

Aspects of the Evolution of the Existing Pre-university Education at Regional Level in 1996-2014

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Abstract

Education has not received the necessary attention in the past 20 years, neither from a human resources perspective, nor from an infrastructure standpoint. Many reforms were predominantly concerned with the material aspects, as opposed to the educational effectiveness. This led to a reduction in the number of educational establishments with large implications especially for primary education. Based on these considerations, the paper presents aspects of developments in the infrastructure of the pre-university education system in eight development regions of Romania. In particular, the paper addresses developments in the number of establishments structured in pre-primary, primary, secondary, upper secondary and vocational education. The analysis conducted shows a dramatic reduction in the level of vocational education as well as in the number of pre-primary establishments, but also a certain degree of stability and even an increase in the number of upper secondary units.

Key words: education, educational units, ISCED, development region, Romania

JEL Classification: I21, I28, P36

Introduction

In recent years the development of pre-university education was meant to receive more and more attention in Romania due to the entry into the European labour market and the need for the Romanian educational system to meet the required European standards.

In Romania, eight development regions were established, each region encompassing several counties. These developing regions were the result of an agreement between the county councils and the local ones. They do not represent the administrative territorial units and have no legal personality of their own.

Among the areas covered by regional policies, pre-university education was designed to develop the educational process through educational policies. The aim was to create added value and contribute to the sustainable development of the communities in order to achieve the "knowledge society" in Romania.

In the context of a dynamic, unstable society facing a transition period, a strategic approach to the educational policy in Romania was required. The purpose was to efficiently address the concerns relating to the human resource development and the ever-changing needs of the economy and society as a whole.

The main objectives set in 2000 with the Lisbon European Council Conference (23 to 24 March 2000) include a substantial increase of investment in education (Cramer et al, 2006). In 2006, the European Council reaffirmed the key factors that can ensure Europe's productivity growth: knowledge, research, innovation, and education. However, this process has not evolved as expected in Romania and there are still significant differences between the various regions.

It should also be noted that new measures for the development of education were imposed in Europe as a fundamental factor in productivity growth (Barakat et al, 2010,pg.1-16, Blyth, 2009,pg 1-8). This despite the economic crisis that emerged in 2008 not having large effects upon

education, with the exception of school abandonment accentuated during periods of recession (Rumberger, 2001, pg 1-34),

Based on these general observations and taking into account the International Standard Classification of Education (ISCED, 1997), this paper emphasizes the key changes registered in the period 1996-2014 and the differences between the eight existing development regions.

Considering that it is an analysis at the regional level, the analysis of trends in the number of educational establishments will only address pre-university education. Tertiary education is mainly concentrated in major universities, which benefit from a renowned tradition. Moreover, the population involved in these studies originates from virtually all regions of Romania. Consequently, the characteristics of the specific development regions pertaining to each university do not influence this part of the population. On the other hand, considering that during the period 1996-2013, pre-university education has undergone many transformations, the paper is focused on the development aspects pertaining to four educational categories, namely Preschool education institutions (PEI), Primary and gymnasium education institutions (PGEI), High school institutions (HIS), and Vocational education institutions (VEI).

The territorial structural analysis is based on Nomenclature of Units for Territorial Statistics (NUTS), Regulation No 176/2008 (eur-lex, 2014). In accordance with NUTS, Romania is structured in four Macro regions and eight development regions, as detailed below (Blyth, 2009, pg 1-8):

- Macro region 1 (Macro_1), regions: North-West (Bihor, Bistrița-Năsăud, Cluj, Maramureș Sălaj) and Center (Alba, Brașov, Covasna, Harghita, Mureș, Sibiu);
- Macro region 2 (Macro_2), regions: North -East (Bacău, Botoșani, Iași, Neamț, Suceava, Vaslui) and South -East (Brăila, Buzău, Constanța, Galați, Tulcea, Vrancea);
- Macro region 3 (Macro_3), regions: South-Muntenia Argeș, Călărași Dâmbovița, Giurgiu, Ialomița, Prahova, Teleorman) and Bucharest-Ilfov (Ilfov, Municipiul București);
- Macro region 4 (Macro_4), regions: South - West Oltenia (Dolj, Gorj, Mehedinți, Olt, Vâlcea) and West (Arad, Caraș-Severin, Hunedoara, Timiș).

