The literature[33] identifies quality through performance. The performance of HES is a complex socio-economic relationship, influenced by both quantitative and qualitative factors, which manifests itself in a wide variety of forms.

In other train of thoughts, the quality is: *Client-based perspective*, *Process-based perspective, Results-based perspective (product), value-based perspective, Transcendent perspective.*[34]

Quantifying the performance, namely the quality of a system, is achieved by analysing the internal structural capital; human capital and external relational capital, which represent the three components of intellectual capital. By setting the variables in HES and their systematization for each component, the following scheme *analysis of the condition and quality of HES* was done:

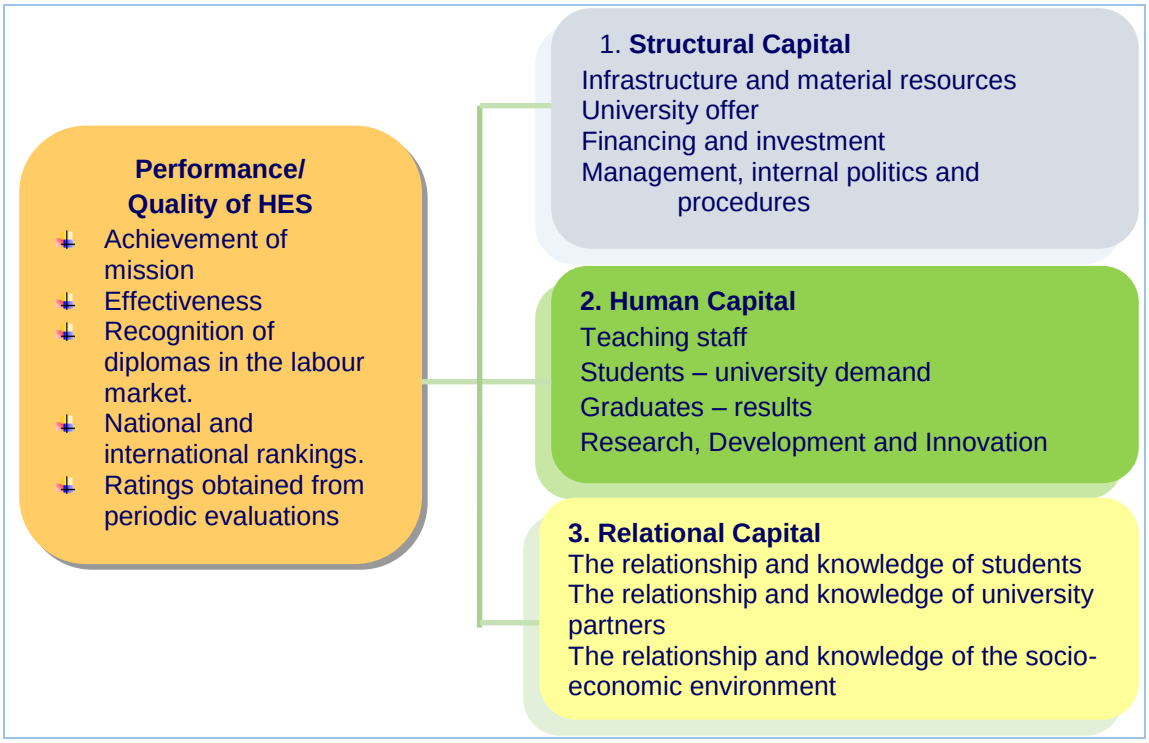


Figure II. 1 The logical diagram of analysing the condition and the quality of NHES
Source: Authors

[33] *Models existing in the literature for measuring the quality of an educational system:*
- ✓ *SERVPERF Model – the performance of service quality – Cronin and Taylor, 1992*
- ✓ *HEdPERF Model – the performance of higher education institutions – Firdaus Abdullah,2006;*
- ✓ *SERVMO Model – Service orientation towards the market (perception of service quality in higher education) – Voon, 2006;*
- ✓ *EP Model – evaluation of performance/results– Ewell,1999 Hämäläinen, 2001*

[34] *Learning in Action: A Guide to Putting the Learning Organization to Work By David A. Garvin, Harvard Business School Press, 2000*

Under this scheme for quality analysis of HES, the second part of the Barometer is structured from the macro to the micro aspects of RHES, from general to particular.

Thus, it is intended that the research conducted within QUALITAS project to provide a new direction ***for analysis and investigation of the condition and quality of higher education system.***

2.1 Structural capital of RHES

By analysing the potential and the existing demand in the higher education system based on key indicators shown by NIS, we intend to compare the performance dynamics of the higher education system, overall and on the two forms of ownership (public and private) at national level in the period 2000-2013. The period of analysis begins with the 2000/2001 academic year, with the implementation of the Bologna system in the EHEA.

Through this analysis, we intended to show which ownership (state or private) offers a better training and has an optimized system. Although the statistics presented by the National Institute of Statistics don't allow such an analysis, we can still see the efforts and effects in terms of inputs and outputs. Therefore, efforts and results can be analysed at the system level and at the level of the two forms of ownership, in terms of quantity.

2.1.1 Infrastructure and material resources

Statistics on the national education system infrastructure provides information on both educational networks and conditions offered to beneficiaries of human and material resources for ensuring quality educational processes. The continuous decline in the birth rate after 1990 has reduced the school age population, prompting new guidelines and restructuring of the national education network in general and HES in particular.

After an expanding period units network in the private higher education starting with the academic year 2002/2003, their dynamics experienced a significant variation therefore the higher education institutions statistics on the two forms of ownership changes clearly from one year to another, reflecting an increasingly competitive "market" of the higher education system. At the beginning of the period analysed, in Romania there were 59 state educational institutions and 67 private. In the last year presented the number of state institutions decreased by 3 institutions, and the private one with 20 institutions. Currently, in the higher education system, the educational institutions have a balanced distribution between the public and private sectors (51.9% public and 48.1% private).

Currently, 590 faculties operate within 103 higher education institutions, of which 405 are in public universities.

Table II. 1 Data on higher education institutions in Romania by type of ownership in the period 2000-2013

University year	Higher education institutions			Faculties		
	Total	state	private	Total	state	private
2000/2001	126	59	67	696	438	258
2001/2002	126	57	69	729	465	264
2002/2003	125	55	70	742	489	253
2003/2004	122	55	67	754	513	241
2004/2005	117	55	62	742	510	232
2005/2006	107	55	52	770	554	216
2006/2007	104	56	48	755	558	197
2007/2008	106	56	50	631	432	199
2008/2009	106	56	50	617	420	197
2009/2010	108	56	52	624	417	207
2010/2011	108	56	52	629	422	207
2011/2012	108	57	51	614	410	204
2012/2013	107	56	51	596	405	191
2013/2014	103	56	47	590	405	185

Source: https://statistici.insse.ro/shop/ accessed June 2015

In terms of regional distribution, 17 institutions/159 faculties are in Bucharest-Ilfov Region, 15 institutions/ 96 faculties in North West Region, 13 institutions/ 73 faculties in Central Region, 14 institutions/70 faculties in North East Region, 7 institutions/53 faculties in South East, 4 institutions/39 faculties in South Muntenia Region, 12 institutions/65 faculties in Western Region and 4 institutions/35 faculties in South-West Oltenia Region.

Most higher education institutions are located in major universities of the country: there are 33 universities/faculties 158 in Bucharest, 10 universities/ 52 faculties in Cluj-Napoca, 10 universities/48 faculties in Iaşi and 8 universities/42 faculties in Timişoara. The territorial distribution of private university network follows the same distribution network as the public sector, concentrating in the same university centers as the public universities. Thus, in the year under review, there were 16 private universities in Bucharest, 5 universities in Iaşi, 4 in Cluj-Napoca and 4 in Timişoara.

The material base own by the university institutions in the academic year 2013/2014 comprised 7995 amphitheatres and classrooms, of which state institutions have 5908 classrooms and auditoriums, meaning a share of 73.89% in total RHES, 9654 laboratories (93.32% in state institutions), 633 workshops (96.84% own by the state), 279 equipped sports field (84.17% in state institutions) and 15 swimming pools (of which 13 in state institutions).

An important indicator of the efforts made by higher education institutions to facilitate access of students and teachers to ITC is the level and the evolution of the computers number used in educational processes. If in 2001 the number of computers installed in higher education institutions was 19,865, in the 2013/2014 academic year, there were 104,686 units in total RHES, of which 13,325 units in private institutions (12.73%).

2.1.2 University offer

The second element of NHES characterization is *the university offer*. In this respect, we need to make a clear distinction between the indicators that measure and compare this component and which is the data source.

The university offer comprises:

A. **The educational offer** refers to the system of direct and indirect learning experiences offered to students/trainees.

- ***In a board sense*** = means the fundamental fields, science branches, bachelor fields, study programs, disciplines.
- ***In a narrow sense*** = refers to the actual content of the training process.

In the board sense, the university enrollment offer is presented annually in Annex 1 GD – *the Nomenclature of university fields and specializations/programs*. According to the Government Decision 580/2014[35], the educational offer of RHES is structured in six key areas in which there are 32 science branches, forming 86 bachelor fields where 379 specialisations/study programs fit in.

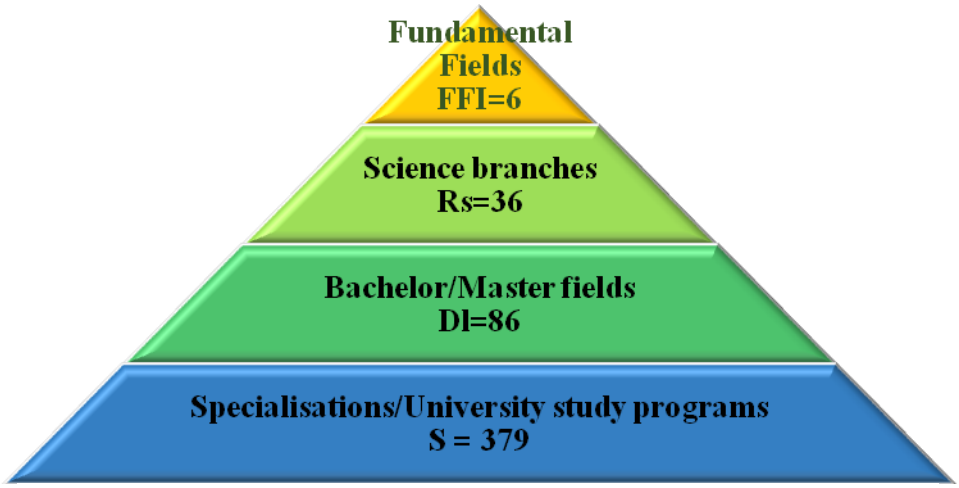


Figure II. 2 The structure of Nomenclature of university fields and specializations/programs
Source: Authors

This component is a macro/aggregate size of the system. In terms of content and structure, the educational offer is a process developed over time, resulted in the development plan of RHES, according to national strategy in general and management plans and tasks assumed by each university/institution in particular.

In the near future, this nomenclature divided into 10 fields and containing 109 bachelor fields, will undergo some changes according to ISCED[36]-2013 imposed by UNESCO.

[35] *The Nomenclature of university fields and specializations/programs, Annex OG GD 580*
[36] *ISCED – International Standard Classification of Education*

B. **The enrollment offer** refers to the organizational structure of an institution and the enrollment capacity of higher education institutions.

- ***In a board sense*** = specializations/ study programs, departments, faculties, university campus, technical and material resources and facilities provided.
- ***In a narrow sense*** = the maximum number of students that can be enrolled in the first year of bachelor study programs, master fields, doctoral fields and the facilities provided (number of seats financed by the budget[37] and seats paid).

The enrollment offer is published annually in GD – Annex 2 for each HEI, not being sum up on fields and study programs at national level.
According to GD 580/2014, in Romania there were 96 HEIs, of which 55 state institutions, 37 accredited private HEIs and 9 authorized Foundations.
The development of HEI, as number of institutions, happened mostly after 1989, when only 32 universities were functional (*Annex II.1 – Year of establishment of HEI in Romania).*
The enrollment capacity, in terms of size/numbers, is determined following regular evaluation processes conducted by ARACIS.

It should be admitted that currently, the value of enrollment capacity for many study programs is very high because the programs were assessed 4-5 years ago, when the number of students enrolled was almost double.

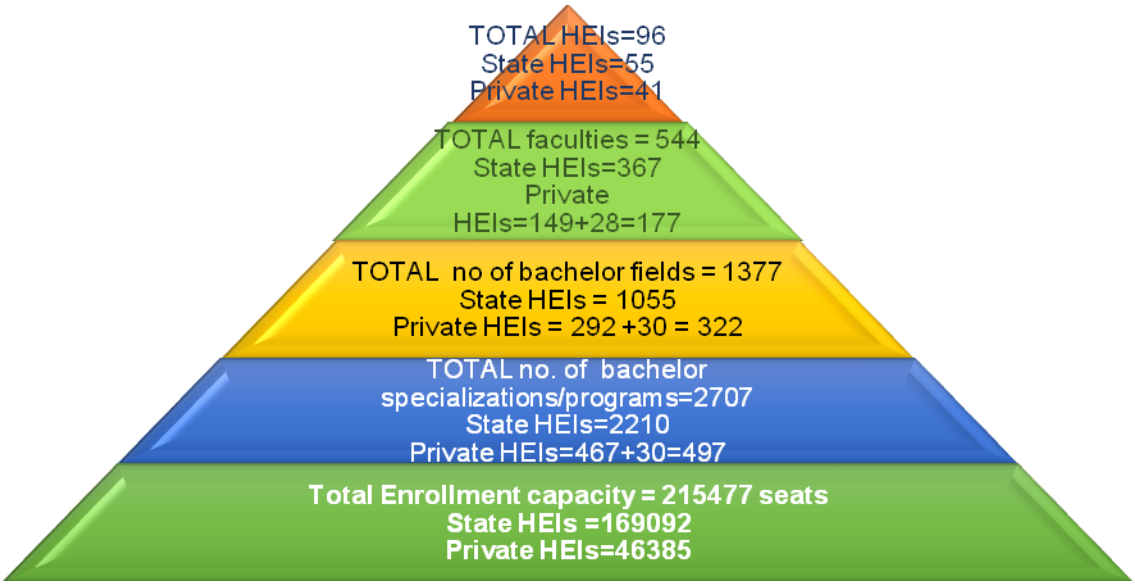


Figure II. 3 Structure of RHES by state and private university fields and specializations/study programs in the academic year 2014-2015
Source: Authors

The combination of the two structures shown in Figure II.2 and Figure II.3 resulted in the Matrix of Education and Enrollment Offer by fields/bachelor specialisations at NHES level – MOSNISLicenta[38].

[37] *Annual enrollment for studies financed from the state budget*

Table II. 2 Fundamental fields and enrollment capacity by bachelor fields and ownership in the academic year 2014/2015

FFI Code	Fundamental field (FFI)	Bachelor Field (BF)	Maximum number of students that can be enrolled [39]		
			State HEIs	Private HEIs	Total
10	Mathematics and Natural Sciences	Mathematics	1990	100	2090
		Informatics	3955	610	4565
		Physics	1091	30	1121
		Chemistry	1075	0	1075
		Chemical engineering	1612	0	1612
		Geography	4279	810	5089
		Geology	220	0	220
		Environmental science	2160	260	2420
	Total FFI 10		**16382**	**1810**	**18192**
20	Engineering sciences	Civil engineering	4035	0	4035
		Plumbing engineering	1010	0	1010
		Electrical engineering	2390	0	2390
		Energy engineering	1230	0	1230
		Electronics engineering and Telecommunications	2880	50	2930
		Geological engineering	265	0	265
		Geodetic engineering	1625	0	1625
		Mining, oil and gas	470	0	470
		Aerospace engineering	415	0	415
		Automotive engineering	1695	0	1695
		Transportation engineering	585	0	585
		Agronomy	1725	0	1725
		Horticulture	1240	90	1330
		Wood and timber engineering	260	0	260
		Forestry	1065	60	1125
		Engineering and management in agriculture and rural development	2375	980	3355
		Biotechnology	490	45	535
		Food engineering	2820	665	3485
		Zootechnics	820	0	820
		Computers and information technology	2610	100	2710
		Systems engineering	1913	140	2053
		Mechanical engineering	2511	0	2511
		Industrial engineering	4092	50	4142
		Marine engineering and Navigation	1285	0	1285
		Applied Engineering Sciences	1590	0	1590
		Naval architecture	235	0	235
		Mechatronics and robotics	1285	50	1335
		Materials engineering	1046	0	1046
		Environmental engineering	3184	100	3284

[38] *See also the analysis and correlation instruments of NHES*
[39] *Enrollment capacity*

FFI Code	Fundamental field (FFI)	Bachelor Field (BF)	Maximum number of students that can be enrolled [39]		
			State HEIs	Private HEIs	Total
		Engineering and management	4017	100	4117
		Combat engineering	25	0	25
		Weapons, missiles and ammunition engineering	75	0	75
	Total FFI 20		**51263**	**2430**	**53693**
30	Biological and biomedical sciences	Biology	1415	60	1475
		Health – 4, 5 or 6 years	10475	660	11135
		Health – 3 years	1435	210	1645
		Veterinary medicine	995	50	1045
	Total FFI 30		**14320**	**980**	**15300**
40	Social sciences	Law	6115	7535	13650
		Administrative sciences	4735	2015	6750
		Communication sciences	3686	1350	5036
		Social assistance	2030	310	2340
		Sociology	2092	410	2502
		International Relations and European Studies	1975	525	2500
		Political sciences	1910	475	2385
		Military science, Information and Public Order	1337	50	1387
		Business administration	7250	5345	12595
		Cybernetics, statistics and economic informatics	1970	560	2530
		Accountancy	5325	4495	9820
		Economics	1400	175	1575
		Finances	4760	4920	9680
		Management	5025	3455	8480
		Marketing	3305	1970	5275
		International Business and Economics	2550	1650	4200
		Psychology	2500	1650	4150
		Educational Sciences	4485	625	5110
	Total FFI 40		**62450**	**37515**	**99965**
50	Humanities and arts	Language and literature	7828	1160	8988
		Applied foreign languages	1618	300	1918
		Philosophy	610	65	675
		History	1979	365	2344
		Theology	3186	310	3496
		Cultural studies	940	0	940
		Architecture	915	120	1035
		Urbanism	130	0	130
		Visual arts	2131	35	2166
		Theatre and performing arts	437	65	502
		Cinematography and media	151	125	276
		Music	1015	180	1195
	Total DFI 50		**20940**	**2725**	**23665**
60	Sport science	Physical education and sport	2715	525	3240

FFI Code	Fundamental field (FFI)	Bachelor Field (BF)	Maximum number of students that can be enrolled [39]		
			State HEIs	Private HEIs	Total
	and physical education	Physical education and sport	2715	525	3240
	Total FFI 60		**3737**	**925**	**4662**
Total RHES			**169092**	**46385**	**215477**

Source: Processing after OG of Romania year 182 (XXVI) – No. 527, 16th July 2014 GO 580

According to information in *Table II.,* in the academic year 2014/2015, the educational offer included 376 distinct study programs and the 96 institutions of higher education, school capacity is 215 477 seats, of which 78.47% in HEI state.
In Figure II.4., first 30 specializations are ranked after the maximum figures of enrollment capacity in the academic year 2014-2015.



Figure II. 4 Ranking of specialisations by maximum figures of enrollment capacity in the academic year 2014-2015

2.1.2.1 The complexity of higher education institutions

By summarizing the data presented by universities, we get information related to the complexity of higher education institutions, namely the number of fields, as illustrated in Table II. 3. Of the total 92 accredited institutions, 14 have all 6 fields, meaning that they are comprehensive HEIs, of which 2 are private institutions. Most of these universities have a single domain (41 institutions, of which 21 are owned by the state).

Table II. 3 The complexity of higher education institutions by the number of fields

Type of university/ no. of fields	State institutions	Private institutions	Total institutions
with all 6 fields	12	2	14
with 5 fields	6	0	6
with 4 fields	4	4	8
with 3 fields	3	1	4
with 2 fields	9	10	19
with only one field	21	20	41
Total	55	37	92

Source: Processing upon Romania's OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580

However, a grouping of universities by key fields and forms of ownership points out that higher education institutions are oriented towards social sciences (*Table II.4*).

The most common fundamental field in the analysis is Social sciences, which can be found in 63 HEIs, of which 33 state institutions, followed by the Humanities and arts with 48 institutions, and the field of Biological and biomedical sciences with 25 state HEIs and only 4 private HEIs.

Table II.4 Centralizer of number universities by fundamental fields and forms of ownership

Code FFI	Fundamental fields (FFI)/ Type of instruction	State HEIs	Private HEIs	Total HEIs
10	Mathematics and Natural sciences	23	9	32
20	Engineering sciences	35	6	41
30	Biological and biomedical sciences	25	4	29
40	Social sciences	30	33	63
50	Humanities and arts	34	14	48
60	Sport science and physical education	19	5	24
Total		**55**	**37**	**92**

Source: Processing upon Romania's OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580

In the academic year 2014-2015, university offer/enrollment capacity of NHES was 215,477 seats, of which about 100,000 seats in Social sciences, followed at a big distance by engineering sciences with 53,693 seats. Biological and biomedical faculties accumulate only 15,300 seats (*Table II.5*).

