



The participation of population at education by residence area in Romania

*Participarea populației la educație pe medii
de rezidență în România*

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Abstract

The investment in education is one way in training and development of human capital, which together with investment in physical capital, forms vectors for sectors' modernization of Romanian economy and of the evolution of Romanian society. For the increase of the competitiveness on the global economic market, the Romanian society, in general, and the Romanian economy, in particular, must be modernized through the implementation of investments both in physical capital and human capital. Education can be a significant force for development of Romanian society through: the number of participants, the size and the competence of the training's personnel, the information's and distribution's materials, the providing knowledge and consultancy etc. The formal education with the non - formal education and the informal education can stimulate the economic and the social activities, by area of residence, and may be important factors to reduce the competitiveness's gap of our country compared with EU countries. On this line, we believe that the education and the training, the achievement of the new knowledge, skills and competencies by the occupied population may become important factors of progress for Romania on the European and World market. We believe that, in rural area, the increasing of the population's participation, at all levels of formal education and the population's attending at the courses that allow the acquiring of new knowledge and skills, in the non-formal's and the informal's learning system, is a necessity for the development and the modernization of this area.

Keywords: *secondary and vocational educational; higher educational; pupils/students enrolled per educational institution; graduates per educational institution; teachers per educational institution*

Rezumat

Investiția în educație este o cale de formare și dezvoltare a capitalului uman, care alături de investiția în capitalul fizic, formează vectori ai modernizării sectoarelor de activitate ale economiei românești și ai evoluției societății românești. Pentru creșterea competitivității pe piața economiei mondiale, societatea românească, în general și economia românească, în particular, trebuie modernizate, prin înfăptuirea de investiții, atât în capital fizic, cât și în capital uman. Educația poate reprezenta o forță considerabilă pentru evoluția societății românești prin: numărul de participanți, mărimea personalului de instruire și competența acestuia, materiale de informare și difuzare, furnizarea de cunoștințe și de consultanță etc. Educația formală alături de educația non - formală și

informală pot dinamiza activitățile economice și sociale, pe medii de rezidență și pot reprezenta factori importanți de reducere a decalajelor de competitivitate ale țării noastre față de țările UE. În acest sens, considerăm că, educația, instruirea și dobândirea de noi cunoștințe, abilități și competențe de către populația ocupată, pot deveni factori importanți de progres ai României, pe piața europeană și mondială. Considerăm că, în mediul rural, creșterea participării populației la toate nivelele educaționale de tip formal, precum și la cursuri care permit dobândirea de noi cunoștințe și competențe, în sistemul de învățare non-formal și informal, este o necesitate pentru dezvoltarea și modernizarea acestui mediu de rezidență.

Cuvinte-cheie: *domeniul educațional liceal și profesional; domeniul educațional superior; elevi/studenți înscriși pe instituție de învățământ; absolvenți pe instituție de învățământ; profesori pe instituție de învățământ*

JEL Classification: *Q10, I21, R11*

Introduction

Establishing appropriate measures to stimulate the participation of the population in education requires knowledge of the current state of education in Romania. In the paper, we analyze the participation of the population at the formal education by residence area, urban and rural, and by levels of education total education, high schools and vocational secondary education - ISCED level 3, and tertiary education - ISCED level 5), from 1996 to 2008, using statistical data on the educational system offered by the National Institute of Statistics, (2010).

The participation of the population at education total field

The comparative analysis of the population's participation at formal education by residence area is based on Table 1, with resulting indicators: the school population per unit school, the graduates per unit school and the teachers per unit school, for the period 1996-2008.

The school population per unit of school shows, during 1996-2008, a growth trend higher in urban area compared to the rural area. For the correct assessment of the indicator "population education per unit of school" should be considered the progress (the change of indicators) of school population and units of school during the period analyzed. Thus, although this indicator shows a growth trend (positive development), both school population and the units of school included in the education process have reduced trends on the reported period, by area of residence.

The participation of the population at education total field
(number/unit of school)

Table 1

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
School population per unit of school													
Total	157	160	157	166	186	187	190	248	306	368	512	535	526
Urban	381	376	375	448	479	480	481	510	525	577	671	696	684
Rural	68	71	71	72	83	83	84	122	165	204	333	344	338
Graduates per unit of school													
Total	22	20	22	23	27	27	29	38	50	59	80	95	-
Urban	61	57	61	74	79	78	86	90	101	11	122	148	-
Rural	6	5	6	6	8	8	9	12	17	1	33	33	-
Teachers per unit of school													
Total	11	11	11	12	12	12	16	20	24	33	34	34	34
Urban	25	24	25	29	30	31	30	31	33	35	40	41	40
Rural	5	5	5	5	6	6	6	8	12	15	24	25	25

Source: National Institute of Statistics, (2010); Own calculations based on the data from Annex 1.