The analysis was based on the series of data provided by the National Statistical Institute of Romania (INSSE, 2016). SPSS (Cramer, 2006) and Excel (Zaharia et al, 2014, pg.243) were used for processing data.

Results and discussion

Due to the constant reorganisation of the educational system in Romania, the structure of pre-university education institutions has seen significant changes, especially after 1996. Considering the large overall number of educational institutions, this study uses indices of the evolution of their number starting from 1996, in order to provide a better understanding of the phenomenon. These are represented graphically in Figure 1.

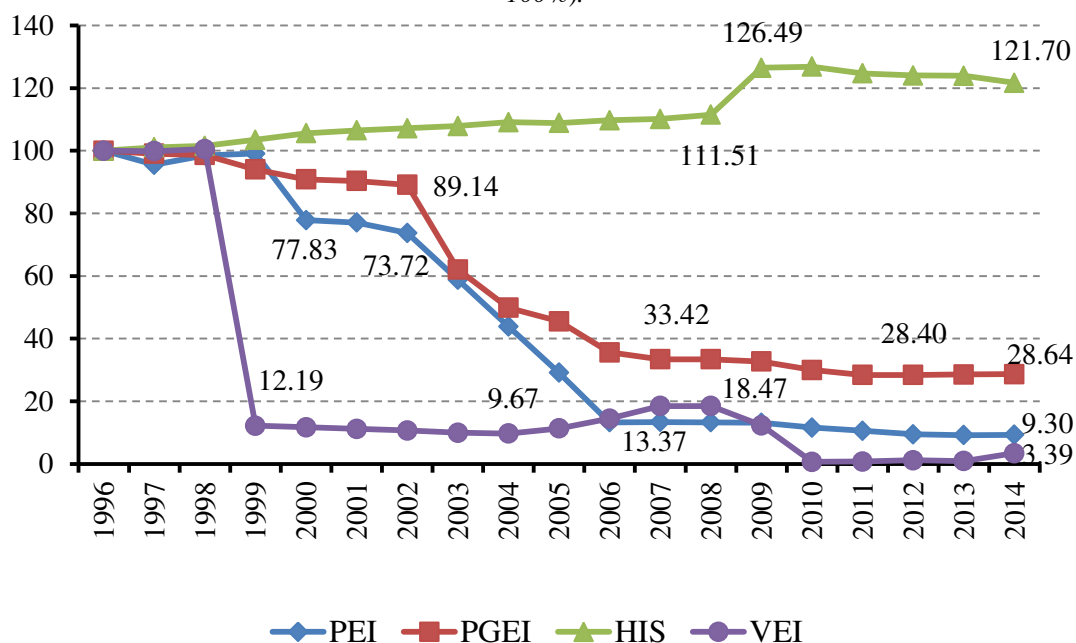
While the number of educational institutions remained relatively the same until 1998, there are fundamental changes after this period. The most significant change can be seen at the vocational level, where the number of establishments has dropped from 800 units in 1998 to 97 units in 1999 (a 87.88% reduction).

At regional level, the most significant reduction in the number of Vocational education institutions was recorded in the Center development region (94.49%), and the least significant in the North-East region (76.52%). Similarly large reductions in the number of Vocational education institutions have been recorded in the following development regions: Bucharest-Ilfov (91.53%), South-West Oltenia and West (91.1%) and South-Muntenia (90%). In fact, with the exception of the North-West development region, Moldova and Dobrogea, the vocational education was disbanded.

Preschool education establishments recorded the first significant reduction. At the national level, the number appears to be 22.17% lower in 2000 than in 1996, followed by a certain stability. The dramatic reduction in the number of preschool establishments occurred in the period 2002-2006. Thus, in 2006 there were only 13.37% of units compared to the number of units operating in 1996.

At the level of the development regions, there are significant differences (Table 1). Thus, the year 2000 recorded dramatic reductions in the number of preschool establishments in the northern regions of the country compared to 1999. In North-East, the number is nearly half, while the North-West region registered a drop in 33.44%, and the Macro_4, (development regions South-West Oltenia and West), experiences a reduction of about 20%. On the other hand, in the Center development region and Macro_3 (South-Muntenia and Bucharest -Ilfov development regions), there are no significant changes until the year 2002. Moreover, the South-East development region t (Figure 2) experiences changes starting from 2004.