Table II. 5 The maximum number of students that can be enrolled in the academic year 2014-2015 by fields and forms of ownership

Cod DFI	Fundamental field (FFI)	State HEIs	Private HEIs	Total HEI
10	Mathematics and Natural sciences	16382	1810	18192
20	Engineering sciences	51263	2430	53693
30	Biological and biomedical sciences	14320	980	15300
40	Social sciences	62450	37515	99965
50	Humanities and arts	20940	2725	23665
60	Sport science and physical education	3737	925	4662
Total no. of students that can be enrolled		169,092	46,385	215,477

Source: Processing upon Romania's OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580

A first analysis of the offer by fundamental fields (FFI) for the academic year 2014-2015 resulted in the following statistical information:

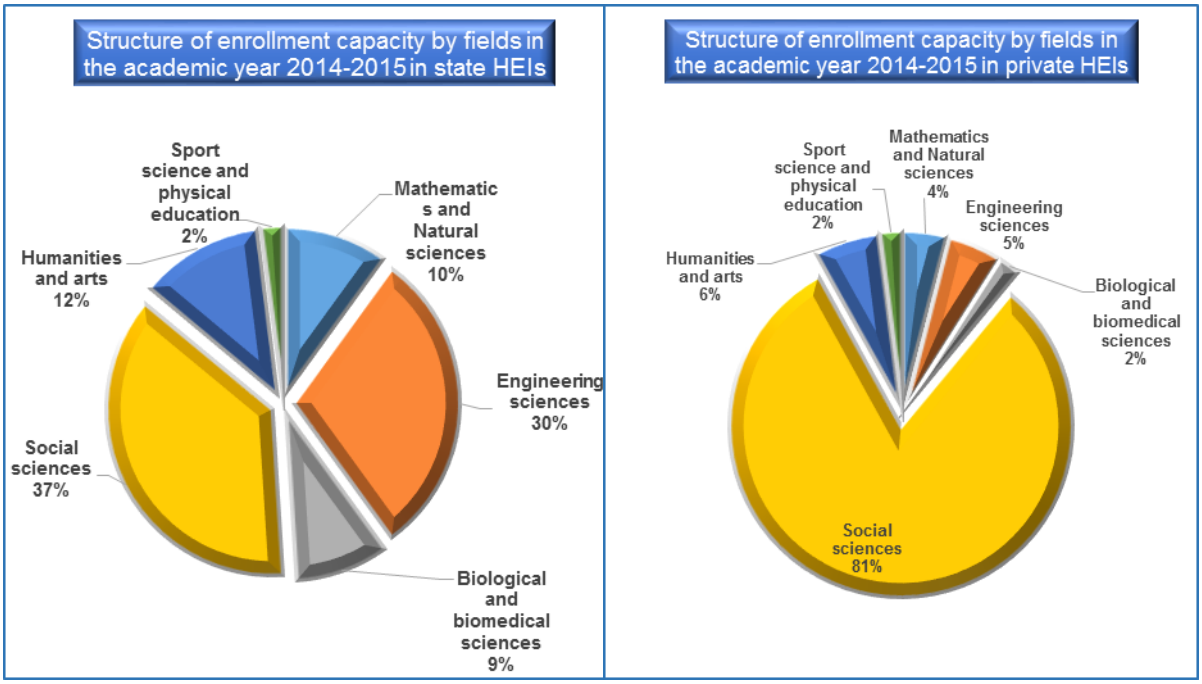


Figure II. 5 Structure of enrollment capacity by fields in the academic year 2014-2015 in state and private HEIs

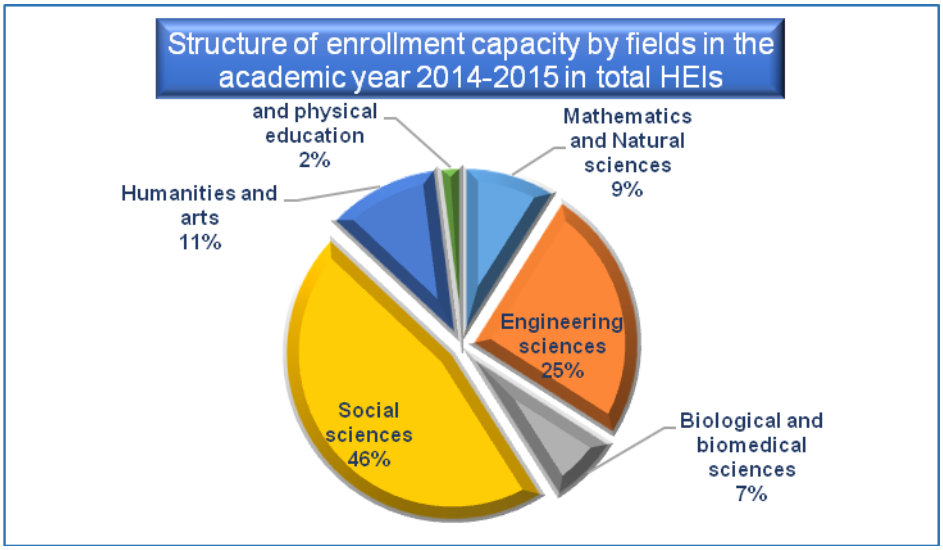


Figure II. 6 Structure of enrollment capacity by fields in the academic year 2014-2015 in total HEIs

2.1.2.2 Educational offer of the state institutions in the academic year 2014-2015

Centralizing the data in each state HEI shows that the educational offer of the public HEIs in the academic year 2014/2015 consisted of 367 faculties, which lists 2210 undergraduate study programs, as reflected in *Table II. 6.*

Table II. 6 Educational offer of state institutions regarding the number of universities, fields and undergraduate study programs in the academic year 2014/2015

Higher education institutions	No. of facul-ties	No. of under-graduate fields	No. of under-graduate programs	Maximum number of students that can be enrolled
1. Politehnica University of Bucharest	15	43	94	5880
2. Technical Univ.of Civil Engineer. of Bucharest	8	12	21	2790
3. “Ion Mincu” Univ.of Archit. & Urbanism of Buc	3	3	8	625
4. UASVM[40] of Bucharest	9	17	32	3630
5. University of Bucharest	19	38	97	10846
6. “C. Davila” Univ. of Medicine &Pharmacy Buc.	4	1	13	2550
7. Bucharest University of Economic Studies	12	13	35	7235
8. National University of Music Bucharest	2	1	7	183
9. National University of Arts Bucharest	3	1	11	465
10. Nat.Univ. Theatre&Film “I.L. Caragiale” Buch.	2	2	4	178
11. Nat. Academy of Physical Educ.&Sport Buc	2	2	5	537
12. NUPSPA [41]of Bucharest	4	7	11	1280
13. “1 Decembrie 1918” University of Alba Iulia	5	20	34	2244
14. “Aurel Vlaicu” University of Arad	9	24	38	2512

[40] *University of Agronomic Sciences and Veterinary Medicine*
[41] *National University of Political Studies and Public Administration*

Higher education institutions	No. of facul-ties	No. of under-graduate fields	No. of under-graduate programs	Maximum number of students that can be enrolled
15. “Vasile Alecsandri” University of Bacău	5	23	35	2467
16. “Transilvania” University of Brașov	18	53	107	7480
17. Technical University of Cluj-Napoca	12	52	96	6145
18. UASVM of Cluj-Napoca	5	12	31	2120
19. “Babeș-Bolyai” University of Cluj-Napoca	21	56	253	18909
20. “I.Hațieganu” Univ. Medicine&Pharmacy CN	3	1	14	1440
21. “Gheorghe Dima” Music Acad.of Cluj-Napoca	2	1	13	301
22. University of Art and Design Cluj-Napoca	2	1	9	302
23. “Ovidius” University of Constanța	16	49	87	5996
24. Constanta Maritime University	2	6	13	1240
25. University of Craiova	10	55	99	6959
26. University of Medicine and Pharmacy Craiova	4	1	6	840
27. “Dunărea de Jos” University of Galați	14	55	81	4912
28. “Gheorghe Asachi” Technical University Iași	11	29	62	4443
29. “Ion Ionescu de La Brad” ISAMV of Iași	4	10	18	1480
30. “Alexandru Ioan Cuza” University of Iași	15	42	93	10385
31. “Gr.T.Popa”Univ. of Medicine&Pharmacy Iași	4	2	17	2265
32. “George Enescu”University of Arts of Iași	3	3	18	476
33. University of Oradea	15	55	105	6057
34. University of Petroșani	3	20	28	1640
35. University of Pitești	11	39	61	3970
36. Oil & Gas University of Ploiești	5	21	34	2395
37. “Eftimie Murgu” University of Reșița	3	16	22	1225
38. “Lucian Blaga” University of Sibiu	9	46	83	5674
39. “Ștefan Cel Mare” University of Suceava	9	36	56	3871
40. “Valahia” University of Târgoviște	10	32	40	2635
41. “Constantin Brâncuși” University of Târgu Jiu	4	24	31	1890
42. “Petru Maior” University of Târgu Mureș	3	18	22	1580
43. Univ. of Medicine &Pharmacy of Târgu Mureș	3	2	12	1200
44. University of Arts of Târgu Mureș	2	7	15	176
45. Politehnica University of Timișoara	10	30	63	4561
46. Banat’s University of Agricultural Sciences and Veterinary Medicine TM	6	14	34	1970
47. West University of Timișoara	11	37	82	6913
48. “Victor Babeș” University of Medicine&Pharmacy of Timișoara	3	1	15	1480
49. Technical Military Academy of Bucharest	2	9	14	520
50. “Carol I” National Defence University of Buc.	2	1	7	198
51. “M.Viteazul” National Intelligence Acad.Buc.	1	1	3	85
52. “Alexandru Ioan Cuza” Police Academy Buc	3	4	5	960
53. “Henri Coandă” Air Force Academy of Brașov	1	1	4	214
54. “Mircea Cel Bătrân” Naval Academy of Ct	2	4	9	595
55. “N. Bălcescu” Land Forces Academy of Sibiu	1	2	3	300
Total	**367**	**1055**	**2210**	**169,092**

Source: Processing upon Romania's OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580

According to GD 580/2014, state HEIs have an annual enrollment capacity of 169,092 seats.

The graphical representation below shows an overview of the distribution level and size of school capacity for each of the 55 state HEIs in the academic year 2014-2015 (*Figure II.7*).

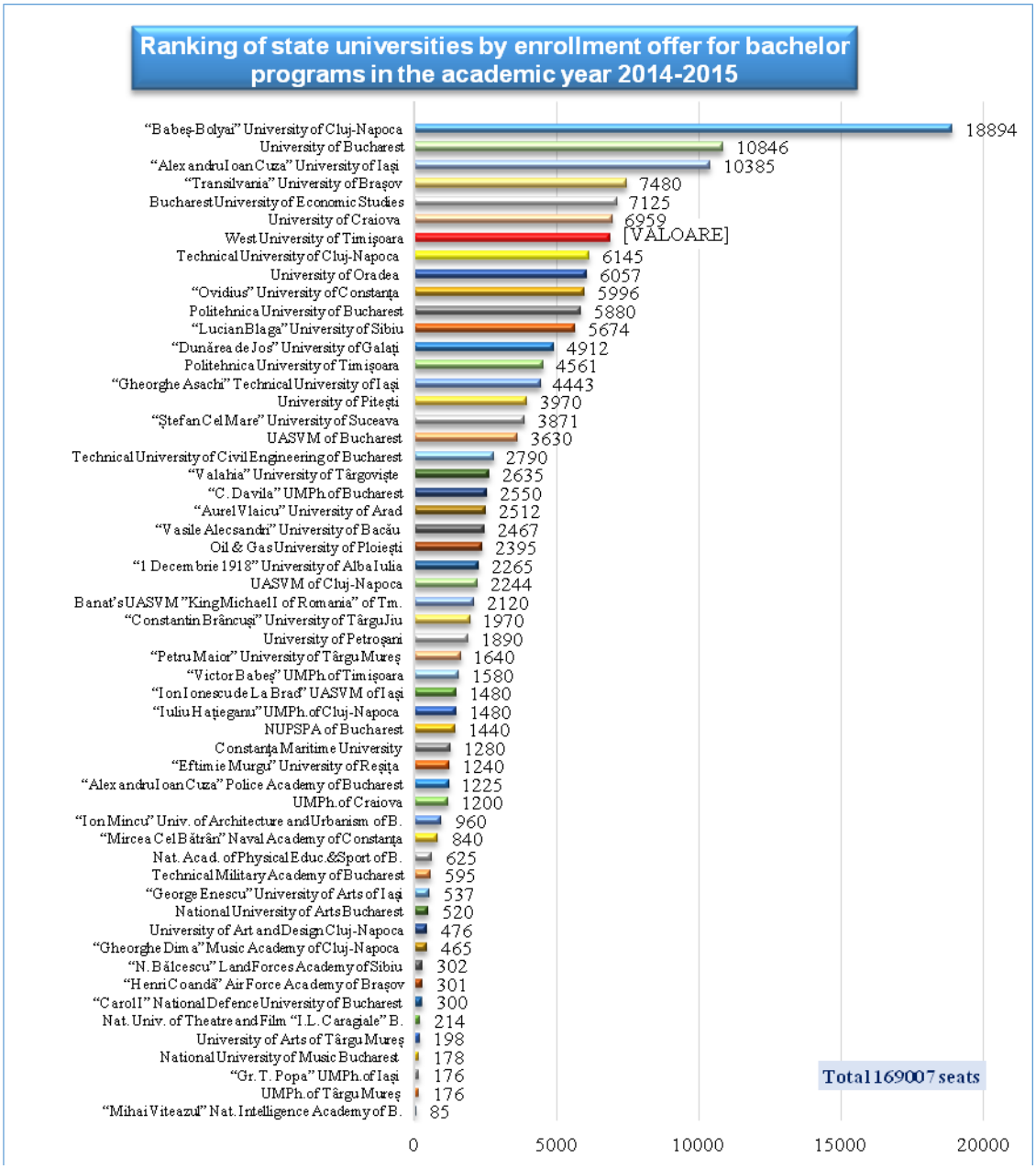


Figure II. 7 Ranking of state universities upon the enrollment offer for bachelor programs in the academic year 2014-2015

In 2014-2015 academic year there were only three universities that had an enrollment capacity of over 10,000 students. For example, 11.17% (18,894 seats) of the total offer of state HEIs is held by “Babeş-Bolyai” University of Cluj-Napoca, followed at a great distance by the University of Bucharest, with a share of 6.41% (10,846 seats) and “Alexandru Ioan Cuza” University of Iași, with a share of 6.14% (10,385 seats).

It is relevant and interesting to follow the ranking universities by the share of the total budgeted seats in the total enrollment offer for undergraduate programs in the academic year 2014-2015. According MECS, of the total state HES, only 35.3% of the enrollment is budgeted. *(Figure II.8)*

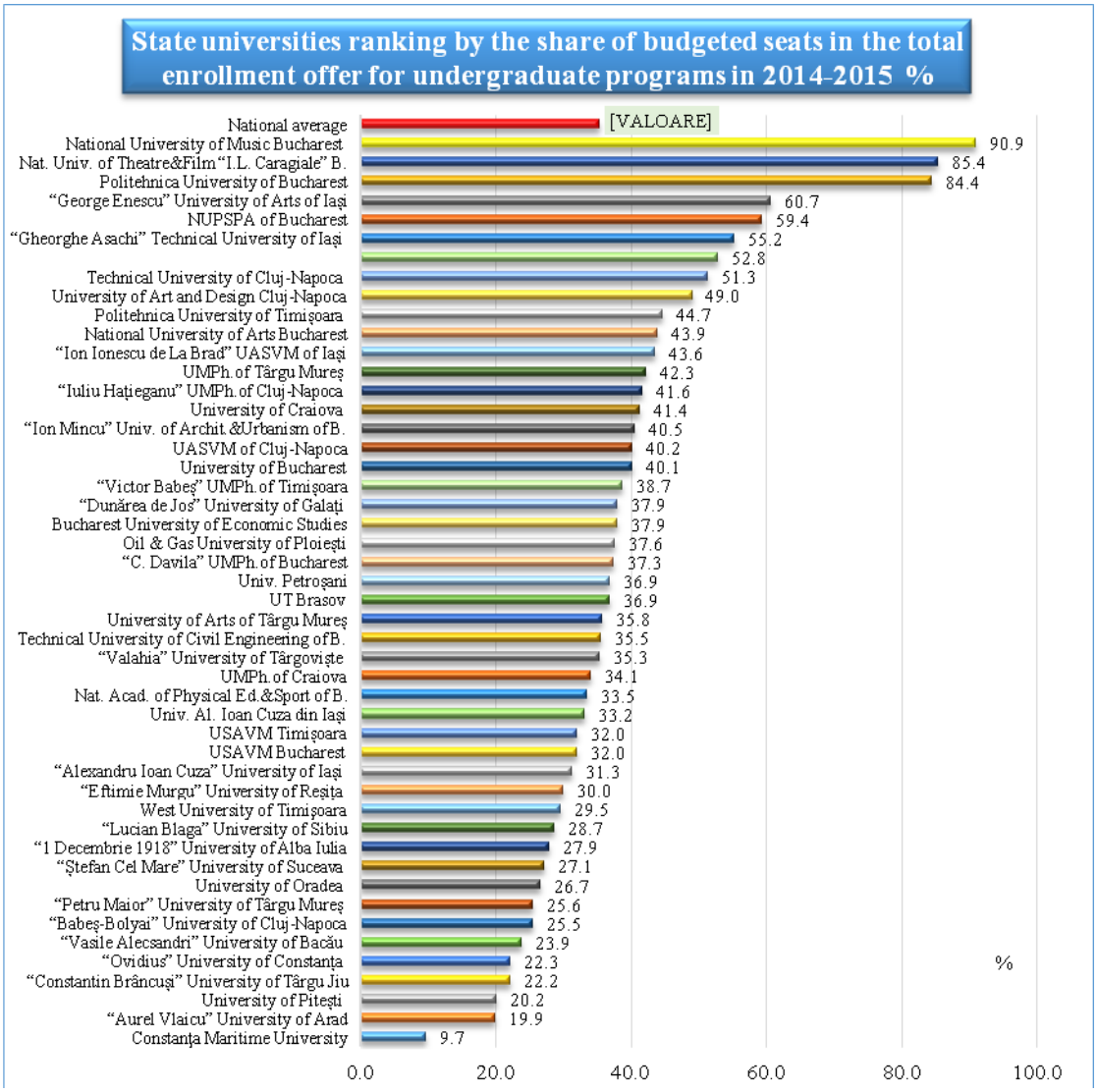


Figure II. 8 State universities ranking by the share of budgeted seats in the total enrollment offer for undergraduate programs in the academic year 2014-2015

This indicator has a significant size of 80.2 percentage points, from 9.7% (Constanța Maritime University) to 90.9% at the National University of Music in Bucharest.

Differences recorded in the largest universities are relevant for this indicator. In this case, we have significant differences from 25.5% at "Babeș Bolyai" University of Cluj-Napoca to 84.4% at Politehnica University of Bucharest. This shows a weak correlation between demand and offer and an uneven distribution of the total financial support for universities.

2.1.2.3 University offer of private institutions in 2014-2015 academic year

The offer of state higher education institutions is complemented by the educational offer of private higher education institutions (*Table II. 7*) and of foundations (*Table II.8*).

Table II. 7 University offer of private institutions number of faculties, fields and programs of undergraduate studies in the academic year 2014-2015

Higher education institutions	No. of faculties	No. of undergraduate fields	No. of undergraduate programs	Maximum number of students that can be enrolled
1. "Dimitrie Cantemir" Christian Univ. of Buc.	16	21	42	6630
2. "Titu Maiorescu" University of Bucharest	9	17	24	2605
3. "Nicolae Titulescu" Univ. of Bucharest	3	7	15	1975
4. Romanian-American Univ. of Bucharest	6	9	17	3575
5. "Hyperion" University of Bucharest	6	17	23	1995
6. "Spiru Haret" University of Bucharest	24	43	96	8675
7. "Bioterra" University of Bucharest	11	11	15	1675
8. Ecological University of Bucharest	7	11	18	1755
9. "Gheorghe Cristea" Romanian University of Arts and Sciences of Bucharest,	2	4	4	155
10. "Athenaeum" University of Bucharest	2	5	5	375
11. "Artifex" University of Bucharest	2	5	5	905
13. Baptist Theological Institute of Bucharest	1	1	2	75
14. Pentecostal Theological Institute of Buc.	1	1	2	60
17. "Vasile Goldiș" Western Univ. of Arad	6	19	38	2080
18. "George Bacovia" University of Bacău	1	4	4	325
19. "George Barițiu" University of Brașov	4	6	8	1525
20. "Avram Iancu" University of Cluj-Napoca	2	2	2	200
21. "Bogdan Vodă" Univ. of Cluj-Napoca	3	6	9	735
22. Protestant Theological Inst. Cluj-Napoca	1	1	1	50
23. "Sapientia" University of Cluj-Napoca	4	25	30	1300
24. "Andrei Șaguna" University of Constanța	4	9	9	805
25. "Danubius" University of Galați	3	7	15	1400
27. "Petre Andrei" University of Iași	5	7	8	760

Higher education institutions	No. of faculties	No. of undergraduate fields	No. of undergraduate programs	Maximum number of students that can be enrolled
28. “Apollonia” University of Iași	2	2	6	135
29. “Drăgan” European University of Lugoj	2	2	2	250
30. Agora University of Oradea	1	4	4	350
31. “Emanuel” University of Oradea	2	5	5	160
32. “Partium” Christian University of Oradea	3	11	18	720
33. “Constantin Brâncoveanu” Univ.of Pitești	6	16	24	2510
34. “Romanian-German” University of Sibiu	2	5	5	425
35. “Dimitrie Cantemir” Univ. of Târgu Mureș	4	5	6	720
37. “Tibiscus” University of Timișoara	4	4	5	375
Total	**149**	**292**	**467**	**45,280**

Source: Processing upon Romania’s *OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580*

The private HEI system consists of 37 accredited universities with 149 faculties where 467 undergraduate programs are organized. (Table II.7). The enrollment capacity of private HEIs is 45,280 seats (20.9% of total capacity of HEIs).

Table II. 8 Educational offer of foundations and private institutes, the number of areas and programs of undergraduate studies in the academic year 2014/2015

Higher education institutions	No. of faculties	No. of undergraduate fields	No. of undergraduate programs
1. Adventist Theological Institute in Cernica-Ilfov	4	4	120
2. “Ștefan Lupașcu” Foundation The Institute of European Studies of Iași	2	2	100
3. Roman Catholic Franciscan Theological Institute of Roman	2	2	65
4. Commercial Acad. Foundation of Satu Mare	4	4	400
5. University Foundation “Alma Mater” – “Alma Mater” University of Sibiu	5	6	420
6. “Ioan Slavici” Foundation for Culture and Education – “Ioan Slavici” Univ. of Timişoara	2	2	175
7. “Gaudeamus” Foundation – “Tomis” University of Constanța	2	3	275
8. “Timotheus” Theological Institute of Bucharest	1	1	30
9. Lumina (“The Light”) Foundation Educational Institutions – University of South East Europe – Lumina	6	6	275
Total	**28**	**30**	**1860**

Source: Processing upon Romania’s *OG year 182 (XXVI) - No. 527 of 16 July 2014 GD 580*

According to GD 580/2104, the educational offer of foundations and private institutions in the academic year 2014–2015, brings together 9 such institutions which have an annual enrollment capacity of 1860 seats (0.9% of total capacity HEIs).

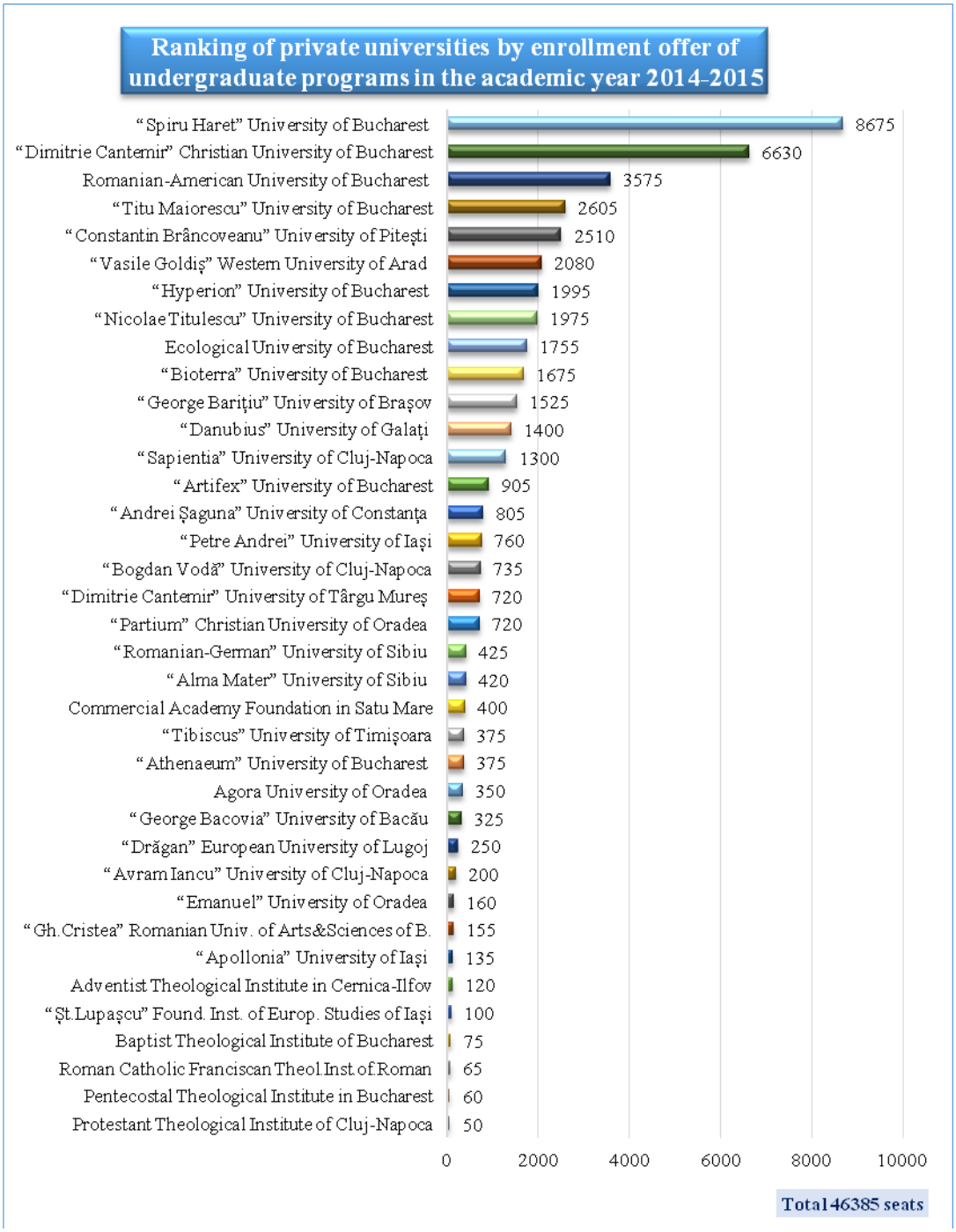


Figure II. 9 Ranking of private universities by enrollment offer of undergraduate programs in the academic year 2014-2015

In the top of private universities, "Spiru Haret" University of Bucharest has the largest capacity – 8675 seats (18.4%), followed by "Dimitrie Cantemir" Christian University of

Bucharest with 6630 seats (14.06%) and the Romanian-American University of Bucharest with 3,475 seats (7.37%). The three aforementioned HEIs own 40% of the total capacity of the enrollment capacity in private academia.

