovation, the maximization of quality in education, the development and implementation of the National Frame of Skills in the Higher Education system for the correlation of higher education with the demands of the labour market.

2. Studies for higher education in Romania

Higher education in Romania has made and is a serious research topic for many academic researchers. Education in Romania is in a continuous process of reorganization, playing a pivotal role in the development of society.

The current state of the Romanian higher education system, along with the progress in the implementation of the Bologna process, was discussed by Roman M. Based on statistical data on trends and number of student population and staff, the study highlights the importance of the demographic trend, which impacts both the evolution and the quality of the students' population as well as of the teachers'. (Roman, 2008, pp.5-26)

Tudorel, A. et al tried to identify the characteristics of the evolution of some data series regarding important variables that characterize the higher education in three countries in Eastern Europe, namely Romania, Bulgaria and Hungary, using econometric methods. The results presented emphasized the extensive development of higher education that cannot be sustained at the same level on a medium or long time perspective. (Tudorel et al, 2010)

A study by Korca highlights some characteristics of the higher education in Romania during transition. (Korca, 2009) It is also worth mentioning the results of a study developed by Teodorescu and Andrei which characterizes some aspects of the non-academic behaviour in higher education institutions and the student perceptions on academic integrity. The study also compares the relative importance of faculty influences and peer influences on students intention to cheat. (Teodorescu et al, 2009, pp.267-282)

Starting from the concern to ensure quality in education and comparing the higher education institutions, Curaj A. presents the Romanian higher education reforms in the Bologna process, and the national challenges. The conclusion of the study is that the internal quality assurance in Romanian universities is suspected of remaining still at the status of formality. (Curaj et al, 2015).

In a study designed to analyse the criteria of the choice that students take into consideration when following the financial-banking field for their higher education, Micu A. finds that students are not simple passive consumers in an academic area. They realize and judge how things are going on the educational market. (Micu et al., 2010, pp.1007-1014)

In 2008, the quality of the Romanian higher education system was studied in a survey having as main theme: the identification and quantification of the elements that shape quality in the higher education institutions. The main conclusion was that the system's evolution is conditioned by the effective intercessions that will be undertaken as far as education quality is concerned; it will be necessary to put into practice the declarations in this field in order to ensure education quality at European standards. (Juganaru et al, 2008).

Inspired by Jim Collins's structure from "Business Excellence", a group of researchers propose management solutions for the Romanian higher education system, explaining what it means Level 5 in education, for both professors and students. They state that the right way towards performance would require establishing a team between the students and their professors, a team to shape together a new paradigm of the education system, based on a win-win mentality and on the belief that education is the key to a nation's prosperity and persistence. (Popovici et al, 2015, pp.337-340)

These are just a few of the studies on Romanian higher education which come to prove the researchers interest in this area.

3. Methodological considerations

We based our study on the most recent data from the National Institute of Statistics, and especially on TEMPO-online, for the chapter dedicated to education.

We used a methodology based on the analysis of the coefficient of concentration/diversification proposed by Gini and Struck (Gini, 1909, pp. 769-789). These coefficients are widely used in fields as diverse as economics, education, sociology, health science, ecology, engineering and agriculture.

The Gini coefficient is usually defined mathematically based on the Lorenz curve. If in a Cartesian diagram, we report the values p_i on the abscissa and the values q_i on the ordinate and we connect the points (p_i, q_i) , the resulting curve is the *concentration curve* which is increasing and convex.

$$p_i = N_i / \sum n_i$$

$$q_i = L_i / \sum x_i n_i$$

where: p_i represents the relative flocks cumulated till the i level of the clustering feature and q_i represents the global values cumulated till the i level.

The formula used to calculate the Gini coefficient (GC) is the following:

$$CG = \sqrt{\sum_i g_i^2}, i = \overline{1, n}, \text{ with the values in the range } \left[\sqrt{\frac{1}{n}}; 1 \right].$$

The Struck concentration coefficient (CS) represents the corrected form of the Gini coefficient and it is calculated with the formula:

$$CS = \frac{n \sum_i g_i^2}{n-1}, \text{ with the values in the range } [0; 1].$$

The values closed to zero level mean a balance between elements, a lack of concentration; zero level means that all values of the indicator under investigation are the same. If the values tend to one, we consider a high level of concentration; the value one expresses maximal inequality among values.