Figure 1-Developments in the number of educational units between 1996-2000 at the level of Romania. (1996 = 100%).



Source: own construction

The Government adopted various restructuring projects aimed at reducing the activity of these establishments in the period 2000-2006. This has had a negative impact on the population from areas, that until the last decade of the Millennium XX, were characterised by a large demographic of young people. An example in this regard is the region of South-West Oltenia where previously strong industries such as coal mining or the energy sector have dramatically reduced their activity. Accordingly, in addition to the Government's lack of interest for educational reform, two phenomena have had a significant impact on the number of preschool establishments: young population migration and decreasing birth rates.

Table 1-Annual reduction rates in the number of pre-school establishments of the regions in the period 2000-2006 (%)

Development regions	2000	2001	2002	2003	2004	2005	2006
North-West	-33.44	-1.10	0.24	-47.04	-46.65	-30.17	-10.40
Center	-1.87	-0.06	0.49	-10.40	-10.59	-26.28	-69.22
North-East	-43.92	0.63	-3.15	-0.94	-28.15	-74.01	-25.39
South-East	-8.64	0.80	-8.51	-7.65	-19.64	-39.43	-55.26
South-Muntenia	-9.87	-0.17	-1.07	-29.24	-52.25	1.68	-59.93
Bucharest - Ilfov	-8.95	1.69	2.00	-16.34	2.73	-4.18	-3.17
South-West Oltenia	-21.37	-8.52	-20.72	-48.83	-6.73	-25.69	-66.57

West	-20.40	0.95	-1.05	-0.95	-17.99	-31.85	-71.26
Total	-21.44	-0.99	-4.34	-20.23	-25.33	-33.73	-54.36

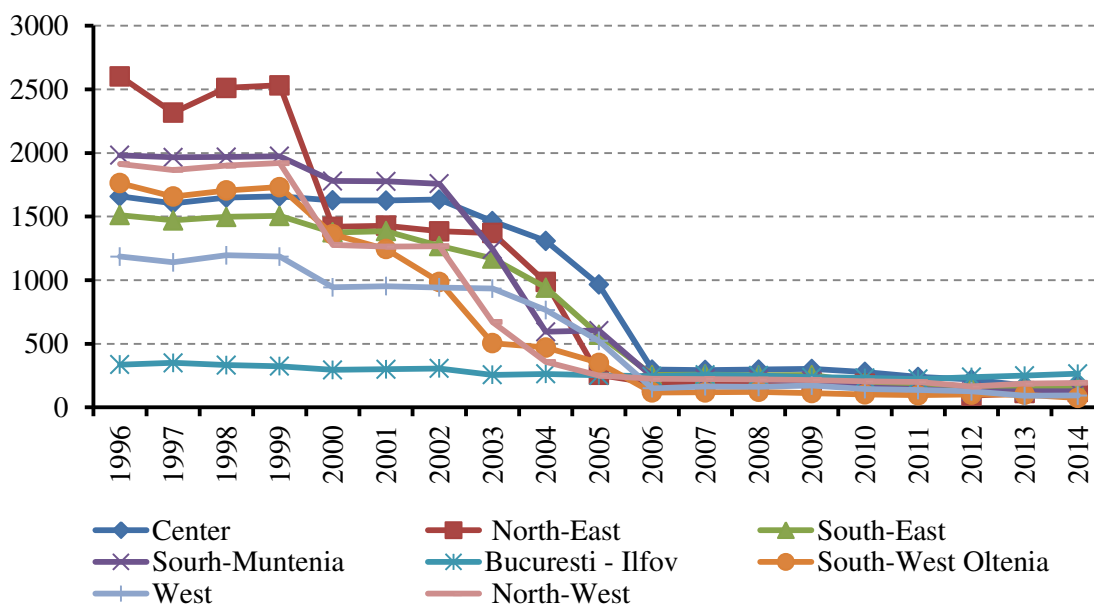
Source: own construction

With the exception of the year 2004, in the region of South-West Oltenia, the number of pre-primary education establishments decreased annually with values ranging from 20.72% in 2002 and 66.57% in 2006, thus their number represented only 6.64% compared to 1996.