2.1.3 Financing of higher education

Eurostat statistical data provide information on the level of government expenditure on education, which, in economic terms, represents the state education funding system.

Table II. 9 The level and share of public higher education funding in GDP in Romania in the period 2007-2013

MIL lei (nominal value)

Indicators		2007	2008	2009	2010	2011	2012	2013
Gross Domestic Product		**418,258**	**524,389**	**510,523**	**533,881**	**565,097**	**596,682**	**637,583**
Total education expenditure of which:		16,431	23,139	20,539	17,608	23,063	17,749	17,869
Higher education expenditure		3,525	6,964	5,476	4,886	4,861	4,657	4,558
Share in GDP %	Total education expenditure	***3.93***	***4.41***	***4.02***	***3.30***	***4.08***	***2.97***	***2,80***
	Higher education expenditure	***0.84***	***1.33***	***1.07***	***0.92***	***0.86***	***0.78***	***0,72***
Share of higher education expenditure in total education expenditure %		*21,46*	*21.46*	*30.10*	*26.66*	*27.75*	*21.08*	*26.24*

Source: Processed data from Eurostat

According to statistical analysis, in the period 2007-2013, the share of education expenditure in GDP fluctuated from year to year and ranged between 4.41% (2008) and 2.80% (2013).

In 2013, expenditure on higher education held the lowest share of total education expenditure in GDP over the period 2007-2013. The share of total expenditure on higher education in 2013 was of 26.24%, over the shares in 2007 and 2008 (21.46%) and 2012 (21.08%) and below those of 2009 (30.1%), 2010 (26.66%) and 2011 (27.75%).

The expenditure of higher education system in the last 4 years analysed are below 1% of GDP, recording the minimum level of 0.72% in 2013, due to the application of Education Law No. 1 of 2011 on teaching staff and as a result of reducing the wages of budgetary.

Table II. 10 Level and real dynamics of the state higher education funding in Romania in the period 2007-2013

Mil.lei (values compared to 2007[42])

Indicators		2007	2008	2009	2010	2011	2012	2013
Total education expenditure of which:		16,431	21,482	17,845	14,374	18,063	13,417	13,060
Higher education expenditure		3,525	6,465	4,758	3,988	3,807	3,520	3,331
Real dynamics compared to 2007 %	Total education expenditure		*130.7*	*108.6*	*87.5*	*109.9*	*81.7*	*79.5*
	Higher education expenditure		183.4	135.0	113.1	108.0	99.9	94.5
Dynamics of higher education expenditure compared to the previous year %			183.4	73.6	83.8	95.5	92.5	94.6
Absolute modification (mil. lei)	compared to 2007		2,940.1	1,232.9	463.3	282.1	-4.6	-194.0
	compared to the previous year		2,939.8	-1,707.2	-769.7	-181.2	-286.7	-189.3

Source: Data processed by Eurostat and NIS

The statistical data from *Table II.10* above demonstrate unequivocally that state higher education funding was continuously decreasing, both compared to 2007 and previous years, it was reduced by 5.5% in 2013 compared to 2007 and by 5.4% compared to 2012.

The minimum level of expenditure in prices compared to 2007 was recorded in 2013 with only 3.33 billion lei, with a decrease of 194 million lei or 5.5% compared to the base year.

In all the years of the 2010-2013 period, there were systematic reduction of HES funding. Thus, the reductions in previous years were: -769.7 million lei (2010); 181.2 million lei (2011); -286.7 million lei (2012) and -189.3 million lei (2013).

Moreover, the decreasing trend of state budget financing of the entire state education and HES education is represented in the following graph. This graph shows that the downward trend in funding the state education budget, in the period 2007-2013, follows a function $y = -929.54x + 20100$. The same downward trend for HEI state funding is described by the model $y = -265.12x + 5259.8$.

[42] *Values deflated by the Consumer Price Index - Services. Source INS*

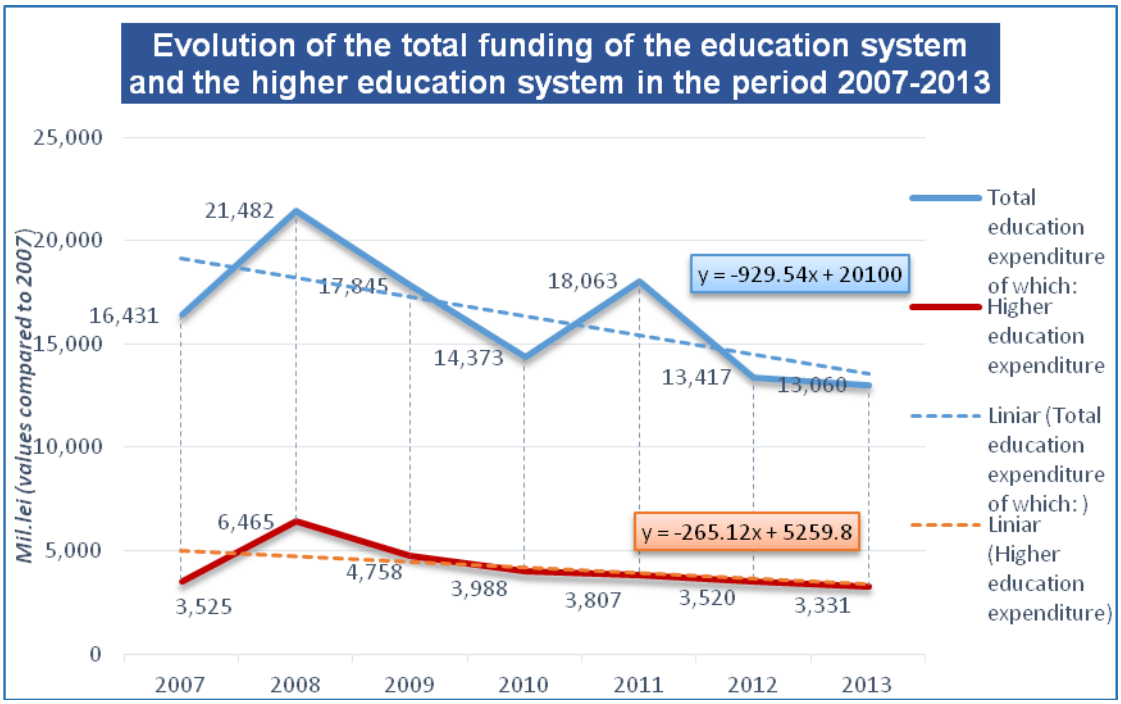


Figure II. 10 Evolution of the total funding of the education system and the higher education system in the period 2007-2013

In absolute numbers (nominal values), we can notice that increases were recorded in the compensation of employees in 2013 compared to 2007, 2011, 2012, and there were substantial reductions compared to 2008, 2009 and 2010. The largest reductions in the period under review were recorded in gross capital formation (investments) and intermediate consumption.

Table II. 11 Components of state higher education expenditure in Romania in the period 2007-2013

MIL. lei (nominal values)

Indicators	2007	2008	2009	2010	2011	2012	2013
Total education expenditure of which:	**3,525.3**	**6,963.6**	**5,476.3**	**4,885.6**	**4,860.9**	**4,657.1**	**4,557.8**
Compensation of employees	**732.1**	**2,721.6**	**2,856.8**	**2,974.9**	**2,591.5**	**2,561.5**	**2,650**
Gross fixed capital formation	1,116	2,681	1,330	1,053	796.0	700.7	559.3
Intermediate consumption	979	1,262	954	590.7	888	793	764.4
Social benefits other than social transfers in kind	195.8	294.5	335.1	256.9	421.9	442.5	503.3
Other current transfers	502.4	2.5	0.0	10.0	162.7	158.8	51.7
Capital transfers	0.0	1.5	0.4	0.00	0.30	0.6	29.1

Source: Eurostat Data

From structural point of view, of the use of HEI financing by component expenditure, the data in the figure below are particularly relevant.

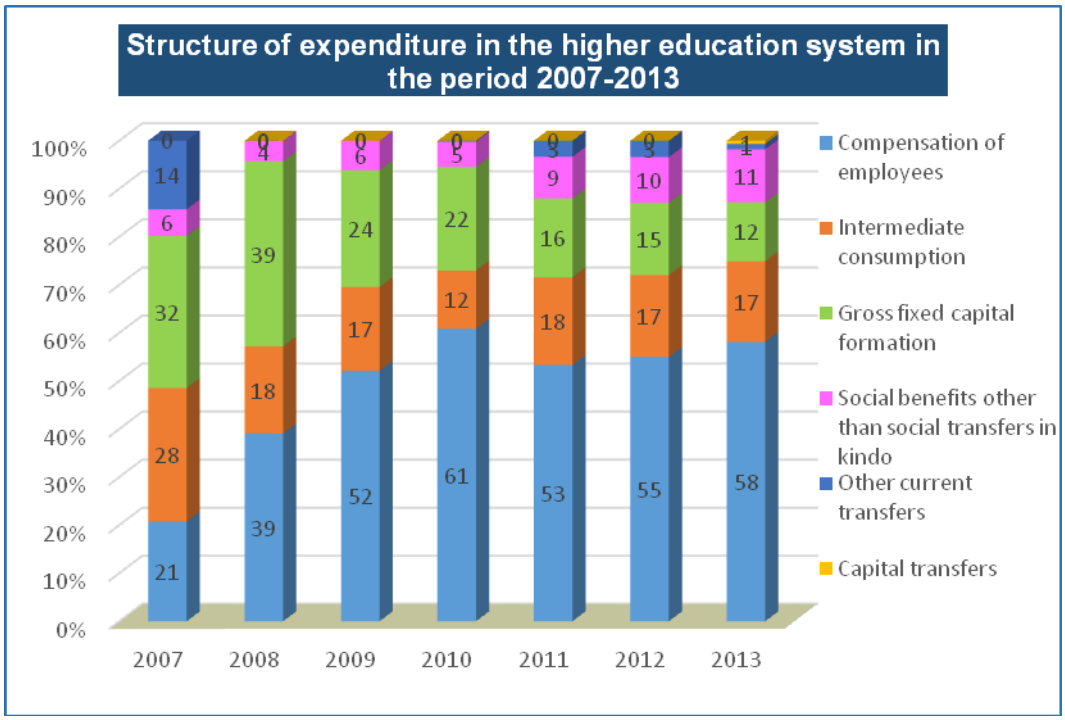


Figure II. 11 Structure of expenditure in the higher education system in the period 2007-2013

In the comparable data (deflated) from 2013 compared to 2007, the investments in HEI financed from the state budget decreased by 63.37% and expenses (intermediate consumption) – by 42.94%. Taking into account only these two components of expenditure we could explain the downward trend in funding.

Table II. 12 Actual expenditure level and dynamics of public higher education in Romania, for the 2007-2013 period

MIL lei (values compared to 2007[43])

Indicators	2007	2008	2009	2010	2011	2012	2013	Dynamics 2013/ 2007 %
Total higher education expenditure of which:	3,525	6,465	4,758	3,988	3,807	3,520	3,331	***94.49***
Compensation of employees	732	2,527	2,482	2,428	2,030	1,936	1,937	***264.54***
Gross fixed capital formation	979	1,172	829	482	695	599	559	***57.06***
Intermediate consumption	1,116	2,489	1,156	860	623	530	409	***36.63***
Social benefits other than social transfers in kind	196	273	291	210	330	334	368	***187.86***
Other current transfers	502	2	0	8	127	120	38	***7.52***
Capital transfers	0	1	0	0	0	0	21	-

Source: Data processed by Eurostat and NIS

[43] *Values deflated by the Consumer Price Index - Services. Source INS*

The regularity of evolution in comparable values, over the period 2007-2013, of HEI expenditure incurred by the state budget is shown in the data of following Table.

Table II. 13 Actual dynamics compared to previous years, of public higher education expenditure in Romania, in the period 2008-2013

% (real dynamics compared to 2007)

Indicators	2008	2009	2010	2011	2012	2013
Total higher education expenditure of which:	183.39	73.59	83.82	95.46	92.47	94.62
Compensation of employees	345.14	98.23	97.84	83.58	95.40	100.02
Gross fixed capital formation	119.72	70.72	58.18	144.23	86.19	93.20
Intermediate consumption	223.05	46.42	74.40	72.52	84.96	77.17
Social benefits other than social transfers in kind	139.64	106.48	72.03	157.56	101.23	109.97
Other current transfers	0.46	0.00	0.00	1.561	94.20	31.48
Capital transfers	0.00	24.95	0.00	0.00	193.03	4.689

Source: Data processed by Eurostat and NIS

Data in *Table II.13* explains the almost continuous reduction of HEIs funding from the state budget by:

- almost permanent reduction of the remuneration of employees in real terms compared to previous years: 1.72% in 2008, 2.16% in 2009, 4.6% in 2010, except in 2013, when there was a very slight increase compared to 2012 (0.02%).
- investments were reduced annually: thus, in 2013 the reduction was 22.83% and the reductions in the 2008-2013 range between 53.58% (2008) and 15.04% (2012);
- except for capital transfers that recorded increases over the entire 2007-2013 period, all the other costs (intermediate consumption, other current transfers, etc.) had significant reductions.

One of the important indicators taken into account when considering HEI funding from the state budget is the “expenditures per student”. The data determined on the level and dynamics of this indicator are presented in *Table II. 14* and *Figure II.11.*

Table II. 14 The evolution of expenditures per student, absolute and relative modification over the period 2007-2013

(values compared to 2007)

Indicators	2007	2008	2009	2010	2011	2012	2013
Total higher education expenditure (mil. lei[44])	3,525	6,465	4,758	3,988	3,807	3,520	3,331
Number of students financed by state	526.8	480.2	453.0	433.1	399.5	364.9	354.0
Total expenditure per student (lei/stud)	6691	13462	10504	9209	9530	9647	9410
Absolute modifications of expenditure per student compared to the previous year (lei/ stud)		6771	-2959	-1294	321	117	-237
Dynamics of expenditure per student compared to previous year %		201.2	78.0	87.7	103.5	101.2	97.5

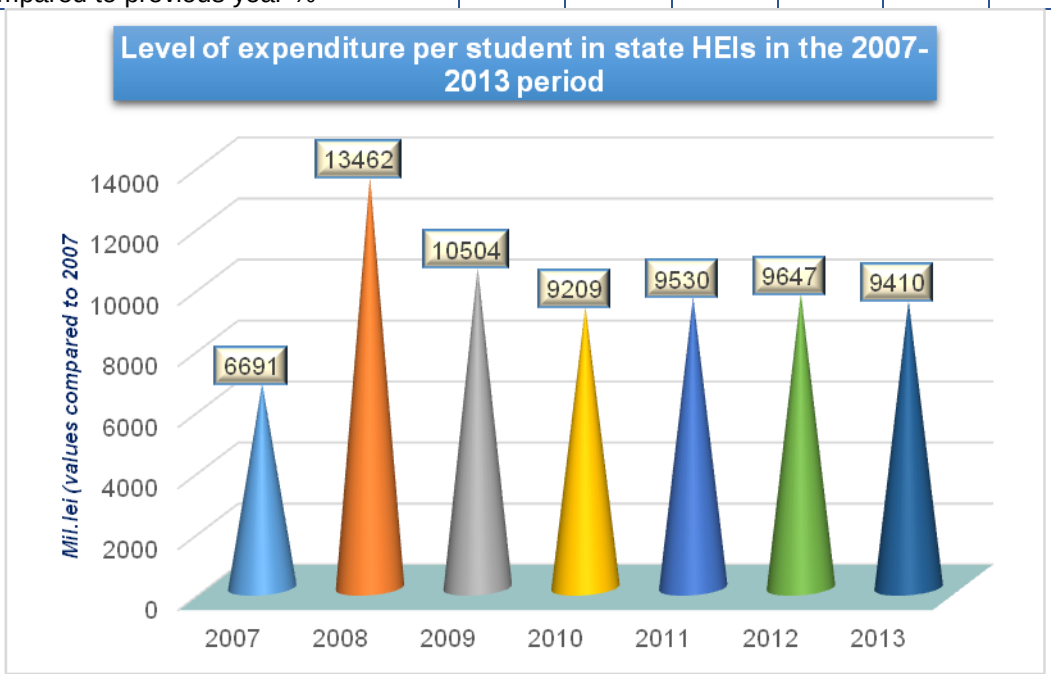


Figure II. 12 Level of expenditure per student in state HEIs in the 2007-2013 period

The data presented above shows that in 2008, compared to 2007, the budget expenses per student doubled, then decreased annually. In 2013, there were 9,410 lei/student, with 237 lei/student (or by 2.5%) lower compared to 2012 and with 4052 lei/student (or 30.1%) compared to 2008. In the period 2008-2013, the total expenditure decrease was more significant than the decrease of state HEIs students, but *this trend doesn't mean an increase in the efficiency of state HES as a concept, which can't be interpreted in terms of cost.*

[44] *Values compared to 2007*

2.1.4 Management, internal regulations and procedures

Romania has been participating in the Bologna process since its launch in 1999 and from then until now a comprehensive legislative framework has been adopted for the education system to align with the EHEA objectives.

In 2011, the National Education Law prompted the universities to update the University Charter. Under the same law, Art. 118 paragraph (1), the national higher education system is based on the following principles: a) the principle of university autonomy; b) the principle of academic freedom; c) the principle of public accountability; d) the principle of quality assurance; e) the principle of fairness; f) the principle of managerial and financial efficiency; g) the principle of transparency; h) the principle of respecting the rights and freedoms of students and academic staff; i) the principle of independence of ideologies, religions and political doctrines; j) the principle of freedom of national and international mobility of students, teachers and researchers; k) the principle of consultation of social partners in decision-making; l) the principle of student-centered education.

Art. 130. Paragraph (1) Higher education institutions adopt a code of ethics and professional academic deontology. This code is part of the University Charter and includes mandatory the management structures of institutions that have developed the Strategic plan and the Operational plan.
According to ARACIS methodologies, each higher education institution has prepared and approved in the Senate its own regulations, methodologies, standards, operating procedures, codes, etc., which are contained in their own Quality Manual.
In most cases, universities have their regulations structured as follows:

- Regulations – Administrative and management structures
- Regulations – Internal activities
- Regulations – Research
- Regulations – Educational process.

In the organizational structure of each HEI, there is a Committee for Evaluation and Quality Assurance (CEQA) or a Quality Assurance Department (QAD), which is an executive and advisory structure within HEIs, resulting from the need to implement and develop their own System of Evaluation and Quality Assurance (SEQA), based on national and international practices in accordance with the applicable law. These structures aim to develop a model of thought and conduct for the academic community members, students and administrative staff, with the goal of improving the skills and the outcomes achieved in the education process, research, administrative, financial, cultural and social activities.

Ensuring the quality of education processes is achieved through a set of actions meant to develop the institutional capacity of designing, planning and implementing

study programs, which gain public confidence that the education provider meets a set of quality standards.

Quality assurance expresses the ability of an education provider to offer educational programs in accordance with the stated standards. It is thus promoted to lead to continuous improvement of quality of education and to the development of a quality culture.

Controlling the quality of education in higher education institutions means operational activities and techniques, systematically applied by an evaluation authority designated to verify the compliance with the standards previously established.

Improving the quality of education involves evaluation, analysis and continuous corrective action from the education provider, based on selecting and adopting the best procedures and the selection and application of the most relevant benchmarks.

2.2 Human capital of RHES

"Those who educate children well are more to be honoured than parents, for these only gave life, those the art of living well."
Aristotle

In literature, *human capital* is defined as the accumulated value of investment in professional training and development of staff skills (Edvinsson and Malon, 1997). [45] It also contains competencies, skills and intellectual abilities of individuals (education, training and personal improvement). Zambon (2002) adds collective knowledge, creativity and innovation power of the people in the organization as components of human capital[46].

2.2.1 Teaching and research stuff

Randi Weingarten, the president of the American Federation of Teachers, argues that "... *unless wise investment are made in teachers, if you don't respect them or involve them in the decision-making process, as countries with top education do, students pay the price*".

Currently, we are witnessing the development of a global university system, where the importance given to a careful choice of high skilled teachers comes first. These teachers are involved, by various means/IT technologies, in research programs / international academic programmes providing the opportunity to develop lectures (or teaching methods) at a much larger scale in the university system. These programs foster scientific activities, leading to continuous improvement of the teaching process in the broader framework of its universality.

[45] *Edvinsson L. and Malone, M.S., (1997), Intellectual Capital: Realizing your Company's True Value by Finding Its Hidden Brainpower, Harper Business, New York, 225 pp, ISBN 0887308414;*
[46] *Zambon, S. (2002), "Accounting, intangible and intellectual capital: an overview of the issues and some considerations", Working Paper 4, University of Ferrara.*

To a large extent, education outcomes are generated by the size and professional quality of teachers. According to National Education Law 1/2011 art. 285, we have the following classifications:

- Paragraph (1): in higher education institutions, the teaching positions are a) Assistant professor; b) Lecturer; c) Associate professor; d) Professor;
- Paragraph (2): In higher education institutions, the research positions are: a) Research assistant; b) Scientific researcher; c) Senior Scientific Researcher III; d) Senior Scientific Researcher II; e) Senior Scientific Researcher I.

Human resources included in the national education system have fluctuated in recent years. (Figure II.13).

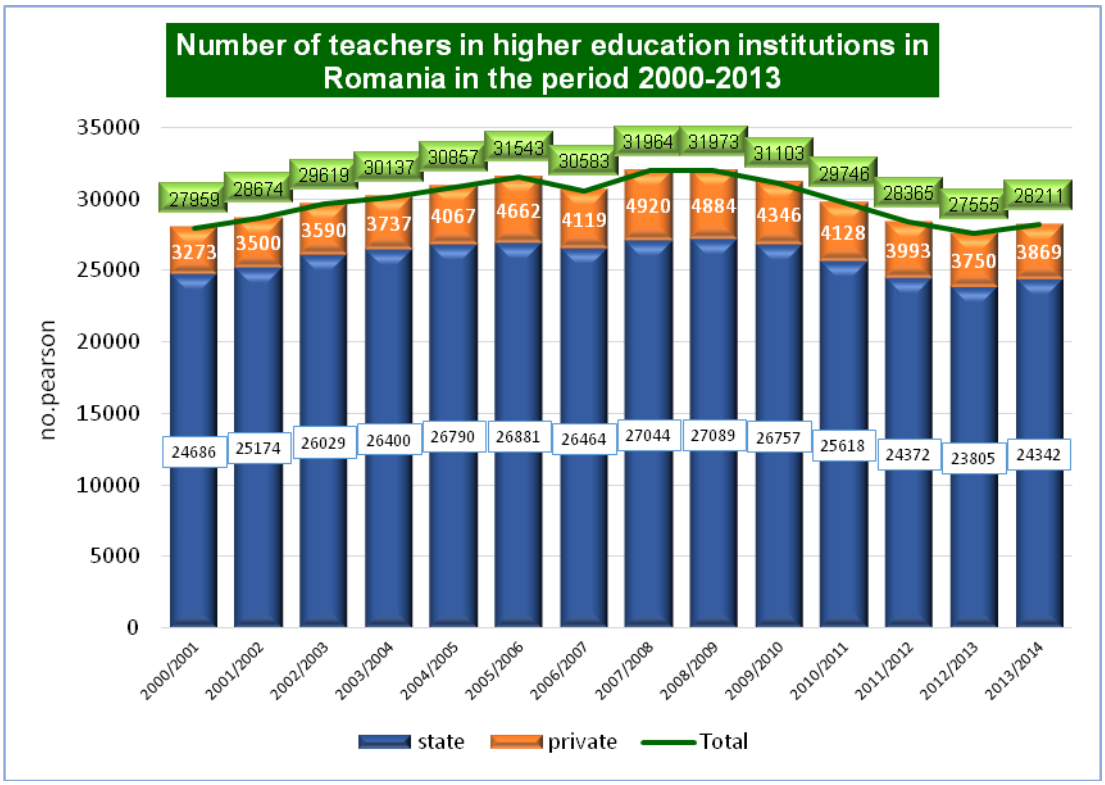


Figure II. 13 Number of teachers in higher education institutions in Romania in the period 2000-2013

Sources: Representation following https://statistici.insse.ro/shop/ data, accessed June 2015

In the period 2000/2001-2013/2014, changes in the number of teachers was somehow parabolic, with a maximum in the academic year 2007-2008, when there were 31,964 people employed. After the academic year 2007-2008, the trend was decreasing while the trend in number of students by groups and series of years of study has been increasing.