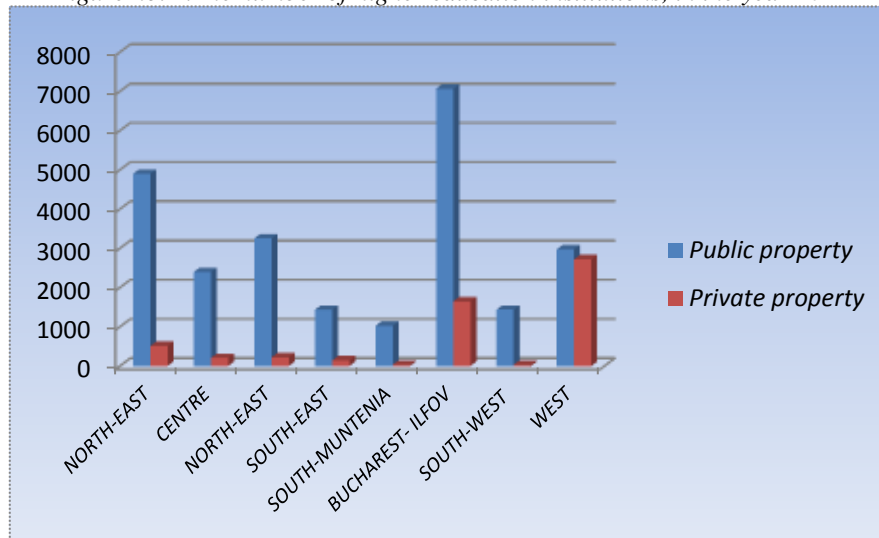
4. The regional disparities in higher education

Starting from the goal of the Europe 2020 Strategy which stated that 40% of young Europeans should have a higher education diploma by 2020, we based our analysis on the regional concentration in academics on the following statistical indicators: total higher education institutions, public higher education institutions and private higher education institutions.

The analysis for the number of higher education institutions

In 2014, 55.44% of it was in public property and 45.55% in private property. At a regional level, five of the eight regions held a majority of public higher education institutions (Centre, South-East, South-Muntenia, South-West and West).

Figure no. 1. The number of higher education institutions, in the year 2014



Sources: National Institutes of Statistics, <http://www.insse.ro/cms/>

Related to the concentration of higher education institutions, the Gini coefficient value is 0.4341 and the Struck coefficient is 0.2694, which means that in the year 2014 there was a significant concentration of the total higher education institutions in the eight development regions. The concentration is especially visible in the Bucharest-Ilfov region, which owns 33.66% of the total higher education institutions.

Table 2: The regional concentration for the number of higher education institutions

	Gini coefficient	Struck coefficient
Total higher education institution	0.4341	0.2694
Public higher education institution	0.4126	0.2274
Private higher education institution	0.4697	0.3290

Sources: Data processed by authors

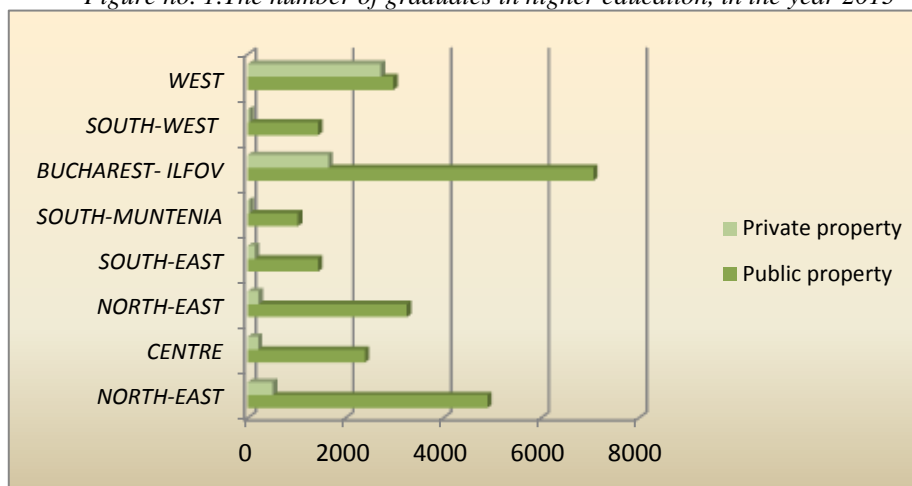
After the 1990 moment, the number of higher education institutions grew considerably in Romania, especially around the 2000s, and in the year 2014 the number of higher education institutions reached 101, from a peak of 126 in the year 2000 and the year 2001. At the same time, there has been a large diversification of specialized study programs offered by different institutions.

It is also known that approximately 20% of universities are over 100 years old of the total higher education institutions and 60% are younger than 25 years and the key axis of institutional diversification in the 1990s was the public/private one. Private higher education institutions have developed rapidly and provided study programs mostly in social sciences and humanities. In addition, public higher education institutions have diversified their study programs to respond to a very high demand for higher education degrees, from people coming from various walks of life.

What were the regional disparities for graduates in higher education?

The results of regional disparities for the university graduates show that there is a significant regional disparity, the Gini coefficient was 0.4099 and Struck coefficient was 0.2217, at a total level. Once again the Bucharest-Ilfov region is apart from the others, 30.1% of the university graduates were from this development region. A possible explanation is that many higher school graduates from outside Bucharest choose to come to the Bucharest-Ilfov region to continue their studies, in the perspective of a good job after graduation.