In the period 2003-2006, dramatic reductions in the number of preschool establishments were registered in the North-West region, with values ranging from 47.04% in 2003 and 10.40% in 2006; the Center region, with values between 10.40% in 2003 and 69.22% in 2006, and the South-Muntenia region, where, aside from 2005, the annual reductions were employed between 24% in 2003 and 59.93% in 2006.

In Moldavia and Dobrogea a new wave of significant reductions in the number of preschool establishments was registered in the period 2004-2006. Thus, in northern Moldavia (North-East development region), the year 2005 saw the most dramatic reduction in the number of educational units in this category (74.01%). Exemplary in this regard, in one year 729 units were abolished (with serious implications for the teaching staff). As a result, only 191 pre-primary establishments were functioning in 2006 as opposed to 2602 units in 1996.

Figure 2-evolution of number of establishments of pre-school education at the level of regions in Romania in 1996-2014.



Source: own construction.

The only region where no significant changes in the number of educational establishments were observed is the Bucharest-Ilfov region (with the exception of 2003 which recorded a 16.34% reduction of the number of pre-primary education establishments). This is explained, on the one hand, by the relative stability of the labour supply, positively affecting the standard of living and, on the other hand, by maintaining the birth rate at a constant level in this region.

The migration of the population from the regions affected by the collapse of the majority of Romanian industry branches, as well as the low birth rates which in turn led to a decrease in population at a pre-primary level, had considerable effects on primary and secondary education. However, these effects were not significantly felt in the number of educational establishments. At these levels, the decrease of pre-primary population was mainly felt in the number of years corresponding to a certain training level.

The analysis of the fluctuations in the number of upper secondary education institutions shows an increasing trend in their number. This is not caused by an increase in population but is to a large

extent the result of the changes brought to secondary education units in high schools. However, there are periods in which the changes occurred in an opposite direction. (table 2).

The oscillating manner in which institutions are either established or abolished shows a high degree of uncertainty at the policy level. For instance, in the North-East development region 67 high schools were founded in 2009, only to have 14 high schools abolished two years later and another 5 in 2012. Although this can also be explained by the movement of population to areas with more opportunities, the long-term effects on the educational system are negative, at least when considering the need to ensure access to education. Increasing the distance between certain types of educational institutions affects the possibility of continuing studies in a negative manner and even leads to lower interest for further studies.

Tabelul 2 – Evolutions of Primary and gymnasium education and High school institutions at development regions level in the period 2002 - 2012

	Development regions	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Primary and gymnasium	North-West	-39	-714	-251	-95	-189	-20	-6	4	-58	-10	9
	Center	-17	-295	-280	-193	-167	-73	1	-3	-24	-18	-22
	North-East	-24	-872	-340	-176	-280	-24	-1	-48	-30	-43	0
	South-East	-9	-69	-288	-75	-357	-4	2	-19	-79	-5	-6
	South-Muntenia	-37	-335	-482	0	-196	-51	0	-9	-75	-74	-15
	Bucharest - Ilfov	-1	-51	-2	-4	3	-2	1	1	-8	-12	-1
	South-West Oltenia	-20	-749	-42	-53	-141	-63	2	-4	-41	-17	2
	West	-18	-653	0	-7	-38	-68	0	-18	-61	-40	35
High school	North-West	2	1	8	-3	4	5	6	33	3	3	-5
	Center	-1	3	0	-3	-1	0	1	12	-2	-5	-1
	North-East	8	3	5	0	1	-1	1	67	1	-14	-5
	South-East	-1	-2	0	0	2	0	2	32	1	-4	-3
	South-Muntenia	-1	0	0	2	2	0	4	32	0	-6	-1
	Bucharest - Ilfov	0	2	3	0	1	0	1	2	5	1	1
	South-West Oltenia	2	0	-2	1	1	1	-1	14	-3	-3	0
	West	0	2	2	0	1	0	4	2	0	0	5

Source: own construction

In the 2002-2012 period, with regard to the Primary and gymnasium education institutions number, 2003 stands out as the year with the most significant changes when, at national level 3738 units were abolished. The developing regions most affected were North-East (872 units), South-West Oltenia (749 units), North-West (741 units), West (653 units), South Muntenia (335 units) and Center (280 units). In the same year, 9 High school institutions were founded (the Center and North-East regions had 3 units each, the West and Bucharest-Ilfov areas had 2 units each, the North-West region had 1 unit, while in the South-East region 2 units were abolished).