In the academic year 2000-2001, the teaching staff employed in higher education was of 27,959 people. Most of them were in state HEIs and only 11.7% in private HEIs. By the academic year 2007-2008, the teaching staff follows an upward trend both in state institutions and in the private ones. If state institutions, this increase is

associated with their development, trough developing study programs, namely through the establishment of new faculties. In contrast, private institutions reduced the number of faculties, with only a volume increase.

Starting with 2008, the number of teaching staff is reduced in both types of higher education institutions, reaching the lowest level in 2012-2013.

In the academic year 2013-2014, 28,211 teachers worked in HES, 2.38% more than the previous year (minimum level recorded in the period under review as a result of the application NEL 2011). In state institutions, teaching and training the students was provided by 24,342 teachers (86.26% of total RHES).

Comparing the number of teachers in the state HEIs and private HEIs, we found that the ratio fluctuated slightly: 7:1 between 2000/2001 and 2004/2005, and it was low during the academic years 2005/2006-2013/2014, being between 5.5:1 and 6:1. In the last year analysed, the state / private ratio in the number of teachers was of 6.3:1.

By development regions, the structure of teaching staff in higher education (shown in Figure II 13) emphasizes that there is a high degree of territorial concentration, explained by the existence of traditional university centers (Bucharest, Timişoara, Iaşi and Cluj). Bucharest-Ilfov is the most represented region, with 32.05%, followed by the North West with 18.89%, West with 13% and Northeast with 12%.

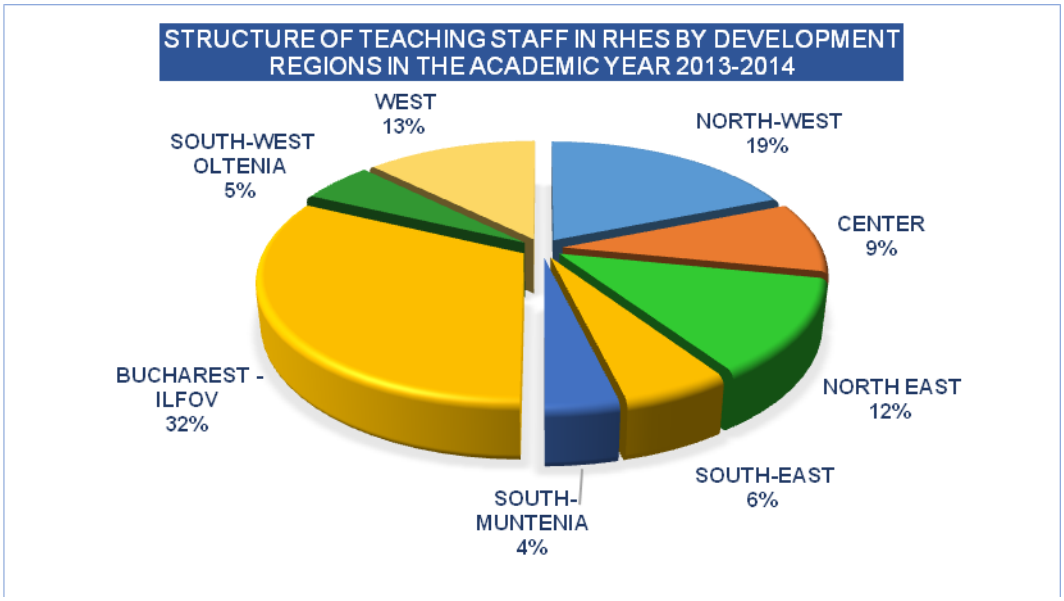


Figure II. 14 Structure of teaching staff in RHES by development regions in the academic year 2013-2014

Most academics from private higher education system work in Bucharest – 2094 people, representing 54.12% of the total teaching staff of the private HES.

2.2.2 The analysis of high school graduates over the period 2004-2015

The analysis of the main trends in the evolution of high school graduates in Romania is conducted according to the basic indicators that are part of the National System of Education Indicators (NSEI)[47]. This system is compatible with the international indicators systems (the European Statistical System, developed by EUROSTAT, the Organisation for Economic Cooperation and Development – OECD system, the system of UNESCO Institute for Statistics – UIS).

In order to capture the evolution of high school graduates number in the 2000-2014 period, we structured and developed into a logical sequence a set of core indicators aimed at analysing the main characteristics of the Secondary Education System (SES), characterized by the following dimensions and indicators:

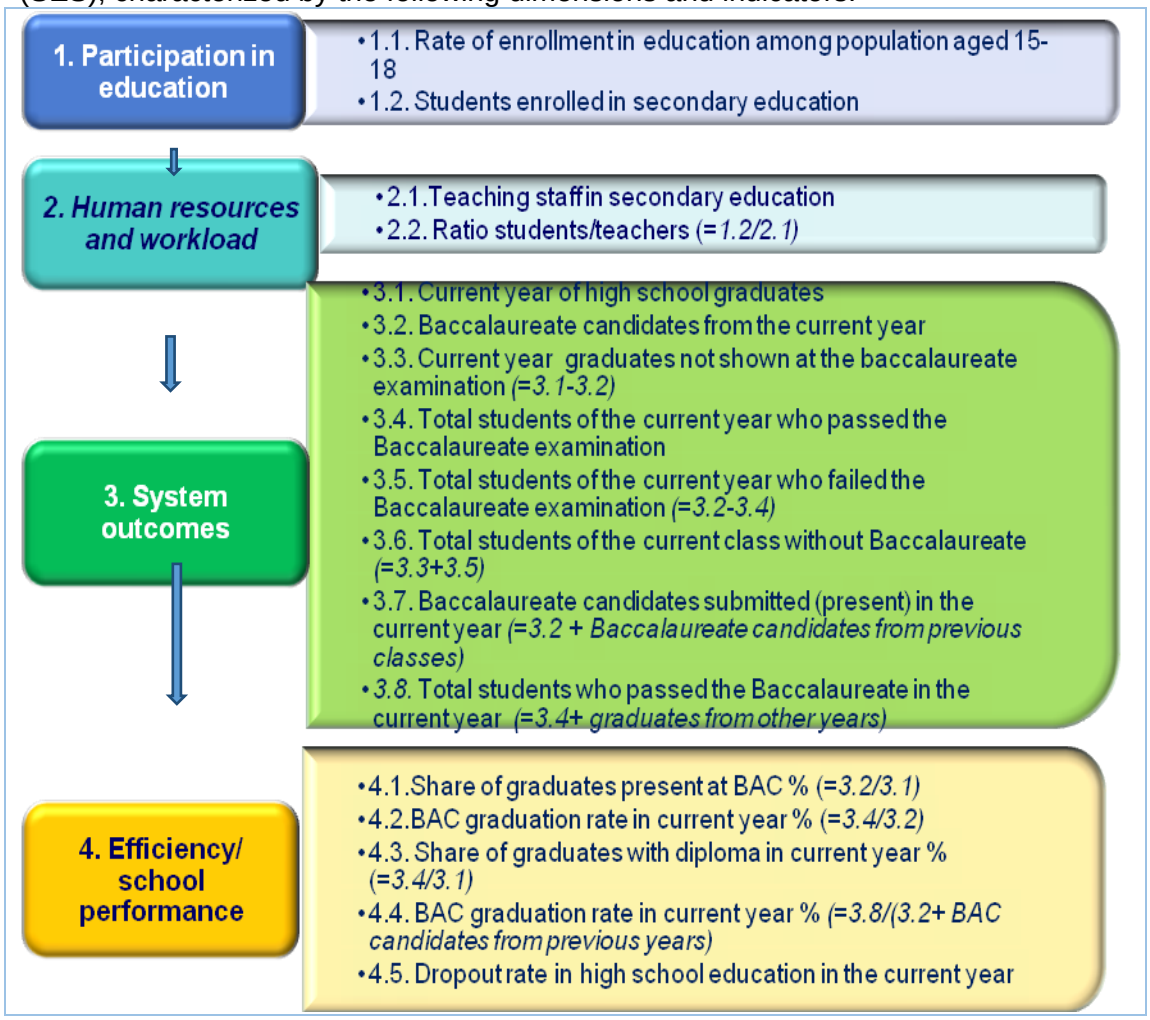


Figure II. 15 Dimensions and indicators for the analysis of results and performance of secondary education system
Source: Autors

[47] *According to the report produced within the Project Integrated Education System in Romania, coordinated by the Project Management Unit with External Financing.*

Analysing the four dimensions, in terms of effort and effect, we find that the first two dimensions fall within the effort category (as *input* indicators) and the last two under the effect category (as *output* indicators).

Our choice was determined by the fact that the indicators values can be properly read in conjunction with other indicators. In the education system in general, the quality of results (outputs) depends directly on the quality of conditions/context (inputs).

2.2.2.1 Human resources and workload of teachers in high schools

Indicators of participation in education aim, on the one hand, the subjects of education – the students (gross enrollment rate, number of students enrolled in high school education). On the other hand, our analysis takes into account the human resources working in secondary education, specifically the teaching staff.

Table II. 15 Gross enrollment rate of the population aged 15-18, students enrolled, teachers in secondary school in the 2000-2014 period

School year	Gross enrollment rate of the population aged 15-18%[48]	Students enrolled in high schools	Teachers	Student-teacher ratio
	1.1.	*1.2*	*2.1.*	*2.2 =1.2/2.1*
2000/2001	74,6	687,919	64,018	*11*
2001/2002	73,9	710,663	64,729	*11*
2002/2003	74,6	740,404	60,988	*12*
2003/2004	76,5	758,917	58,925	*13*
2004/2005	78,7	773,843	62,192	*12*
2005/2006	81,6	767,439	61,914	*12*
2006/2007	81,7	780,925	62,048	*13*
2007/2008	83,0	791,348	61,620	*13*
2008/2009	88,5	784,361	60,647	*13*
2009/2010	88,8	837,728	60,255	*14*
2010/2011	86,2	866,543	59,609	*15*
2011/2012	84,2	888,768	59,380	*15*
2012/2013	82,2	817,058	57,080	*14*
2013/2014	81,4	776,616	56,843	*14*
2014/2015	84,2	727,072	55,913	*13*
Average statistical indicators				
Annual average (persons/year)		*780,640*	*60,411*	*13*
Absolute annual average modification (pers./year)		*2796*	*-579*	*-*
Average annual dynamics %		*0.396*	*-0.962*	*-*
Absolute modification in 2014 compared to 2000		*39153*	*-8105*	*2*
Dynamics in 2014 compared to 2000 %		*105.69*	*87.34*	*118.18*

Source: Calculations following https://statistici.insse.ro/shop/ accessed October 2015

[48] *Rate of enrollment in education (specific rate of school enrollment by age) represents the total number of students in a certain age group, regardless of education level in which they are enrolled, as a ratio of the total resident population of the same age group.*

In the reference period, *gross enrollment ratio in education of appropriate school age population (15-18 years)* increased by about 10 percentage points, from 74.6% to 84.15%, with the maximum level of 88.8% reached in 2009-2010.

Although the programs and projects conducted[49] in this area in recent years have increased the gross enrollment rate in education, the percentage of young people who abandoned the education system, between 15-20%, remains higher than the EU average[50]. High rates of school dropout in primary, secondary and the first two years of upper secondary education (junior high), giving up studies after completing compulsory education, entering the labour market or carrying out unpaid work in the household currently determine the fact that one of five young people aged 15-18 will not to be enrolled in any form of education.

Annually, on average, ***780,000 students are enrolled*** in SES with an average annual increase of 2,796 students. In the school year 2014-2015 compared to the base year (2000-2001), the number of students increased by about 40,000 students, meaning a relative increase of 5.69%.

Although the number of students increased in the 15 years under review, ***the teaching stuff*** decreased by more than 8,000 teachers, meaning by 12.66%, which resulted in an increasing student-teacher ratio.

The value of ***student-teacher ratio*** in the reference period ranges between 11 and 15. In the school year 2010-2011 and 2011-2012 this ratio registered the maximum value of 15 in the last year analysed (2014-2015), which is 13:1.

But in fact, the ratio is higher, since many high schools have V-VIII middle grades, where the same teachers have classes at both levels of education (ISCED 3 and 4).

2.2.2.2 Outcome indicators in current year

From the perspective of indicators that aim to capture the results of secondary education, we see fluctuating values during the reference period (*Table II.16*). Starting with the school year 2000-2001 until the school year 2007-2008, the number of graduates has grown steadily, with the maximum number being reached within this range (over 218,000). Thereafter the number fluctuated, and the school year 2011-2012 recorded the biggest drop compared to the previous year, with 45,430 graduates not present at the baccalaureate (exit examination), compared to only 5,560 students not present in 2011.

[49] According to the Emergency Ordinance of 23.12.2013, in the 2015-2016 school year, compulsory education will be 11 years instead of 10, thus the preparatory grade, the I-VIII and IX-X grades are mandatory.

[50] The objective of the European Union on the dropout issue is clear and firm: a dropout rate below 10% in the EU by 2020.

Table II. 16 Analysis of the results and efficiency of secondary education on current year during the period 2004-2015

Year	Results in current year					
	High school graduates[51]	Candidates present at BAC exam[52]	Graduates not present at BAC exam	Total number of students passing the BAC exam	Total number of students who fail the BAC exam	High school graduates without BAC diploma
	3.1	***3.2***	***3.3=3.1-3.2***	***3.4***	***3.5=3.2-3.4***	***3.6=3.3+3.5***
2004	177,576	164,235	13,341	155,665	*8,570*	21,911
2005	185,255	171,449	13,806	161,103	*10,346*	24,152
2006	187,576	178,415	9,161	163,124	*15291*	24,452
2007	218,205	180,150	38,055	169,840	*10,310*	48,365
2008	222,505*	212,309	10,196	191,872	20,437	10,241
2009	204,863	195,973	8,890	185,001	*10,972*	19,862
2010	202,160	197,798	4,362	157,095	*40,703*	45,065
2011	187,521	181,955	5,566	104,792	*77,163*	*82,729*
2012	200,004	154,574	45,430	91,267	*63,307*	*108,737*
2013	172,613	152,445	20,168	98,093	*54,352*	*74,520*
2014	143,949	131,571	12,378	93,433	*38,138*	*50,516*
2015	…	143,949	…	102,959	...	…
TOTAL	**2,081,835**	**2,064,823**	**160,961**	**1,674,244**	**349,589**	**510,550**
Average statistical indicators						
Annual average (pers./year)	189,258	174,625	14,633	142,844	31,781	46,414
Absolute annual average modification (pers./year)	-33,627	-32,664	-963	-62,232	29,568	28,605
Average annual dynamics %	-3363	-3266	-96	-6223	2957	2861
Absolute modification in 2014 compared to 2000	81.06	80.11	92.78	60.02	445.02	230.55
Dynamics in 2014 compared to 2000 %	-2.078	-2.19	-0.75	-4.977	16.1	8.711

Source: Calculations upon https://statistici.insse.ro/shop/ *accessed October 2015*
**Calculations upon BAC Analysis report* http://www.edu.ro/index.php/pressrel/22114

In the last 3 years under review, fewer high school graduates were present at the baccalaureate examination, which was available for both Session I and Session II. The lower presence is, in some cases, even encouraged by high schools interested to have a higher graduation rate (by comparing students who pass the exam to candidates present at exam). For example, while in 2004 about 12,000 graduates of XII grade were not present at the examination (less than 7% of the total); in 2012 the share of these students was 22.3% and in 2013 was of 12.68%.

[51] *Source NIS Definition: The graduate is the student who promoted last year of study of a school/faculty, whether or not taken final examination, baccalaureate, etc. The number of graduates refers to the end of the school year (after the second examination).*
[52] *Unique students of the current year, present at baccalaureate summer session I + autumn session II*

Table II. 17 Analysis of the results and efficiency of secondary education on current year during the period 2004-2015

Year	Efficiency of current year			
	Share of graduates present at BAC exam %	BAC graduation rate %	Share of graduates with BAC diploma %	Secondary school dropout rate %
	4.1=3.2/3.1	*4.2.=3.4/3.2*	*4.3=3.4/3.1*	*4.5*
2004	*92.49*	*94.78*	*87.66*	
2005	*92.55*	*93.97*	*86.96*	*2.7*
2006	*95.12*	*91.43*	*86.96*	*3.3*
2007	*82.56*	*94.28*	*77.84*	*2.9*
2008	*95.41*	*90.37*	*86.23*	*2.4*
2009	*95.66*	*94.40*	*90.30*	*2.2*
2010	*97.84*	*79.42*	*77.71*	*3.2*
2011	*97.03*	*57.59*	*55.88*	*4.2*
2012	*77.29*	*59.04*	*45.63*	*2.9*
2013	*88.32*	*64.35*	*56.83*	-
2014	*91.40*	*71.01*	*64.91*	-
2015	-	*71.52*	-	-

Source: Calculations upon BAC Analysis report http://www.edu.ro/index.php/pressrel/22114

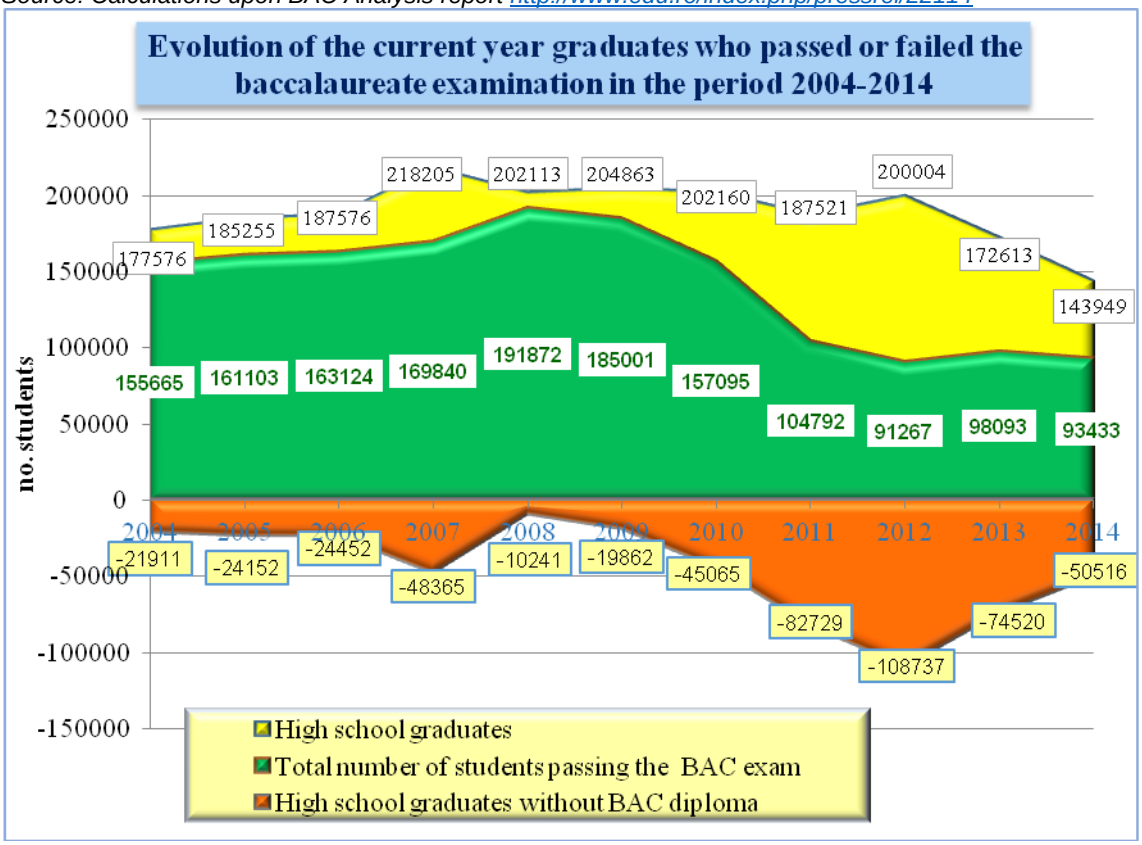


Figure II. 16 Evolution of the current year graduates who passed or failed the baccalaureate examination in the period 2004-2014

During 2004-2014, of the total of graduates without baccalaureate diploma (510,000 students) about 55.2% (282,000 students) showed up in subsequent sessions, of which only 24.79% passed the baccalaureate examination.

Table II. 18 Analysis of BAC exam passing by students from previous years during 2004–2014 period

Year	Total candidates presents at BAC exam	Total students who passed the BAC exam	The annual graduation rate at the BAC examination %
2004	13,222	9,441	71.40
2005	14,322	10,060	70.24
2006	18,502	10,953	59.20
2007	25,467	18,283	71.79
2008	20,383	13,011	63.83
2009	26,239	19,832	75.58
2010	16,715	6,450	38.59
2011	33,083	7,140	21.58
2012	47,443	13,485	28.42
2013	44,825	16,559	36.94
2014	34,844	10,796	30.98
TOTAL	295,045	136,010	46.10

Source: Calculations upon BAC Analysis report http://www.edu.ro/index.php/pressrel/22114

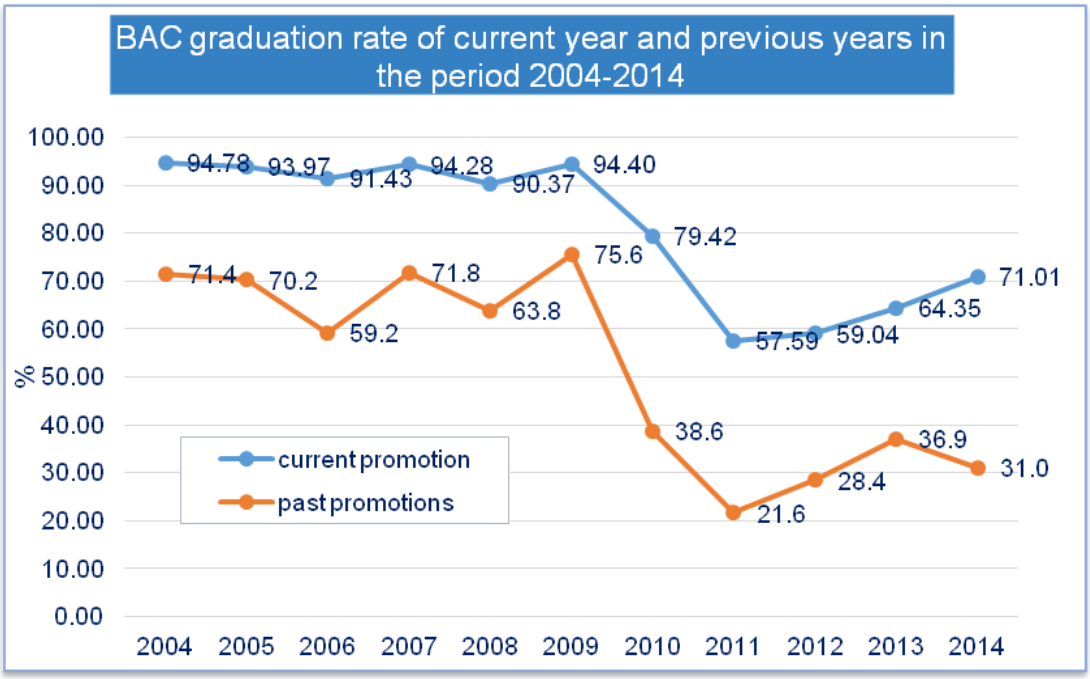


Figure II. 17 BAC graduation rate of current year and previous years in the period 2004-2014

From the graphical representation, we can easily observe two separate periods featuring significantly different values. If in the first period analysed (2004-2009), the BAC graduation rate of current year was above 90%, but starting with 2010, the exam passing rates decreased by 20-40 percentage points (with minimum level of 57.59% in 2011). In the last year analysed, we can see a graduation rate higher than 71.01%. The graduation gap between the current and previous years is of 19-31 percentage points (pp) in the first 6 years and increased further in the last 5 years by 28-41 pp.