Figure no. 1. The number of graduates in higher education, in the year 2013

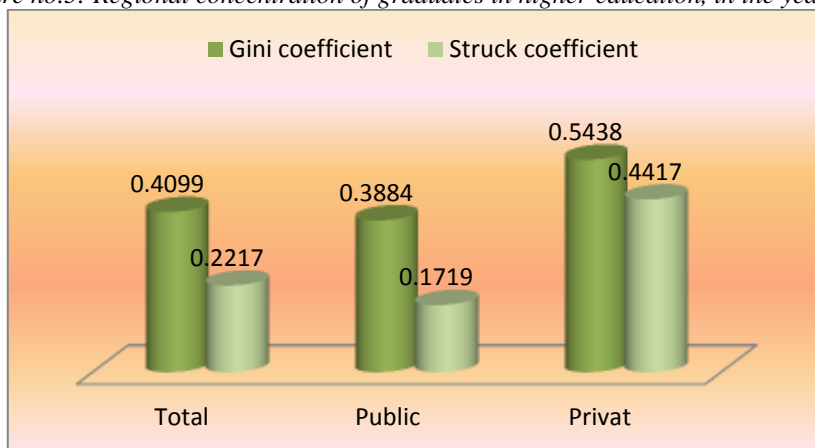


Sources: National Institutes of Statistics, <http://www.insse.ro/cms/>

For all eight development regions, the number of university graduates was significantly higher in public education versus private education. In Romania, in the year 2013, 77.14% of the number of higher education graduates came from public education, compared to only 22.86% from private education. The number of graduates in higher education grew considerably in Romania, the higher number was in 2007, more than double, compared with 2013.

As we see in Figure no. 3, for the graduates in higher education, the regional concentration is higher in the private sector, compared to the public sector. The concentration is especially visible in the Bucharest-Ilfov region, which owns 50.43% of the graduates in private higher education.

Figure no.3: Regional concentration of graduates in higher education, in the year 2013



Sources: Data processed by authors

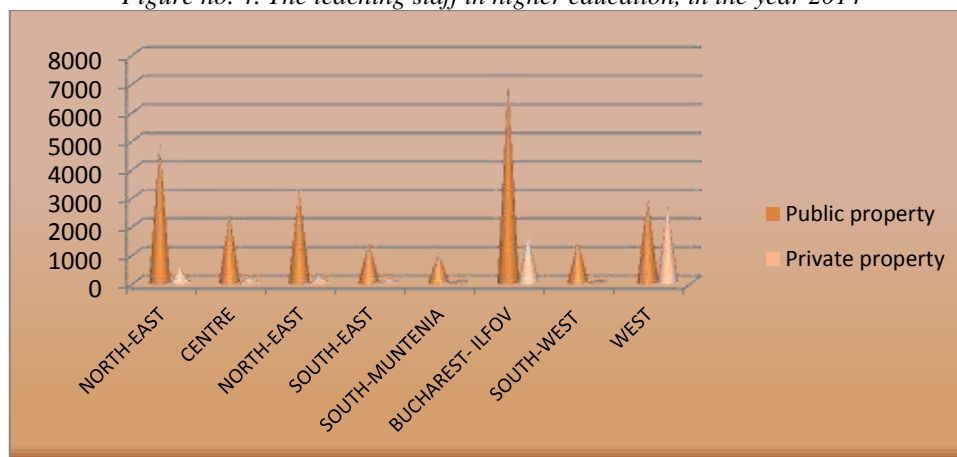
Workforce in higher education

The number of teaching staff increased every year since 1990, in 2014 it was two times higher than in 1990, following the same increasing trend as the higher education institutions and the number of graduates in higher education.

At present, in Romania, the practices concerning the development of the teaching staff did not substantially change and the study programmes for teachers remained the same. There are no master programmes in teaching yet and the implementation of these regulations was postponed again and again.

If we refer to the concentration of the teaching staff in higher education, it is not essentially different from the two other indicators in the previous analysis. There is a significant regional concentration, the Gini coefficient was 0.4246 and Struck coefficient was 0.2515, at total level in 2014. In the private sector, the concentration was higher, the Gini coefficient was 0.5875 and Struck coefficient was 0.5016. Once again, the Bucharest-Ilfov region concentrated most of the teaching staff, 28.87% in public sectors and 29.87% in the private sector.

Figure no. 4. The teaching staff in higher education, in the year 2014



Sources: National Institutes of Statistics, <http://www.insse.ro/cms/>

5. Conclusions

The higher education in Romania is affected by the requirements arising from the economic, political and social fields. The universities face similar challenges, regardless of where they operate. They must respond to the complex and pretentious demands of their direct beneficiaries, the students, and also to the demands of the other players on the labour market seeking well-trained graduates.

The higher education system has a complex structure in terms of institutional development

efforts and in terms of sustainability. Development strategies of higher education should focus on developing coherent politics on the long-term, taking into consideration the fact that the results of the investments in this area are seen after several years.

The universities concentration is a highly debated topic and we could bring into discussion arguments that support the cause and that contradict it. One thing is clear - the whole system development should be based on encouraging the mobility of students and professors by accessing available scholarships and research grants.

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