With regard to High school institutions, 2009 is a remarkable year. To this end, 194 High school institutions were founded, the majority (67 units) pertaining to the North-East development region, while the lowest number (2 High school institutions) was attributed to the Bucharest-Ilfov and West development regions. In the same year, however, 96 Primary and gymnasium education institutions were abolished, 48 of them from the North-East development region.

Developments in the number of pre-university educational institutions in the eight development regions of Romania highlight not only the continuous changes of the educational system in Romania but also the economic implications to the detriment of certain regions affected by the migration and low birth rates phenomena. Essentially, the issues presented above show the perceptibly divergent processes and notable differences between the development regions in Romania.

Conclusions

The aim of this paper was to analyse the evolution of the pre-university education infrastructure in the eight development regions.

The developments in the number of pre-school, primary, secondary, upper secondary and vocational institutions were addressed. The analysis conducted led to the following conclusions:

- By 1998, the number of educational establishments remained virtually at the same level, with a major change at the vocational level where the number of units has fallen drastically. At the regional level, the most significant reduction was experienced in the Centre (94.49%), while the lowest impact was in the North-East region (76.52%).
- There has been a drastic reduction of pre-primary education establishments in 2002-2006. At the regional level, the most significant reduction occurred in the northern regions. (North-East – about 50 % and North-West 33.44%)
- The only region with significant changes in terms of pre-primary education is the Bucharest-Ilfov region. The number of units of upper secondary education meets an increase which is mainly the result of the transformation of certain secondary schools into high schools.

The analyses carried out point to a reduction in the level of vocational education and the number of pre-school establishments. Nonetheless, the analyses also show certain stability at the level of upper secondary education in all regions of Romania.

References

1. Barakat, B., Holler, J., Prettnner, K. and Schuster, J., 2010. “*The Impact of the Economic Crisis on Labour and Education in Europe*”, Vienna Institute of Demography, *Working Papers Series*, 6/2010, pg 1-16
2. Blyth, A., 2009. “*School buildings in today’s crisis*”, CELE Exchange, Centre for Effective Learning Environments, pg. 1-8. DOI: <http://dx.doi.org/10.1787/223658816566>
3. Cramer, D., Howitt, D., 2006. *Introducere in SPSS pentru psihologie*. Editura Polirom, Iasi.
4. European Council, Lisbon European Council Conference (23 to 24 March 2000) http://www.europarl.europa.eu/summits/lis1_en.html (accessed March 28, 2016).
5. INSSE, 2016. <http://statistici.INSSE.ro/shop/index.jsp?page=tempo2&lang=ro&context=25>, [SCL101B - Unitatile scolare pe niveluri de educatie, medii de rezidenta, macromregiuni, regiuni de dezvoltare si judete](#)
6. ISCED, 1997. *The International Standard Classification of Education*, UNESCO General Conference November 1997, http://www.unesco.org/education/information/nfsunesco/doc/iscsed_1997.html (accessed March 25, 2016).
7. Oprea, C., Zaharia, M., 2011. *Elemente de analiza datelor si modelare utilizand Excel*. Editura Universitara, Bucuresti.
8. *Regulation No 176/2008 of the European Parliament and of the Council*, <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008R0176&from=EN>, Retrieved January 20, 2014
9. Rumberger, R., 2001. “*Why students drop out of school and what can be done*”, Conference proceedings of Dropouts in America: How Severe is the Problem? What Do We Know about Intervention and Prevention? Harvard University, January 13/2001, pg 1-34.
10. Zaharia, M., Balacescu, A., 2014. *Characteristics of Unemployment in South West Oltenia Region in 2004 -2011*. Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Issue 4/2012, p.243.
11. Zaharia, M., Popescu, C., 2015. *Comparative Analysis on the Influence of the Economic Crisis on Education in some European Countries*, International Journal of Synergy and Research (IJSR), vol.4, issue 1/2015