Table II. 19 Statistics of BAC exam by sessions and in total in the period 2004-2015

Year	Session I – summer			Session II – autumn		
	Candidates present at BAC exam	No. of students who passed the BAC	BAC graduation rate %	Candidates present at BAC exam	No. of students who passed the BAC	BAC graduation rate %
	1	*2*	*3=2/1*	*4*	*5*	*6=5/4*
2004	169,313	143,222	*84.59*	30,547	21,884	*71.64*
2005	176,478	149,442	*84.68*	33,489	21,721	*64.86*
2006	187,295	150,735	*80.48*	42,486	23,342	*54.94*
2007	194,590	159,719	*82.08*	40,444	28,404	*70.23*
2008	220,760	172,855	*78.30*	54,349	32,028	*58.93*
2009	208,455	169,828	*81.47*	48,210	35,005	*72.61*
2010	202,558	140,373	*69.30*	66,357	23,172	*34.92*
2011	204,103	93,336	*45.73*	110,690	18,596	*16.8*
2012	186,992	83,043	*44.41*	85,167	21,709	*25.49*
2013	175,513	99,060	*56.44*	72,521	15,592	*21.5*
2014	151,310	91,769	*60.65*	52,393	12,459	*23.78*
2015	168,945	106,064	*66.41*	44,770	11,493	*25.67*

Source: https://statistici.insse.ro/shop/ accessed October 2015;
MECS http://bacalaureat.edu.ro/2014/ http://www.edu.ro/index.php/pressrel/22114

Table II. 20 Statistics of BAC exam by sessions and in total in the period 2004-2015

Year	Total current year		
	Candidates present at BAC exam	Total no. of students who passed the BAC	BAC graduation rate %
	3.7.[53]	*3.8*[54]	*4.4.=3.8/3.7*
2004	177,457	165,106	93.04
2005	185,771	171,163	92.14
2006	196,917	174,077	88.40
2007	205,617	188,123	91.49
2008	232,692	204,883	88.05
2009	222,212	204833	92.18
2010	214,513	163,545	76.24

[53] *Candidates present at the BAC examination (3.7)= Candidates from the current year present at the BAC examination (3.2) + BAC candidates from previous years*
[54] *(3.8)= Total of students from the current year who passed the BAC examination (3.4)+those from previous years who passed the BAC examination*

2011	215,038	111,932	52.05
2012	202,017	104,752	51.85
2013	197,270	114,652	58.12
2014	166,415	104,229	62.63

Source: https://statistici.insse.ro/shop/ accessed October 2015;
MECS http://bacalaureat.edu.ro/2014/ http://www.edu.ro/index.php/pressrel/22114

Another challenge for the quality of secondary education is related to the decrease of the graduation rate of the Baccalaureate exam in the last 5 years. Thus, if in the years prior to 2011, over 85% of students passed this examination, in the following years, the share dropped to a minimum of 52% and didn't exceeded 63%. In the last year for which data are available, only two of three candidates were successful, while in 2011 and 2012 only one of two candidates was in this situation.

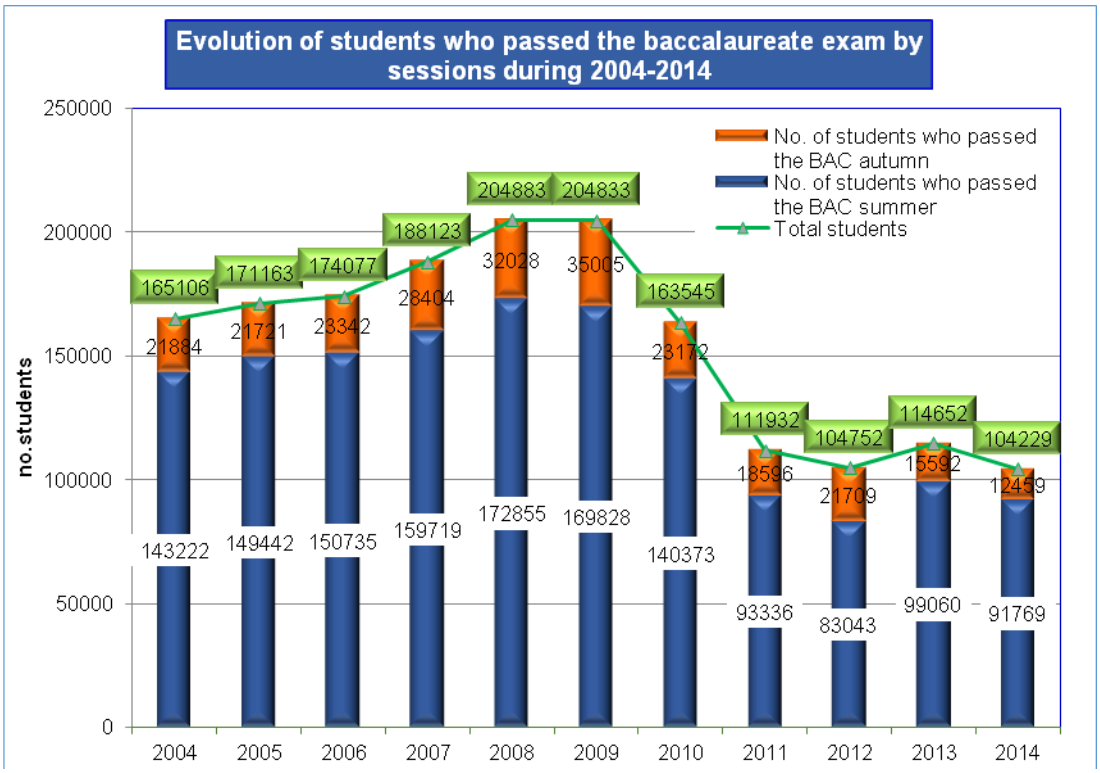


Figure II. 18 Evolution of students who passed the baccalaureate exam by sessions during 2004-2014

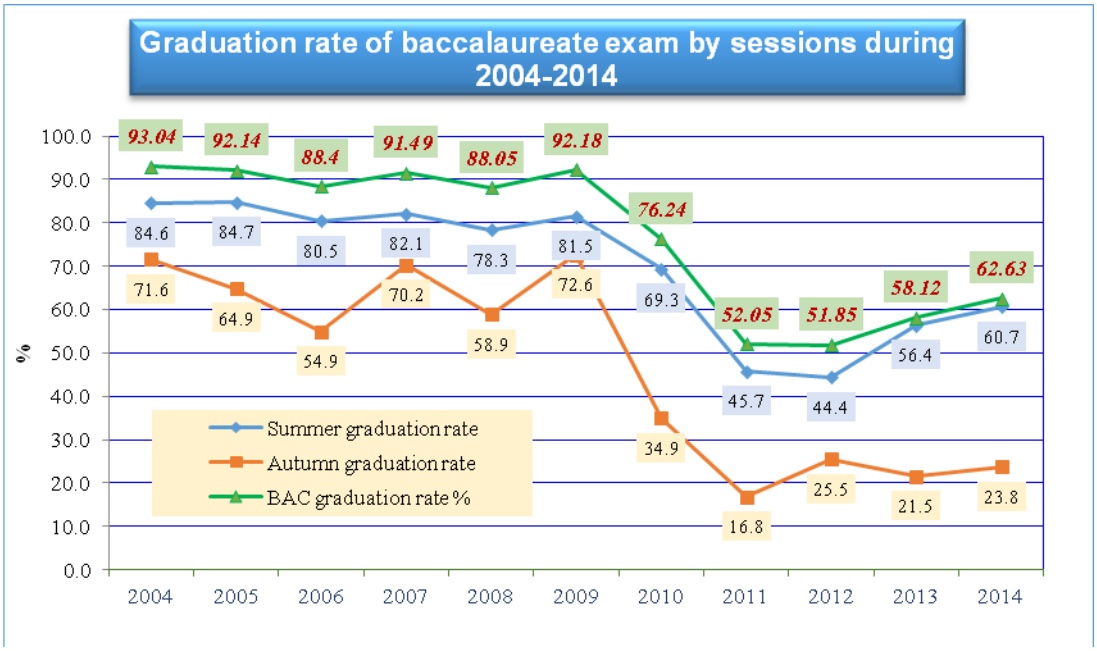


Figure II. 19 Graduation rate of baccalaureate exam by sessions during 2004-2014

Calculations upon *MECS* http://bacalaureat.edu.ro/2014/ *http://www.edu.ro/index.php/pressrel/22114*

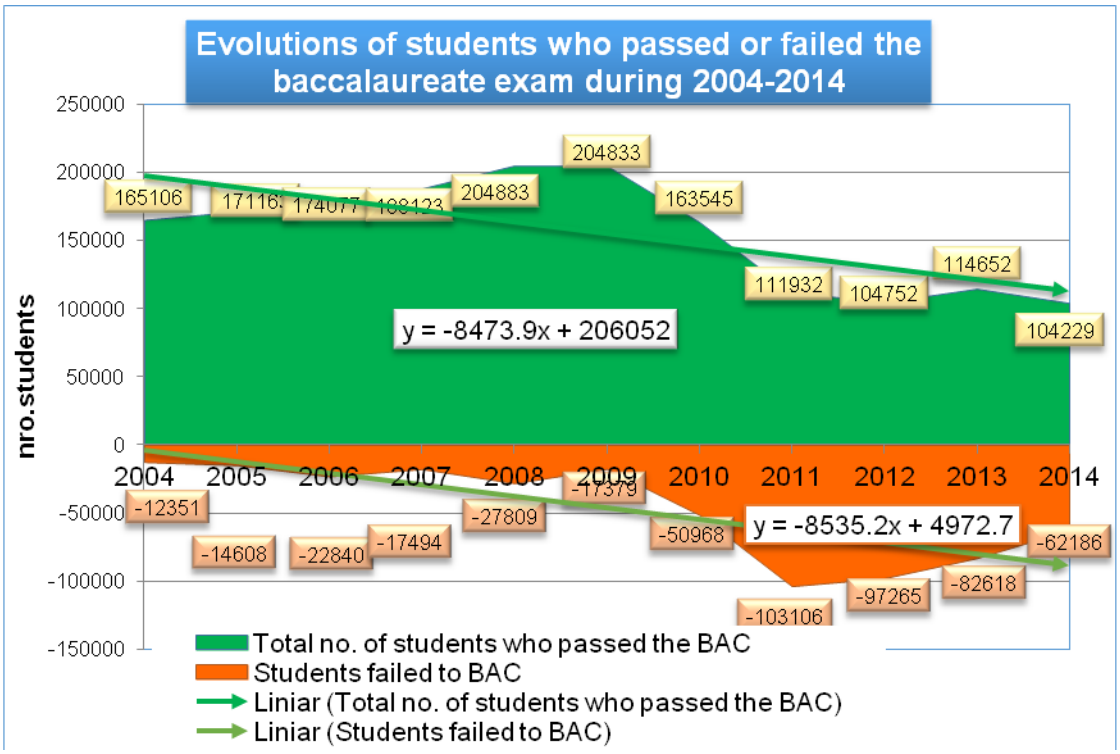


Figure II. 20 Evolutions of students who passed or failed the baccalaureate exam during 2004-2014

As shown in the chart above, during 2010-2014 (coinciding with the introduction of more stringent measures of supervision) nearly 350 thousand students didn't pass the baccalaureate exam, to which is added the large number of students who didn't complete the twelfth grade or who were not present at the exam.

The analysis of students who take the exam in the current year shows that most of those who failed the exam no longer show in the next year exam or don't try again more than once.

2.2.3 Students – their participation in the educational process

In the academic year 2013-2014, 433,234 students were enrolled in the 103 institutions of higher education. Most of the students enrolled in undergraduate regular studies (88.16%), reduced frequency studies have a share of 4.74% and distance learning has 7.04%.

Table II. 20 Total of students by ownership and forms of education existing in Romania during 2000-2013

University year	BAC exam graduation rate %	Enrollment rate of population aged19-23 years and over %[55]	**Students enrolled**[56]			Foreign students
			Total of which:	state	private	
2000/01	–	32.9	533,152	382,478	150,674	11,669
2001/02	86.20	36.4	582,221	435,406	146,815	10,608
2002/03	86.71	41.09	596,297	457,259	139,038	9730
2003/04	76.82	43.05	620,785	476,881	143,904	9006
2004/05	84.60	45.33	650,335	495,034	155,301	8935
2005/06	84.76	51.77	716,464	513,678	202,786	9944
2006/07	79.60	59.59	785,506	520,263	265,243	10,396
2007/08	82.08	72.5	907,353	526,844	380,509	11,095
2008/09	78.26	78.3	891,098	480,239	410,859	11,887
2009/10	81.47	76.4	775,319	452,982	322,337	13,778
2010/11	69.30	70.1	673,001	433,063	239,938	16,138
2011/12	45.72	59.7	539,852	399,464	140,388	17,288
2012/13	44.30	53.7	464,592	364,916	99,676	19,295
2013/14	56.40	–	433,234	353,988	79,246	20,829

Source: NIS Tempo-online statistici.insse.ro/shop/ accessed August 2015

Source: http://www.romaniatv.net/analiza-bac-ul-din-ultimii-20-de-ani-a-fost-pervertit-de-setea-de-diplome-universitare_32250.html *accessed September 2015*

[55] *Enrollment rate of population aged 19-23 years and over %*

[56] *NIS Methodology on School population – represents all the students enrolled in training and education at the beginning of the academic year, regardless of forms of education they attend (full or part-time studies, reduced frequency, open distance learning) and age. Education levels in accordance with International Standard Classification of Education - ISCED 97 (until 2013) / ISCED 2011 (after 2013).*

The development of private universities and the introduction of tuition fee in state universities has led to an increase of the enrollment of the population aged 19 to 23 years and over in higher education, from 32.9% in 2000 to 70% in 2007-2010. Since 2011, due to lower graduation rate at baccalaureate (see *Table II.21*), higher education enrollment rate drops to 59.7% in 2011 and 53.7% respectively in 2012.

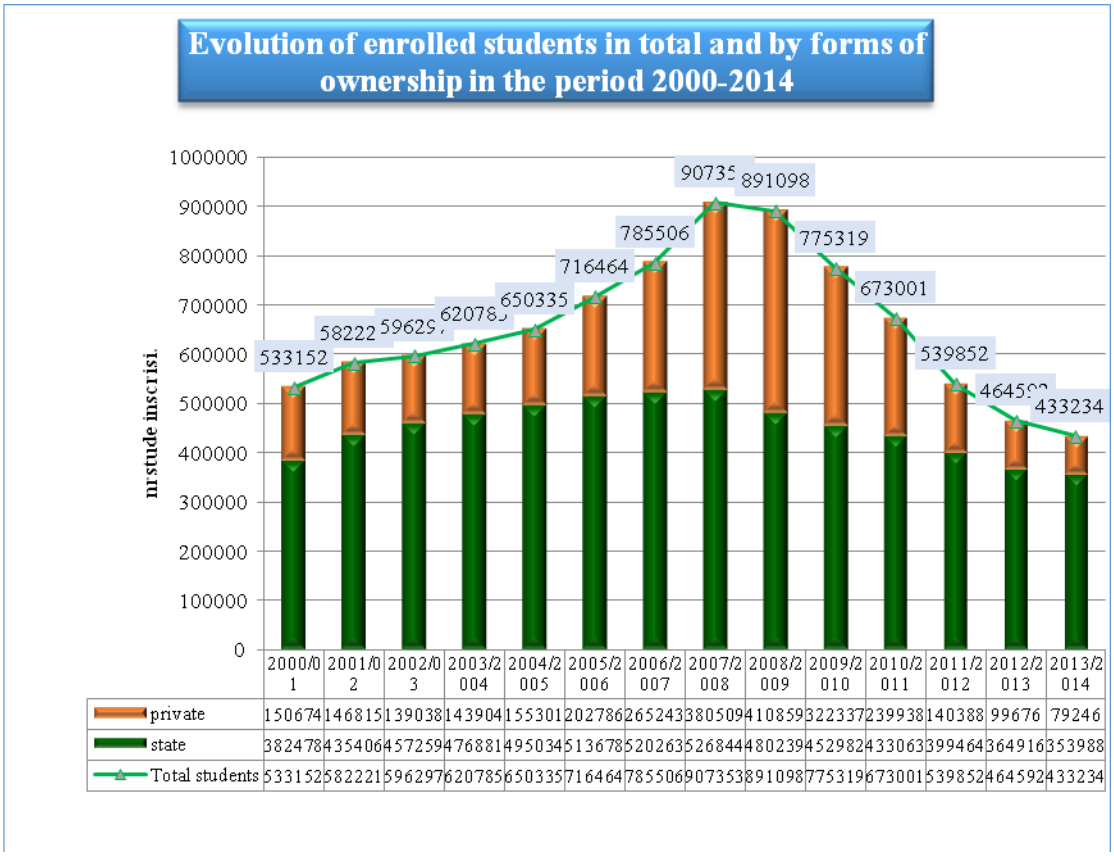


Figure II. 21 Evolution of enrolled students in total and by forms of ownership in the period 2000-2013

The dynamics of students enrolled has a parabolic shape similar to that of teachers in higher education. The maximum level recorded in 2007-2008 academic year, when the number of students enrolled increased by 70% compared to the beginning of the period under review.

The same parabolic-shaped trend is shown by number of students in both state and private HEIs. It is interesting the comparative evolution of the state / private ratio of number of students enrolled. Thus, while in the academic year 2000-2001 this ratio was 2.54, it increased continuously until the 2004-2005 academic year, after which it recorded continuous decrease until the 2010-2011 academic year, then increased continuously until the last year under review, when the ratio reached 4.47. In large part, this oscillatory variation occurs amid improvement of the legal framework for accreditation and authorisation of private HEIs.

It is important to specify that in the 2007-2008 academic year, graduated the first generation of students from the bachelor cycle in accordance with the principles of the Bologna Process and starting with the academic year 2008-2009, the first candidates for master as higher education cycle were given early admission.

Analysing the distribution dynamics of students by type of institution, we can see that, while 70% of students were enrolled in state universities at the beginning of the period, by the increasing number of those enrolled in private universities, they held a share of 46.11% in the 2008-2009 academic year.

Table II. 21 Number of students in total by forms of ownership in the period 2000-2013

Academic year	**Total** of which:	Form of education			
		Full-time education	Part-time education	Reduced frequency	Distance learning
2000/01	533,152	429,236	3221	62,787	37,908
2001/02	582,221	459,057	3363	72,895	46,906
2002/03	596,297	462,932	3006	70,778	59,581
2003/04	620,785	482,869	2433	66,698	68,785
2004/05	650,335	499,329	1229	61,272	88,505
2005/06	716,464	518,997	2602	60,874	133,991
2006/07	785,506	539,174	1115	68,013	177,204
2007/08	907,353	555,975	1132	89,335	260,911
2008/09	891,098	516,468	1616	93,842	279,172
2009/10	775,319	562,105	1626	132,654	78,934
2010/11	673,001	513,491	995	94,239	64,276
2011/12	539,852	442,613	592	46,628	50,019
2012/13	464,592	401,099	439	26,346	36,708
2013/14	433,234	381,944	260	20,519	30,511

Source: NIS Tempo-online statistici.insse.ro/shop/ accessed August 2015

Student distribution by development regions suggests the same territorial concentration in regions with established and renowned academic centers (Bucharest Ilfov, West and North East). *(Figure II.21).*

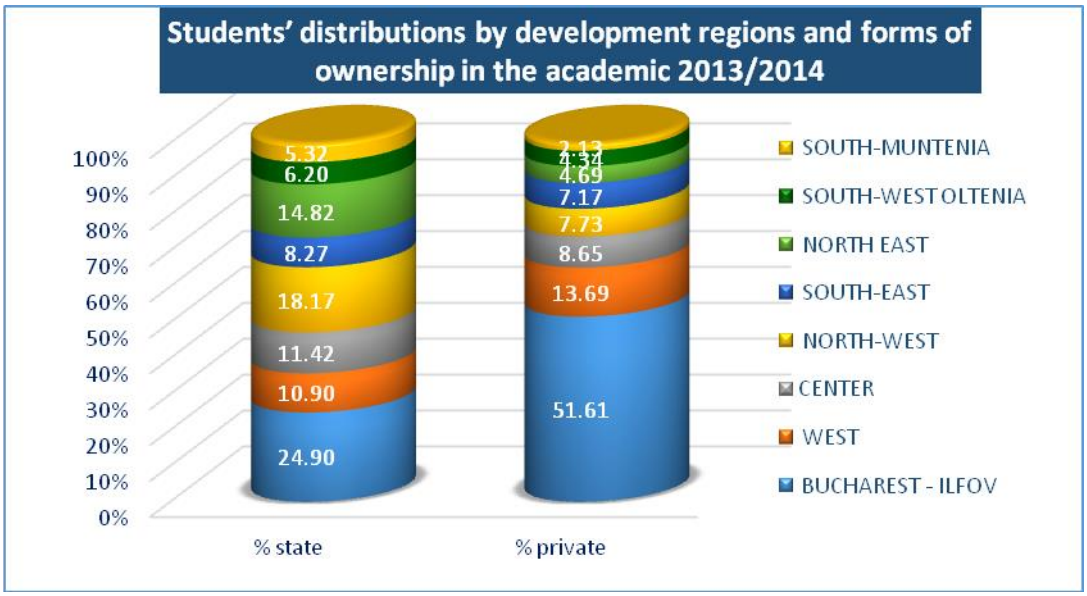


Figure II. 22 Students' distributions by development regions and forms of ownership in the academic 2013/2014

In the 2012/2013 academic year, in the undergraduate education 464,592 students were enrolled, out of which 30.5% in technical faculties, 26% in academic faculties, 20% in economic faculties, 12% in medical field universities, 10% in faculties of law and 2% in faculties of arts.

Table II. 22 Number of students by specialisations in the period 2000-2012

Year	Total number of students	By study fields					
		Tehnical	Medical	Economic sciences	Law	Pedagogical	Arts
2000	533,152	138,324	32,999	132,332	68,870	152,132	8495
2001	582,221	149,521	32,823	146,110	69,124	175,684	8959
2002	596,297	152,547	32,495	158,185	63,456	180,603	9011
2003	620,785	158,014	33,072	172,409	60,613	187,141	9536
2004	650,335	161,850	35,039	188,505	59,621	195,190	10,130
2005	716,464	164,736	36,422	221,619	63,586	218,860	11,241
2006	785,506	170,921	40,028	242,330	82,696	238,711	10,820
2007	907,353	178,258	41,398	294,417	116,538	265,624	11,118
2008	891,098	188,660	47,758	281,421	127399	235,923	9937
2009	775,319	168,863	50,059	223,961	112,621	210,126	9689
2010	673,001	160,432	54,375	170,217	96,148	182,442	9387
2011	539,852	156,344	54,545	114,703	64,011	141,789	8460
2012	464,592	141,711	55,777	92,653	47,195	119,526	7730

Source: NIS Tempo-online statistici.insse.ro/shop/ accessed August 2015

We can notice that in 2000-2008 period, the number of students enrolled is on an upward trend. The average increase in absolute values is 44,743 students per year. After 2008, with the completion of secondary education by generations born after 1990, the number of students is drastically reduced, reaching 464,592 in 2012, lower by 68,560 compared to the first year of the period under review (*Figure II.22*).

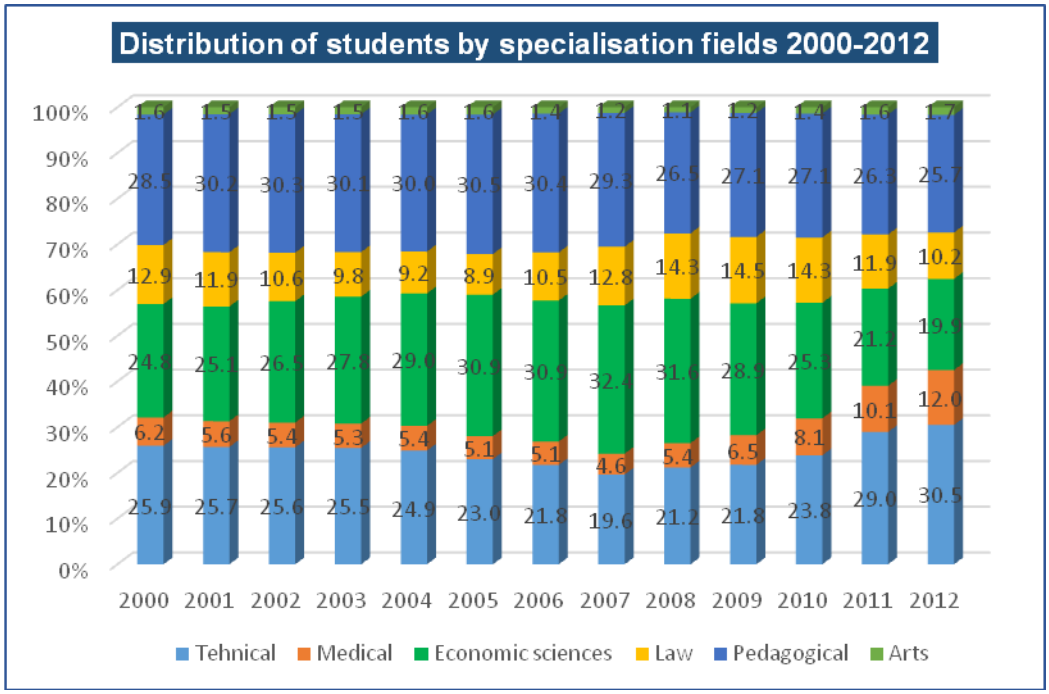


Figure II. 23 Distribution of students by specialisation fields 2000-2012

Regarding the distribution by groups of specialisations, in the years with maximum enrollment figures (2005-2008), the most requested specialisations were the economic and university-pedagogical. Reducing the number of students after 2008 affected the specialisation fields differently. The most affected are the economics, which decreased by 67.08% in 2012 compared to 2008, followed by legal sciences, with a 62.95% reduction and the pedagogical university ones, which decrease by 49.34% (*Table II.23*).

Instead, technical specializations decreased less, only by 24.89%. These different dynamics made that, in 2012, technical specializations to concentrate 30.5% of students. Regarding medical sciences, the number was slightly ascending trend for the whole period under review.

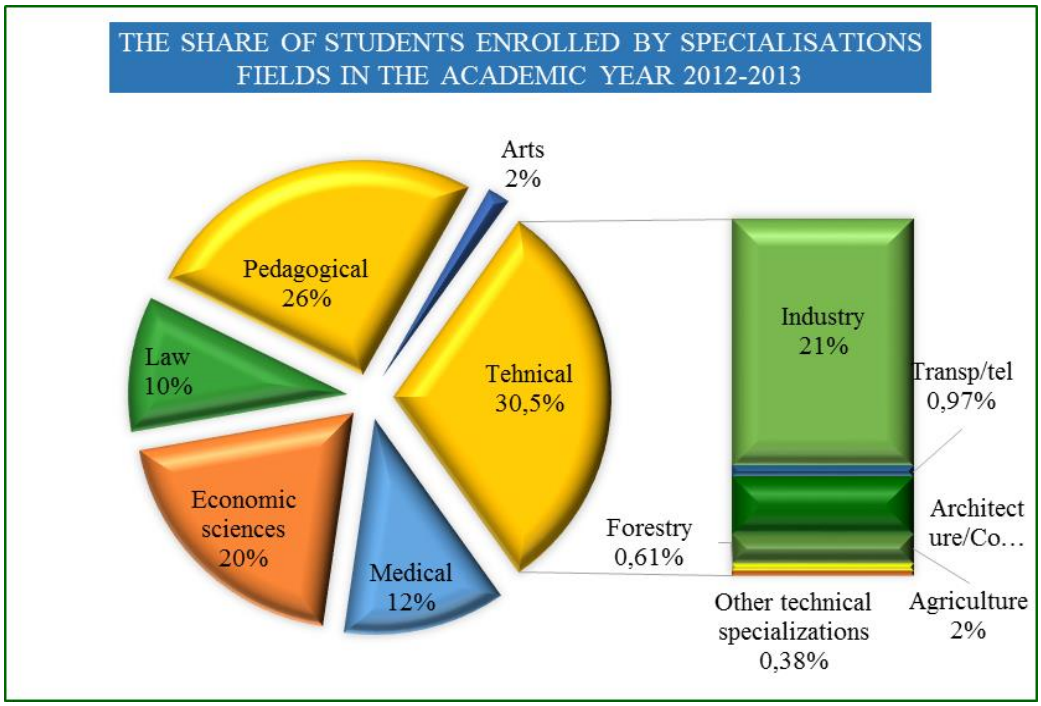


Figure II. 24 The share of students enrolled by specialisations fields in the academic year 2012-2013

The evolution by specialisation fields in the period 2000-2012 manifested differently: while the medical specialisations had a continuously increasing trend, the other specialisation fields (technical, economic, legal, pedagogical and arts) had a downward trend. In 2012, compared to the peak year 2007, the total number of students decreased by 48.8% and the specialisations showed a 34.73% increase in medical higher education institutions, and the other specialisation fields reduced as follows: 20.51% in technical; 68.53% in the economic; 50.51% in legal sciences; 55% in pedagogical field and 30.5% – arts.

2.2.4 Demand of students in HEI in the academic year 2014-2015

Out of the total capacity of enrollment existing in 2014-2015, only 59.57% is occupied in state HEIs (169,092 seats), with only 100,726 students enrolled in the first year of study.

It is interesting to know the ranking and distribution of students enrolled in the first year of study by universities (*Figure II. 25*).

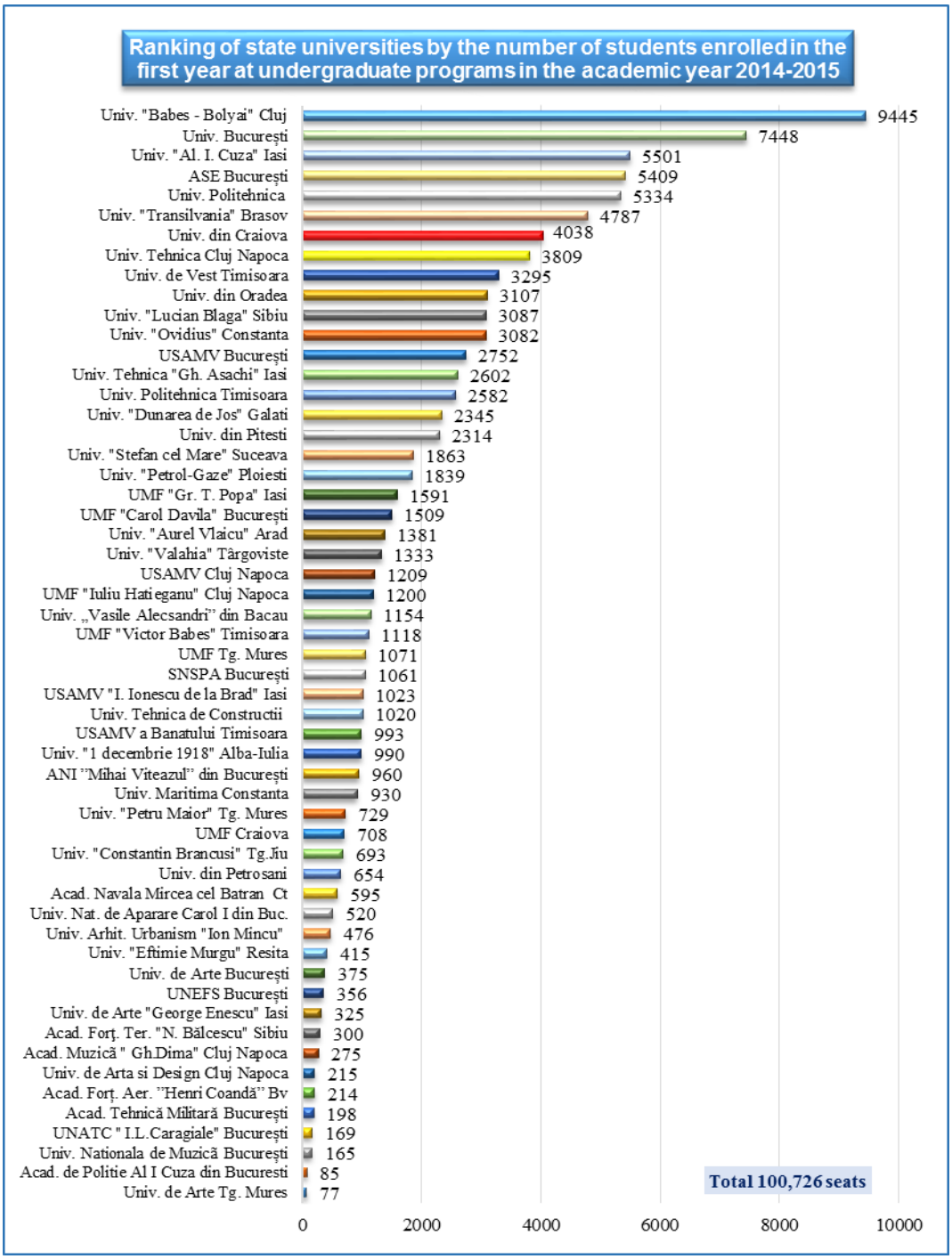


Figure II. 25 Ranking of state universities by the number of students enrolled in the first year at undergraduate programs in the academic year 2014-2015

The share of students enrolled in first-year seats financed by the state budget in bachelor programs in academic year 2014-2015 shows another ranking of

universities compared to the ranking of universities by the share of seats financed by the state budget in total enrollment offer for bachelor programs in the academic year 2014-2015. (*Figure II.25*).

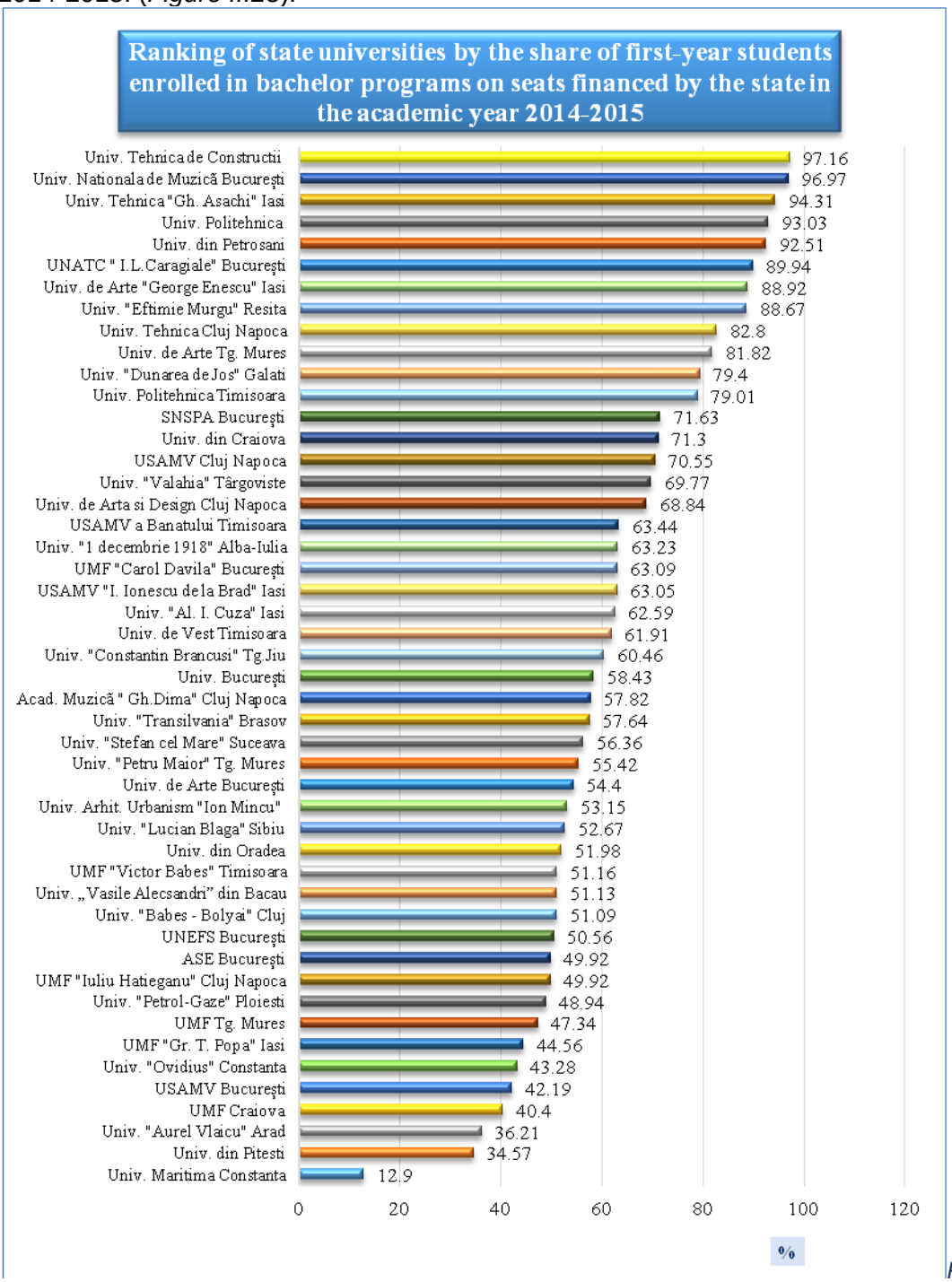


Figure II. 26 Ranking of state universities by the share of first-year students enrolled in bachelor programs on seats financed by the state in the academic year 2014-2015

2.2.5 Graduates – learning outcomes

The evolution of the number of graduates followed the same pattern as the number of students, with the expected gap determined by the duration of schooling. The main form of education is the reduced frequency for the entire period under review.

Table II. 23 Number of graduates by forms of ownerships and forms of education existing in Romania in the period 2000-2012

Academic year	Graduates[57]			Form of education				Foreign students
	Total of which:	state	private	Full-time education	Part-time education	Reduced frequency	Distance learning	
2000/2001	76,230	53,855	22,375	69,932	648	5296	354	:
2001/2002	93,467	65,919	27,548	83,413	1007	7229	1818	:
2002/2003	103,402	77,396	26,006	90,042	637	8023	4700	:
2003/2004	110,533	83,744	26,789	93,600	303	8363	8267	1926
2004/2005	108,475	82,739	25,736	88,814	251	11584	7826	1724
2005/2006	112,244	85,908	26,336	87,524	180	11751	12789	1694
2006/2007	125,499	91,660	33,839	95,541	191	7311	22456	1492
2007/2008	232,885	144,857	88,028	155,833	85	14909	62058	2556
2008/2009	214,826	123,023	91,803	130,665	148	22264	61749	1941
2009/2010	191,291	93,869	97,422	135,684	234	38267	17106	1910
2010/2011	186,900	92,444	94,456	133796	146	37442	15516	2158
2011/2012	136,671	92,605	44,066	106728	108	15482	14353	2454
2012/2013	111,028	81,081	29,947	93223	123	7614	10068	2784

Source: NIS Tempo-online statistici.insse.ro/shop/ accessed August 2015

Data in *Table II.24* the graphical representation *Figure II.26* highlight the following:

- The number total of graduates, as well as the number of state and private graduates, was descending from the academic year 2007/2008 until 2012/2013. In 2012/2013, the total number of graduates was 111,028, of which 81,081 from state universities and 29,947 from private universities. The highest number of graduates, overall and by form of ownership, was registered in the academic year 2007-2008.
- The "state / private" ratio in the number of graduates of HEIs was higher than the numbers of students enrolled in the period 2000/2001-2008/2009 and the annual ratio was lower starting with 2009/2010 until 2013/2014.
- The gap between graduates and the students enrolled in state HEIs and those in private HEIs is attenuated during 2007/2008-2010/2011 period and increased in 2011/2012 and 2012/2013 academic years.

[57] *Note: NIS The number of graduates refers to the end of the academic year*

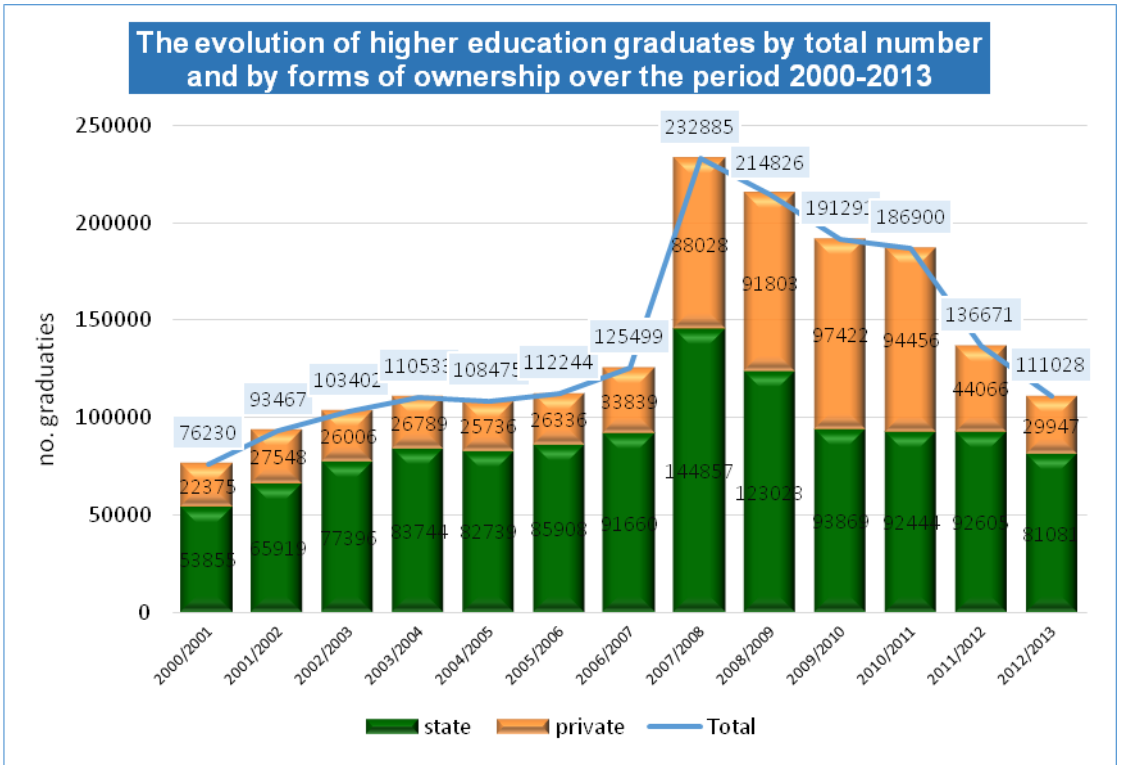


Figure II. 27 The evolution of higher education graduates by total number and by forms of ownership over the period 2000-2013

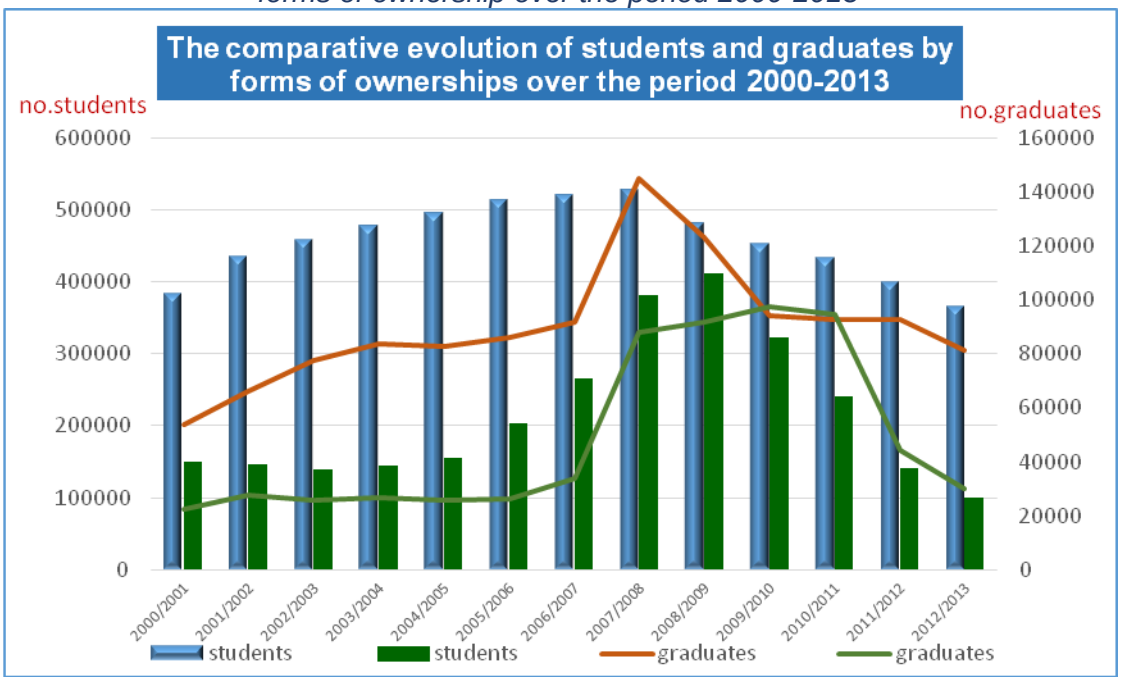


Figure II. 28 The comparative evolution of students and graduates by forms of ownerships over the period 2000-2013

Acceleration of free movement and harmonization and international standards led to exponential growth of both students enrolled from other countries and the number of graduates from other countries.

The territorial (regional) distribution of HEIs graduates in the academic year 2012/2013 is shown in Figure II.29

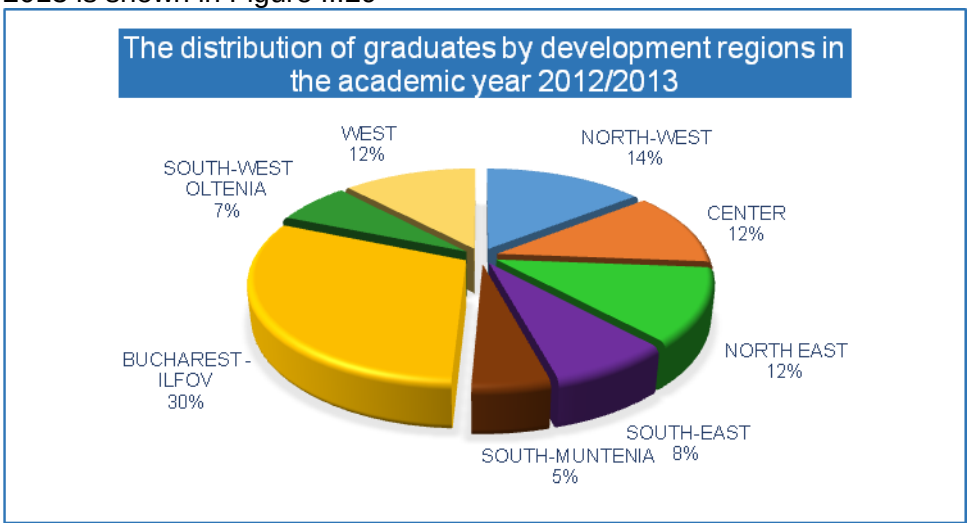


Figure II. 29 The distribution of graduates by development regions in the academic year 2012/2013

By development regions, the distribution of higher education graduates is as follows: 11.86% – Northeast, 7.69% – Southeast, 4.91% – South-Muntenia, 6.7% – South-West Oltenia, 12.08% – West, 14.42% – Northwest, 11.81% - in the Centre and 30.51% in Bucharest-Ilfov region (*Figure I.29*).

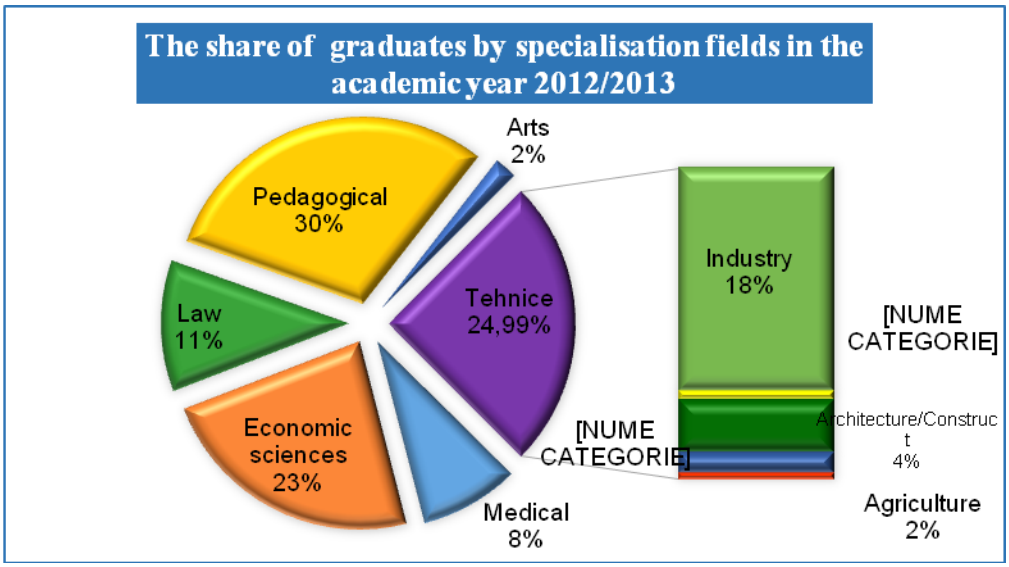


Figure II. 30 Distribution of graduates by specialisation fields in the academic year 2012/2013

The graduates of 2012-2013 academic year are mostly from pedagogical field of specialisations (30%), followed by those in technical field (25%). After 2010, the share of students from economic specialisations was on a downward trend and the share of graduates in this field is only 23% in 2013 (*Figure II.30*).

2.2.6 Projection of youth groups – prospective students during 2016-2020

The dimensions of young people cohorts who could be enrolled in higher education in the period 2015-2020 depend on 1993-2001 generations as demographic recruitment pool in the mentioned period. These generations were born in the context of economic, social and geo-political transformations after the fall of communism in late 1989. The birth rate was one of the demographic phenomena most sensitive to changes of transition, and its oscillations were propagated over time in all forecasts from the economy, health, education, social assistance etc.

Few milestones in the evolution of the birth rate after 1989

After December 1989, with the abolition of forced pronatalist policy measures taken by the communist regime, the birth rate in Romania fell dramatically from year to year. If the decline was predictable, its magnitude surprised even the most pessimistic demographers. In a very short period, 1990-1993, the birth rate fell below 1.5 children per fertile woman during her fertile life (15 to 49), while the threshold of exact replacement of generations is 2.13 children per woman. If in 1990 over 300,000 children (314,700) were still born, three years later, the number of live births decreased by approximately 65,000 and in 2000 was only 210,500 live births. The

birth rate in 1993 fell by 20% compared to 1990, and the downward trend continued, with the exception of the interval 1997-2000 (*Figure II.31*).

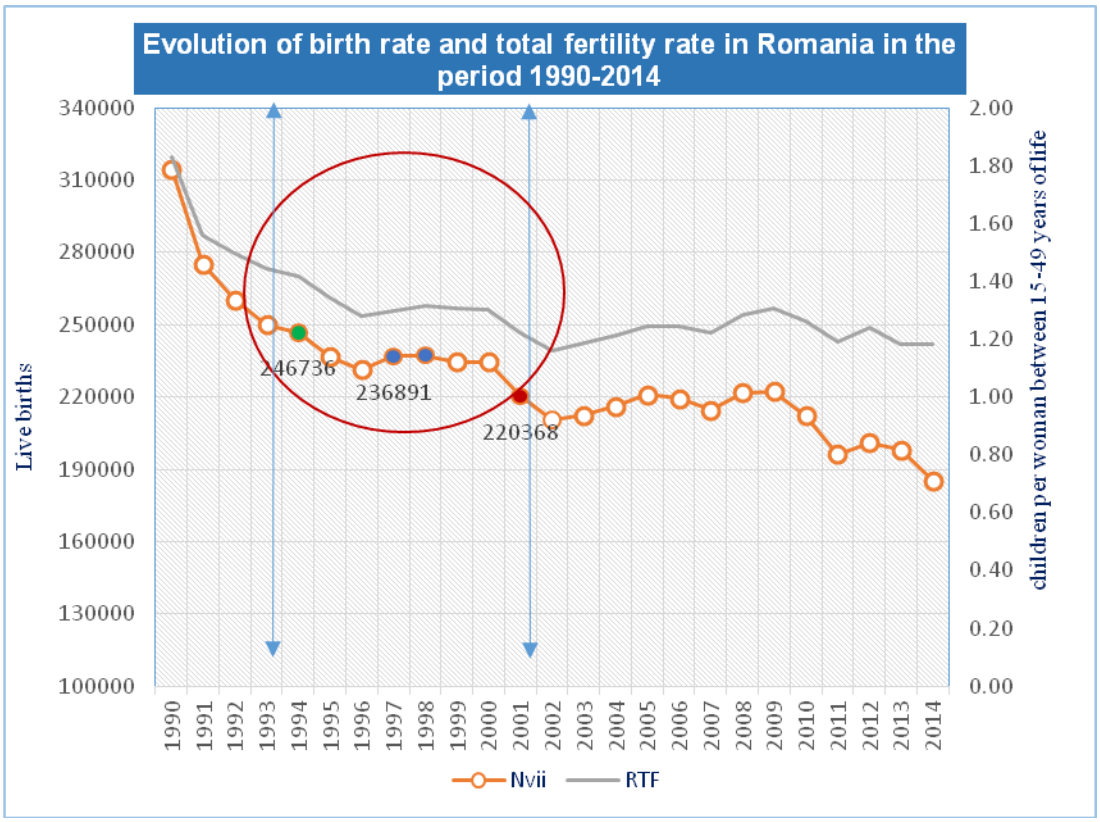


Figure II. 31 Evolution of birth rate and total fertility rate in Romania in the period 1990-2014

Note: RTF - total fertility rate (TFR)
Nvii -number of living
Source: Developed by authors based on data from
http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=POP201A and
http://statistici.insse.ro/shop/?page=tempo3&lang=ro&ind=POP203A#

The generation born in the period 1993-2001, with ages of entry into higher education system in 2015-2020 (*Figure II.32*) come from parents mostly born after entry into force of the famous Decree 770/1966 that banned abortion on demand.

The mothers are the women of Romanian baby-boom (1967-1970) who, between 1993 and 2000, were in their most fertile period, exactly in the age group 20-29. Even if they gave birth to only one child, their big number strongly fuelled the fertile female contingent of that period and birth rate rose by a structural-quantitative effect. “Demographic dividends collection” of pro-natalist and coercive policy was seen in the increased numbers of 1997 and 1998 generations, the only years after1990 when the birth rate exceeded 236,000 live births per year.

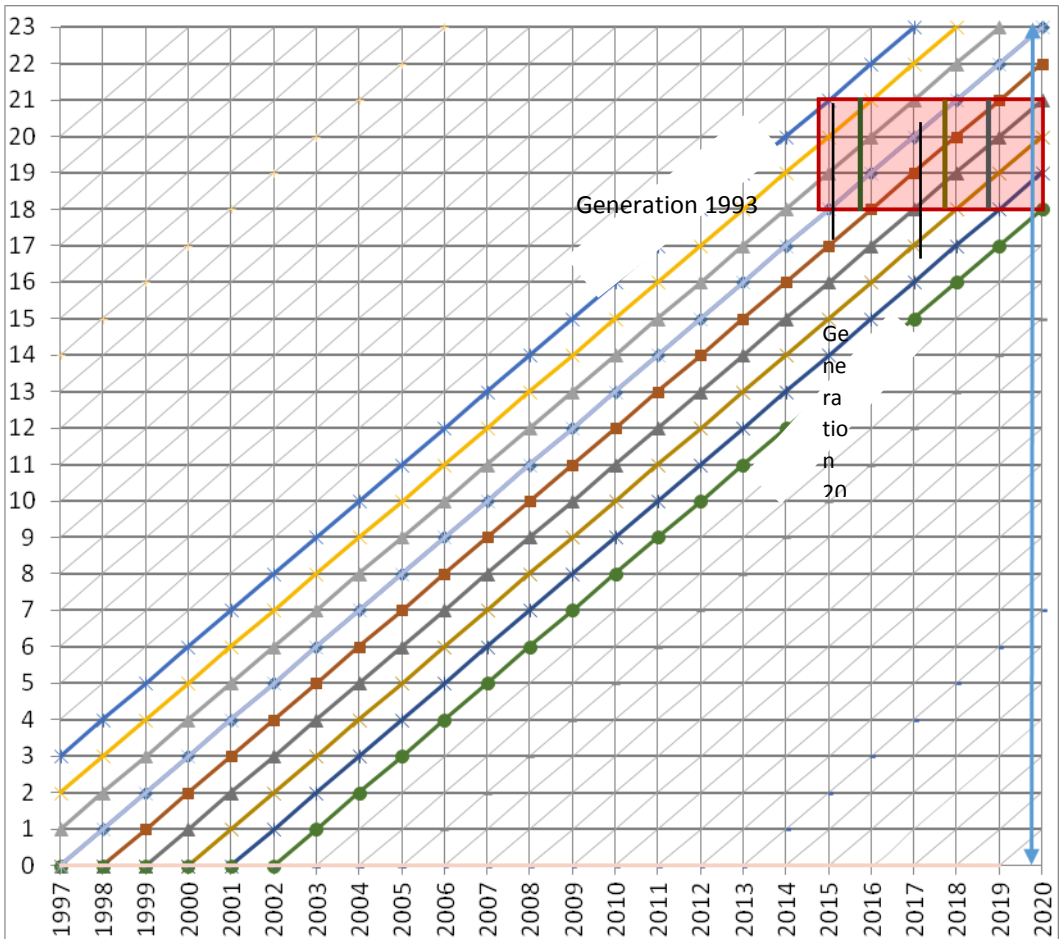


Figure II. 32 Lexis diagram for generations born during 1993-2000 to 2020 horizon

Source: Authors

At the same time, the birth rate had influence on the reproductive behaviour of the population, synthesised in total fertility rate (TFR) as quality factor (Figure II.31). Between 1993 and 2000, RTF recorded values that varied between 1.28 and 1.5 children per fertile woman and the downward trend continued in several episodes: 2002, 2007, 2011 and 2014, and in the last year it was down under the historic threshold of 1.2 children per fertile woman. The measures in the spring of 2003 were likely to boost the birth rate of employed women, especially of those over 30 years in urban areas, having at least upper secondary education[58]. The recovery was short-lived, as the financial crisis occurred, so the measures meant to encourage birth rate lost their appeal, and the emerging economic problems caused delays in childbirth of wanted children.

[58] *Gheţău, V., "Demographic growth policies. How birthrate balanced towards employed and trained women. Romania and European family policies"; 2012.* http://cursdeguvernare.ro/politici-de-crestere-demografica-evaluarea-masurii-care-a-balansat-natalitatea-catre-femeile-salariate-si-instruite-cum-sta-romania-fata-de-politicile-familiale-europene.html

In the Lexis diagram, the thickened segments located on the lanes of 18, 19 and 20 years old represent the number of young people that could enter higher education in each year of the forecast period, on 1st of October (*Annexes II.5a and II,5b. and fig.II.32*). On the vertical axis (OY), there are the ages in years old of the generations analysed and on the horizontal (OX) each generation can be viewed since its birth until the entry into higher education of the specific age group (18-20 years). For example, on October 1, 2017, the population that has the best chances to form the entry cohort in the tertiary education system is recruited from 1996-1999 generations. Instead, young people who could become students on October 1, 2020 will come from 1998-2001 generations (*Figure nr. II.32*).

Demographic assumptions of projecting

The projections are based on two assumptions. In the first category, of institutional assumptions, we mention the hypothesis that short-term changes *will not intervene in the entry age into each grade or in the current organization of the education system on all levels before the tertiary level*. The second category is that of technical-demographic assumptions presented below.

The demographic projection of young people who potentially could be candidates in higher education in 2020 was developed in two stages:

I. **Fundamental demographic projections of survivors** at the beginning of the school year 2014-2015 over the entire projection period from 2015 to 2020. The method used was the method of components, and the starting base was the school population by annual age in the group aged 13-20 in the school year 2014/2015, taken from the NIS.

Assumptions and work procedures (*Annex II.5*):

1. *The hypothesis of "law of constant mortality".* For each year in the 2015-2020 interval, the probabilities of survival for ages 13-20 years kept constant at the level of 2013, as extracted from Tables of mortality from 2011 to 2013, the latest available on Eurostat for Romania.
2. *Procedure*: In this case, we extracted the probabilities of survival for the ages mentioned, and we subsequently converted them into probabilities of survival in perspective (*Annex II.7*).

II. **Projection of school effectives by ages and gender,** by applying enrollment rates from one grade to the next in effectives of survivors, by gender and age.

3. *The hypothesis of constant enrollment rates,* unchanged from one grade to another for each year of the projection period.
4. *Procedure*: from the school year books, editions 2012/2013, 2013/2014 and 2014/2015, for grades of secondary, upper secondary and higher education, we extracted indicators on the number of students enrolled by gender, grade and age. On this basis, we calculated the enrollment rates in 2014/2015 school year, by gender and ages 13 to 20 years, taking into account the

transition from one grade to another. Also, for ages 18, 19 and 20 years we determined a high school graduation rate, a rate of the baccalaureate exam pass and a rate of enrollment propensity of the current promotions for the first time in higher education. All this was necessary in order to estimate the potential entrant effectives in higher education system.

5. *Outputs from the system through migration and/or abandonment, by grade, gender and age* are implicitly captured for 2013-2015 period, by calculating and using of **enrollment** rates from one grade to the next in the projection.
6. *The hypothesis of conservation of the education system structure for the school year 2014-2015,* with all that this entails (education law, institutional organization, entry ages in different cycles, education routes etc.)

The results of the projection

In the fundamental projection that we developed in the first phase, we applied the method of components (*annexes II.6-II.9*).

Assuming that, for the next 5 years, as in the school year 2013-2014, will be maintained the same pattern of:

- ✓ enrollment rates by gender from one grade to another, starting with the seventh grade and ending with the twelfth,
- ✓ high school graduation rates by gender and age
- ✓ exam pass rates baccalaureate, sex and age
- ✓ enrollment rates in the first year of undergraduate study for the first time and from the current promotion,

then the effectives of young people who could enter higher education in the 2015-2020 period increase by approximately 22.1000 young people on average per year, from 109,839 persons in 2015-2016 to a maximum of almost 138,853 people reached in 2019-2020 (*Table II.25*). Although girls predominate, the annual average increases are higher among boys (11.500 boys per year, compared to 10,600 girls per year).

Table II. 24 The effectives of high school graduates before BAC, with BAC diploma and potential enrolled in higher education for the first time in the current promotion

Indicator/school year	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Total number of high school graduates before baccalaureate	207926	243571	253673	269264	264943
Total number of high school graduates who passed the baccalaureate examination	109839	127806	133066	141060	138853
Number of enrolled in higher education for the first time in the current promotion	94664	110341	114892	121835	119916

Source: authors' projections, made by using the method of components

In projecting the effectives of prospective students, we took into consideration the evolution of students cohorts enrolled in the fifth to twelfth grades, for which the starting point in the projection was the number of students by age and gender in the 2014-2015 school year. Dropouts and emigration of children are already included in this numbers, as the indicator is the school population by gender and age taken from the NIS website and the enrollment rates from one grade to the next ensure implicitly the inclusion of these phenomena.

As mentioned above, girls predominate in each year (*Figure II.33*), which was expected as they have a lower propensity to dropout than boys. At the same time, the enrollment rates that we calculated by age and gender are closely linked to promotion rates and indicate, for each transition from one grade to another and from one age to another, a promotion rate always higher for girls compared to their male peers (*Annex II. 5*).

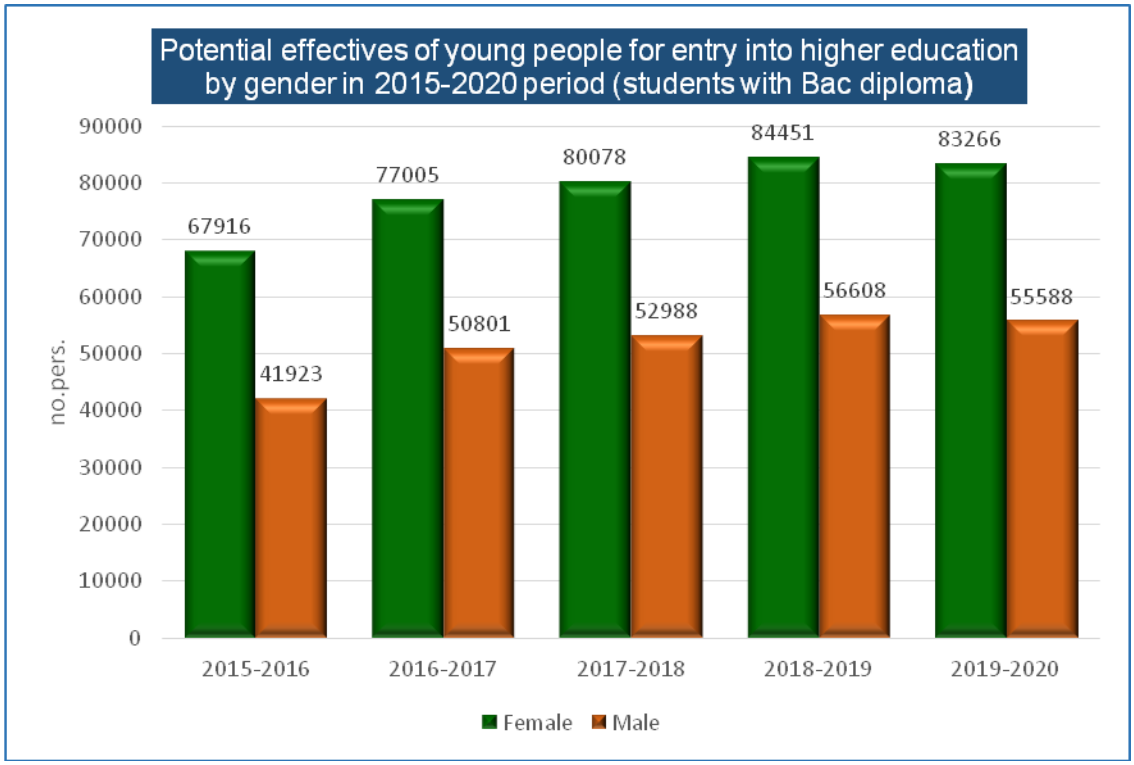


Figure II. 33 Potential effectives of young people for entry into higher education by gender in 2015-2020 period (students with Bac diploma)

Source: Based on data from Annex. II.8

The upward trend was foreseeable, due to the size of generations that fuelled the 1993-2001 school population cohorts to which we refer in this analysis. So, by 2020, the higher education system in Romania still benefits from a "window of demographic opportunities" through the higher dimensions of 1997 and 1998 generations and by maintaining the birth rate at levels over 220,000 live births as until 2001.

Table II. 25 Potential effectives of first-year students enrolled for the first time and from current year in the period 2015-2020, while maintaining the same rate of enrollment in higher education as in 2013-2014

Gender/year	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Female	56062	63565	66102	69712	68733
Male	38601	46776	48790	52123	51183
Total	**94664**	**110341**	**114892**	**121835**	**119916**

Of the total students who are expected to pass the baccalaureate exam, as potential candidates for higher education, only a part will enrol in higher education, namely in a university in Romania.

If we adopt the 2014-2015 academic year model of enrollment of the current promotion of high school graduates in higher education, then cohorts of students in the first year could grow by 25,300 persons per year from 94,700 persons in 2015-2016 to 119,900 persons in 2019-2020. During the entire period 2014/2015-2019/2020, this means an increase of 6,300 persons or by 6,1%.

It is noteworthy that, this time, the average annual increase is more important in young females 3,170 per year) compared to the young males (3,150 per year), leading to a gender cohort of potential students dominated by girls (who represent 57% of total number).

The results of demographic projections for possible cohorts of students in 2020 depend on school population data available at the beginning and at end of year, on three simultaneous characteristics, age, gender and grade. With all the limitations and restrictions imposed by assumptions, the exercise developed has the power of a valuable message that reflects future developments in the higher education market demand in Romania. Such an exercise is useful for education decision-makers, those who develop policies with the aim of improving the quality of education in Romania.

2.2.7 Research, development and innovation

It is known that many universities in the world have created a world-renowned education system through their research and development centers/institutes.

The analysis of HES human resources in research and development aims to present the place and role of higher education institutions in the development of science, technology and innovation in Romania. NIS, in the Chapter Research & Development and Innovation, presents the number of employees in research and development in four operating sectors. (Table II.27)

Table II. 26 Level and dynamics of employees from research and development by operating sectors in the period 2005-2013

Sector/year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	41,035	40,758	42,484	43,502	42,420	39,065	42,363	42,674	43,375
Business sector	16,647	14,438	13,468	12,144	11,147	8691	11,575	11,883	11,512
Government sector	10,258	8706	9185	10,795	9018	8987	11,106	11,867	12,966
Non-profit private sector	241	170	182	200	129	208	221	224	181
Higher education sector	***13,889***	***17,444***	***19,649***	***20,363***	***22,126***	***21,179***	***19,461***	***18,700***	***18,716***
HES share in total %	***33.85***	***42.80***	***46.25***	***46.81***	***52.16***	***54.21***	***45.94***	***43.82***	***43.15***
HES dynamic pace compared to 2005%	***-***	***+25.6***	***+41.5***	***+46.6***	***+59.3***	***+52.5***	***+40.1***	***+34.6***	***+34.8***

Source: data taken and processed upon http://statistici.insse.ro/shop accessed August 2015

According to statistical data and dynamic analysis, we can see that, overall, the number of employees in this area in 2013, compared to the first year of the analysed period, increased by 2,340 persons or by 5.7%. This change was due primarily to the increase of HES staff of researchers with 4,827 persons and with 2,708 persons in the government sector.

Conversely, in the *non-profit private sector,* the number of employees in research and development fell by over 5,000 people (-30.15%). Therefore, of a structural viewpoint, the share of employees in the research and development in HES in the analysed period shows significant changes. Thus, while in 2005, the sector had 33.85% of the total of domestic researchers, in 2014, over 43% of researchers are in HES, followed by the government sector with 29.9%.

In our opinion, this is due both to European projects launched in 2007 (with integration in the EU) and the criteria imposed by the Ministry of Education at doctoral level, namely the criteria for granting academic titles and the ranking criteria of higher education institutions.

2.3 Relational capital of RHES

Within the society of knowledge, universities aim to generate and transfer knowledge to individuals and society as a whole through education, research and innovation. In order to fulfill their complex mission, universities interact with individuals and entities of the State and socio-economic environment. This creates a relational capital of academia.

RHES relational capital is defined as the totality of relationships between higher education institutions and those who interact with the system (stakeholders). The relationship system is defined based on the role of universities in socio-economic life, namely to train skilled human resources and generate knowledge. Through both initial and ongoing education, universities aim to develop in their graduates the skills required in the labour market, including in the research area. However, through

research, development and innovation, universities seek results that can impel specialised research activities and results (models, technologies) that are convertible and applicable in the socio-economic environment.

In this regard, universities in Romania interact with different entities, positioned both upstream and downstream of the university educational process. Thus, the universities have relationships with the public governance regulating the operating framework of academia (ministry, authorities and agencies which have the role to regulate/fund research, to establish a system of qualifications, quality assurance, etc.). At the same time, universities establish relationships with higher secondary education institutions, in order to understand the expectations and interest of potential students on higher education.

A real challenge for universities is to strengthen the relationships with socio-economic actors in order to minimize the differences between the university education system and market needs. This difference can be seen:

- in a positive way, in which case students acquire skills more sophisticated than the market requirements;
- in a negative way, in which case the acquired skills are below market demands.

In this case, minimizing the differences is not only the effort of academia to cope with constant changes in the socio-economic environment, but also a redefinition of business processes according to the new models of the knowledge society and a higher permeability of the business environment to the new ideas and technologies.

Consequently, universities have partnerships with socio-economic entities to adapt the university offer to labour market requirements, and to transfer knowledge to the socio-economic environment. In this way, universities try to provide graduates with those competencies ensuring their social integration easier and closer to the level of competence acquired.

Moreover, universities establish cooperation horizontally with other universities in the country and/or abroad, with the purpose to conduct joint education programs (exchanges, mobility) and/or research programs. At the same time, universities establish partnerships with research entities in the country and/or abroad on order to conduct joint research projects, but also with entities in socio-economic environment in the country and/ or abroad in order to facilitate a better connection between students and the labour market (practice and internship programs). Institutional relational capital developed in universities is shown in *Figure II.33.*

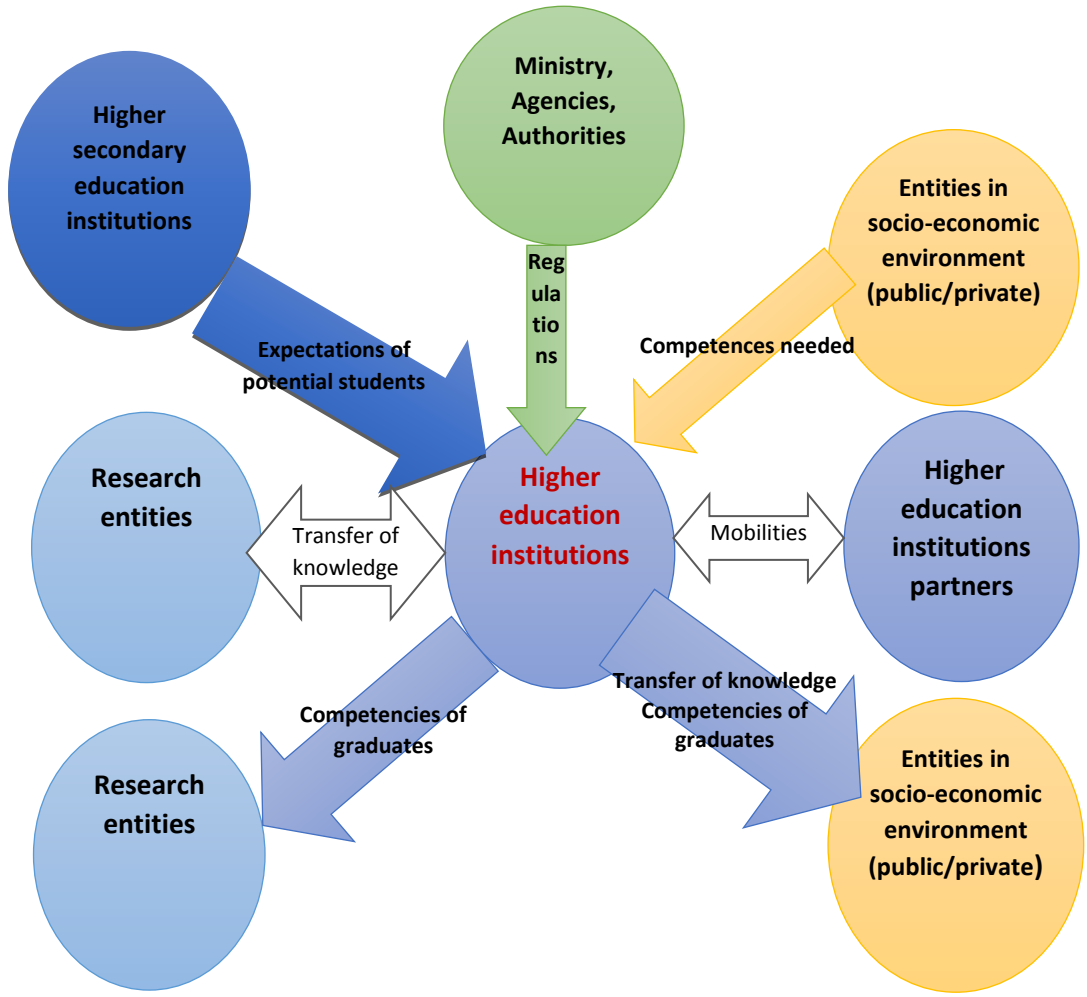


Figure II. 34 Relationships in academia
Source: Authors

Apart from networking at institutional level, universities establish direct relationships with individuals, namely those who wish to pursue a university program at any level (Bachelor, Master or Doctorate).

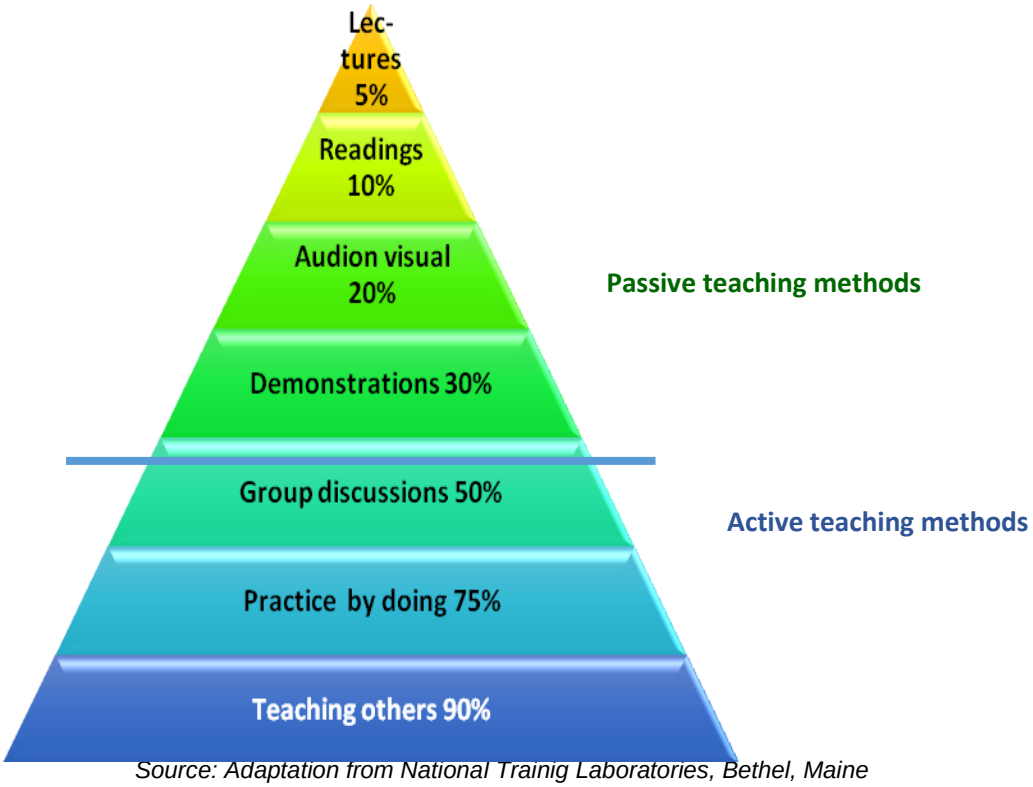
At the same time, universities maintain contact with graduates to pursue their careers and thus to be able to verify and factually validate the quality of education.

2.3.1 Relationship and knowing of students

Even though the phrase "student-centered learning" has been mentioned and debated since the early twentieth century, the Bologna Process, initiated by the Bologna Declaration signed in 1999, emphasised this approach in developing educational policies. Thus, learning is placed at the center of training of each student, highlighting the idea that individual needs are not the same, that the students have different interests, choices, experiences and knowledge. Subsequently, the focus

moved from teaching and assessment to the learning process, where the student is no longer perceived as a passive subject in education and training, but seen as a partner of the teacher in conducting the educational process, in assessing quality and shaping their own educational path.

In order to implement such a process and truly meet the requirements of students, it is very important for students to support their opinions, to be truly heard and involved. In this respect, students became "active partners" of processes undertaken within higher education institutions. To this end, a redesign of the educational process is needed, so that more weight be given to active teaching methods, namely the involvement of students in the educational process according to the learning pyramid shown in *Figure II.34.*



Source: Adaptation from National Trainig Laboratories, Bethel, Maine

Following the focusing of education on students, their role increase in the academic community and decision-making. Institutional involvement of students is supported by the legislation of recent years. In Romania, from the Law on quality 87/2006 as amended and supplemented to the National Education Law 1/2011 as amended and supplemented, we find compulsory the student involvement into committees (Committee for Evaluation and Quality Assurance, Committees for curriculum, Ethics Committee etc.), the University Senate, government or university structures in higher education (ARACIS, University's Council for Ethics and Management etc.). In all higher education institutions in Romania teacher evaluation is done by students, and

even if in some cases iti is noted the formal character of this activity, these assessments are most often integrated into university strategies. From the viewpoint of quality assurance, student involvement in the processes of external evaluation conducted by ARACIS is an asset, providing an objective perception of the "direct beneficiaries" of the university offer, but at the same time, at the level of the internal quality assurance, it was found that their involvement is done to a lesser extent. This is not a from of "resistance" bt teachers or institutional management, but rather a consequence of the fact that quality assurance practice hasn't been fully internalized; in many cases this practice remains decoupled from the teaching / learning / research processes conducted in universities.

Involving students is a constant challenge for higher education institutions and be further supported both by universities and by coherent and consistent educational policies.

However, knowing students is a process that begins in upstream, namely with identifying the profile of potential students. To this end, universities establishes relationships with preuniversity institutions, especially with upper secondary institutions, in order to know the interest of potential students for a university course, but also to understand their expectations from academia. At the same time, besides the interaction with upper secondary institutions and students from terminal grades, universities organise a series of events designed to promote the university offer and to familiarize prospective students with academica and all it can offer them. Moreover, joint activities organised between pre-university and university institutions and have the role of identifying the perspective and needs of potential students so that the offer of higher education institutions to be as close as possible to the projections of potential beneficiaries. At the same time, higher education institutions can better inform the future graduates and prospective students on labour market requirements in order for them to be able to define more easily their educational course and training. Thus, higher education institutions can complement and facilitate the effort of professional counselors so that students to be more focused on defining their career.

Higher education institutions addresses to all stakeholders, namely high school graduates with baccalaureate diploma wishing to pursue an undergraduate program, and university graduates wishing to pursue a second faculty or a master program. To this ent, university offer fairs are organized, where prospective students can compare all universities in Romania, but also those from abroad, in order to decide which is the university offer that best suits their personal projections of professional development.

Another way for the potential students to know the academia is the organisation of "open days", events where students can learn concrete information and even experience a day in a university. In this context, various activities are organised, such as seminars, workshops, thematic contests, presentations of academic programs/

courses, etc., thereby giving to prospective students the opportunity to interact with students who attend the university and with teachers in faculties they are interested in.

2.3.2 Relationship and knowing of partners in the academic and research environment

Developing partnerships between higher education institutions in Romania was one of the priorities for higher education strategies, supported by normative documents, from Law no. 287/2004 – Law on university consortia, to *National Education Law 1/2011*. It should also be noted that in assessing applications for European funding of certain projects, partnerships have been and still are an advantage, which has encouraged the conclusion of numerous partnerships between universities, most of which continued after the completion of the projects implementation.

Apart from belonging to the European Higher Education Space, Romania has tried to develop a national identity, adapted to the context and challenges. Even if we can't talk about a consensus, in recent years we noted the emergence of certain university consortia supporting projects for the member institutions, as for example, one of the most representative consortia in Romania aims:

"*The aim of the consortia is the cooperation between partner universities in order to raise the level of scientific research and education, the national and international recognition of their prestige and their ranking among the benchmark universities in Europe, the improvement of legal framework on higher education and scientific research in universities, as well as the uniform definition of university study programs and minimum standards for them, also of titles and qualifications acquired following their graduation."* – http://universitaria.ase.ro/despre-universitaria/

By accessing the websites of higher education institutions, we can see considerable growth in national partnerships between these institutions in recent years. These partnerships are not only declarative, but they are reflected in many joint projects, management development projects, research projects, projects concerning the compatibilitisation of study programs, but also university programs developed in collaboration. These partnerships are established not strictly between academic institutions within the same area, but they try to increase the quality of scientific research, professional performance and competitiveness of human resources on the national and international market by encouraging interdisciplinary education and research. There are agreements between universities which also set conditions to facilitate student mobility for various periods of time.

Universities have traditional relationships of cooperation between them, in order to make exchanges for improving the educational process and ensuring its quality. Thus, besides national university partnerships, an important role has the international openness of universities, reflected in academic exchanges at international level, for learning and research purposes.

The international openness was facilitated by the Erasmus Programme, implemented in the period 2007-2013. This European programme was an opportunity for both students, with the purpose of testing the educational process in another university and doing internships (*Student mobility for studies – SMS, Student mobility for placements – SMP*), and the teaching and research staff that benefited from mobilities in other European universities (*Staff mobility for teaching assignments – STA, Staff mobility for training – STT*). It is also emphasized that Erasmus Programme involves the development of partnerships between higher education institutions where mobilities are deployed. Thus, these institutional partnerships capitalize on relational portfolio of HEIs. In addition, through the experience and skills gained, the participants in mobilities ensure a higher level of education. It is emphasised that these exchanges are aimed at recognizing skills acquired, using the ECTS system.

At the same time, international orientation and partnerships developed are a quality indicator demonstrating the capacity of higher education institutions to engage in international programs and to support students and teachers mobilities in both ways, namely outgoing (sending students/teachers in other universities) and incoming (receiving foreign students/teachers in their own institution). The inflows show the HEIs to provide attractive study programs taught in major international languages.

According to the report issued by the National Agency for *Community Programmes in Education and Vocational Training (ANPCDEFP), the number of Erasmus beneficiaries, both at institutional level and at the students and teachers level in higher education institutions increased in 2007-2013, as shown in Table II.28.*

As shown in Table II.28, 35,515 persons from higher education institutions benefited from mobilities financed by Erasmus, of which over 70% were for students who spent a 3-6 months period studying or doing internships in European Union countries. However, observing the evolution of mobilities during the Erasmus Programme implementation period 2007-2013, we found that the student mobilities for studies in other universities from Europe grew in the period 2007-2011, followed by a period of decline during 2011-2013, which was primarily caused by the economic crisis, but also by the difficulties in achieving parity exchanges, respectively in balancing outgoing and incoming flows. Nevertheless, we noted a significant increase on the

number of students who benefited from placement programs, namely from practice abroad. This shows an orientation of students towards practical work experience, which is more likely to ensure finding a job.

Table II. 27 Beneficiaries of Erasmus Programme in the period 2007-2013

Year	No. of univ	Total student mobilities	SMS[59]	SMP [60]	Total staff mobilities	STA[61]	STT [62]	Total mobilities
0	1	2	3	4	5	6	7	8
2007/2008	55	3379	2953	426	1137	952	185	4516
2008/2009	57	3744	3064	680	1263	1001	262	5007
2009/2010	61	3994	3129	865	1642	1151	491	5636
2010/2011	66	4604	3503	1101	1750	1184	566	6354
2011/2012	66	4578	3380	1198	1982	1273	709	6560
2012/2013	69	5011	3212	1799	2431	1498	933	7442
TOTAL		**25,310**	**19,241**	**6069**	**10,205**	**7059**	**3146**	**35,515**
Dynamics in 2013 compared to 2007 %	*126*	*148.3*	*108.8*	*422.3*	*213.8*	*157.4*	*504.3*	*164.8*
Absolute modifications in 2013 compared to 2007	*14*	*1632*	*259*	*1373*	*1294*	*546*	*748*	*2926*

Source: Report 2013 v. 2, ANPCDEFP

The dynamics of HEI staff mobilities is higher than student mobilities, with 213.8% in 2013 compared to 2007, in comparison with the dynamics of student mobility, who only recorded 148.3% growth in 2013 compared to 2007. In the case of the teachers mobilities, the most significant increase was recorded by mobility for training (dynamics of 504.3% in 2013 compared to 2007), which shows the interest of teachers for increasing the level of competence and thus for quality assurance in higher education.

By analysing HEIs participation in the Erasmus Programme, we found that the share of participating universities is over 50% in 2007, reaching 69.9% in 2013, which indicates the international openness of most universities. Similarly, we noticed an increase in the number of students involved in mobilities compared to the total

[59] *Student mobility for studies*
[60] *Student mobility for placements*
[61] *Staff mobility for teaching assignments*
[62] *Staff mobility for training*

number of students, from 0.37% in 2007 to 1.08% in 2013. The share of HEIs staff involved in mobilities compared to all employees in higher education has grown much more clearly than in the case of students. Thus, the share of Erasmus in 2007 was 3.56% and 8.82% in 2013, as shown in Table II. 29.

Table II. 28 *Share of HEIs, students and staff involved in mobilities compared to the total number of HEIs, students and staff from universities*

Academic year	No. of univer-sities in Erasmus	Total no. of univ.	Share of HEIs in Erasmus %	Erasmus total no. of student mobilities	Total no. of students	Share of Erasmus students in total number of students %	Total staff mobilities	Total HEIs stuff	Share of Erasmus staff in total staff %
0	*1*	*2*	*3=1/2*	*4*	*5*	*6=4/5*	*7*	*8*	*9=7/8*
2007/2008	55	106	51.89	3379	907,353	0.37	1137	31,964	3.56
2008/2009	57	106	53.77	3744	891,098	0.42	1263	31,973	3.95
2009/2010	61	108	56.48	3994	775,319	0.52	1642	31,103	5.28
2010/2011	66	108	60.19	4604	673,001	0.68	1750	29,746	5.88
2011/2012	66	108	61.11	4578	539,852	0.85	1982	28,365	6.99
2012/2013	69	107	64.49	5011	464,592	1.08	2431	27,555	8.82
2013/2014	70	103	69.90	…	433,234	…	…	28,211	…

Source: Based on data from the Report 2013, v. 2, and ANPCDEFP and NIS data

Mobilities conducted by universities in Romania have a particular importance to their cultural and academic internationalization, contributing to the personal development of students and teachers. In addition, exchanges within the Erasmus Programme and, from 2014, within Erasmus+, contributed to strengthening cooperation in academia and developing the skills of participants in mobilities, which increased employability of students, as underlined in the Ministerial Communiqué in Bucharest in 2012 (Conference of Ministers in charge with higher education). Moreover, according to the European strategy, it is intended that in 2020 at least 20% of university graduates have participated in an

Table II 29 HEIs involvement in partnerships for innovation and transfer projects

Year	No. of univ.
2007	-
2008	4
2009	1
2010	3
2011	5
2012	3
2013	4
Total	20

Source: Authors

internship of at least 3 months in another country (study or placement), representing more than 15.

HEIs also establish international partnerships for the development of joint projects aimed at improving training processes. In this regard, we can mention projects conducted by universities under the Leonardo da Vinci / Transfer of Innovation. According to ANPCDEFP data, during the implementation of the Leonardo da Vinci / Transfer of Innovation Project 2007-2013, the total number from HEIs involved in transfer of innovation partnerships was 20, with an annual distribution shown in Table II. 30. As shown in the mentioned table, the number of universities involved is below 20% of all universities in Romania, which shows that there are still opportunities for extending partnerships and activities of HEIs in order to improve training processes.

Universities are actively involved in research. In this regard, universities conduct research activities, structured as activities individually implemented by their own staff or research teams, as well as projects conducted in national or international partnership. In this regard, it is noted that, during the implementation of the Sectoral Operational Programme “Increase of Economic Competitiveness” (SOP IEC), Axis 2 - Research, Technological Development and Innovation for Competitiveness, 47 universities were involved in research projects funded through this program, which represents 43.5% of all universities.

2.3.3 Relationship and knowing of the socio-economic environment

Universities are closely tied to socio-economic realities so that students are trained in line with labour market needs. This priority at European level is underlined by Recommendation Rec (2007) 6 of the Committee of Ministers to member states on the public accountability of higher education and research, prepared by the Steering Committee for Higher Education and Research (CDESR) and highlights four essential purposes of higher education:

- preparation for sustainable employment of the labour force;
- preparation for life as active citizens in democratic societies;
- personal development;
- development and maintenance, through study, of learning, research and advanced knowledge.

In the higher education European area, characterized by diversity and autonomy, each institution tries to answer these challenges, having, on one hand the, the common vision brought by Bologna Process, and on the other hand, the dynamics of society inducing new changes, requirements and expectations, the need to adapt to

changing realities in a much shorter timeframe than before. Therefore, the process for encouraging diversity, creativity and innovation of curriculum can be carried out by shifting the focus in education on the individual needs adapted to the requirements of society.

The connection between universities and socio-economic environment is ensured from a multiple perspective, namely by providing assistance to students in career development (partnership ties with entities in the socio-economic environment, assistance structures in career development, alumni organisations, assistance in career after graduation) in view of strengthening partnerships with the socio-economic (joint projects with business environment, the inclusion of representatives from socio-economic environment in senates and coordination structures of university programs) as well as of the involvement of universities and/or their representatives in the structures of general representative democracy (parliament's education committees, national bodies with specific functions related to the academic approach: strategy, quality, finance, research, qualifications).

Despite the progress of the relationship of HEIs with the socio-economic environment, studies and discussions with representatives of employers indicate they are still dissatisfied with the share of practical activities in the curricula and the practical activities of students, but also demonstrate their reluctance to get more students into practice or to allocate more time from employees to support practical learning processes of students. It is encouraging that, in accordance with legislative requirements, the universities involved representatives of the business environment in the activities of higher education institutions, from the committees for curriculum to those for evaluation and quality assurance, which is reflected in many joint activities in the education and research processes. In this regard, the perceptions of differences between the socio-economic actors and the academia may be improved.

The effort of universities to combine the preparation of students with practical experience appropriate to their training field is reflected in practice and internship programs. In this regard, according to data reported by the World Bank at the end of 2014, there were:

- 6161 agreements to conduct internships,
- 6550 subjects of graduation theses required by employers,
- 100 active Alumni association in universities or associations valuing transversal skills in curricula.

Another aspect that should be mentioned in the relationship between universities and the labour market is the increasing efforts of universities to ensure processes of

"*lifelong learning"* or "recognition of formal, non-formal or informal learning". Even if Romania is still one of the lowest ranked among EU countries on the implementation of these processes, there are some results: increasingly more programs for postgraduate training, a law on volunteering with implications over the recognition processes of learning or professional reconversion programs.

In order to have "*competitive universities in the labour market*", universities will need to react more quickly to economic and social changes, to structure their study programs as close as possible to the national and European needs, and for achieving this, it would be very useful for universities to give more importance to the collection and centralisation of data related to the integration of graduates into the labour market, and to the analysis of possible partnerships or workforce needs in various fields.