Note:

- for the period 1990 - 1995, the statistical data for the school population in primary and secondary education, as well as the school population of the vocational, secondary and foremen education are not available by area of residence;
- for graduates, available data are from 2007 year;
- school population represents all children, pupils and students enrolled in the training and in the education proces at the beginning of year school/university education, in whatever education forms they attend (day, evening, low frequency, long distance) and the age;
- the teaching staff are individuals who are engaged in education system and which teach in the education and training process (full and part-time). Every teacher is recorded only once, only to schools which the teacher has the basic function or teaching the largest number of hours;
- school unit is the administrative unit with legal personality, submitted to the National Classification SIRUES, which has one or more educational levels, with a single management; are considered units of education: the kindergartens, the primary and secondary schools, the high schools, the groups' school (within which are different levels of education), the schools of arts and crafts (professional), foreman, post-secondary, the higher education institutions.

The trend indicator „school population per unit of school” is the result of an accentuated reduction of the units of school compared to the reduction of the school population, both urban and rural area.

As a consequence, the indicator *graduates per unit of school* also records a growth trend both residence area, to the effect of the accentuated reduction of units of school, the graduates recording a slight upward trend in urban area and a slight reduction trend in rural area, during the analyzed period.

The indicator *teachers per unit of school* records during the period under review an upward trend, due to more pronounced reduction of the school's units, compared with the reduction of teachers, by area of residence.

The participation of the population at high schools and vocational education level

The comparative analysis of the population's participation at education - high schools level, by area of residence is based on Table 2 with resulting indicators: pupils enrolled per high school, graduates per high school and teachers per high school, during the period 1996 – 2008.

The participation of the population at education - high school level
ISCED level 3 (number/high school)

Table 2

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Pupils enrolled per high school													
Total	612	585	546	518	503	515	533	543	548	544	550	555	543
Urban	668	637	599	570	554	567	586	596	600	595	590	593	578
Rural	278	276	236	218	212	222	237	247	257	260	271	271	286
Graduates per high school													
Total	141	140	139	130	118	107	125	123	126	131	132	153	-
Urban	154	153	152	143	130	118	138	136	138	145	142	164	-
Rural	61	62	61	55	51	43	50	53	57	55	65	73	-
Teachers per high school													
Total	50	49	50	50	47	47	44	42	44	44	44	43	42
Urban	54	53	55	55	51	52	48	46	48	48	47	46	45
Rural	23	23	23	24	21	20	19	19	20	21	20	20	20

Source: National Institute of Statistics, (2010); Own calculations based on the data from Annex 2.

Note:

- for graduates, the available data are from 2007 year
- school population represents all pupils enrolled in the training and the education process at the beginning of the year school education;
- the teaching staff are individuals who are engaged in education system and who teach in the education and the training process (full and part-time);
- the units of education are considered the high schools.

The data from the above table reveal the following:

➤ The indicator *pupils enrolled per high school* registers, in urban area, a trend of reduction on the base of the high school units rising by 15% and because of to a slight reduction in the number of pupils enrolled by 0.7%, while in the rural

area, the indicator records an upward trend with 2.6%, on the base of reduction with 8% in high schools units and with 6% in the number of pupils enrolled;

➤ At the level of indicator *graduates per high school*, we observe an evolving trend in both the urban and the rural area. Thus, if in urban area, the growth trend of the indicator with 6% occurs on the positive evolutions, like the increase of high school graduates with 14.8% and of the graduates with 20%, in rural area, the indicator shows a trend growth with 19.6%, on the base of reduction in the number of high schools with 8.1% and of the increase of the number of graduates with 9%;

➤ Also, the indicator *teachers per high school* shows a trend of reduction; this trend is higher in rural area compared with the urban area, on the background of the reduction in the number of high schools and the teachers. The higher reduction of this indicator, in rural area, can be explained through the reduction with 20% of teachers, compared to only 5%, as represents the reduction of this indicator in urban area; the reducing the number of units is greater in urban area (-17%) compared with the one from the rural area (-12.5%).

We analyze the participation of the pupils at vocational education level, by area of residence, on the base of Table 3 with resulting indicators: pupils enrolled per vocational schools, graduates per vocational schools and teachers per vocational schools, during the period 1996 – 2008.

**The participation of the population at education - vocational education level
ISCED level 3 (number/vocational school)**

Table 3

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Pupils enrolled per vocational school													
Total	329	311	284	2291	2576	2835	3179	3533	3760	3160	2177	1499	1287
Urban	331	314	288	2728	2893	3218	3916	4124	4321	3887	4397	3156	2849
Rural	317	295	268	1214	1611	1736	1595	2096	2442	1707	643	419	354
Graduates per vocational school													
Total	113	103	98	725	846	764	980	984	1985	1669	1164	769	-
Urban	109	102	97	843	917	841	1168	1134	2342	2091	2377	1642	-
Rural	130	108	106	435	631	542	576	621	1149	824	325	201	-
Teachers per vocational school													
Total	10	10	8	40	53	63	71	73	82	69	49	40	35
Urban	9	10	8	44	56	65	81	79	88	78	83	66	56
Rural	11	10	9	29	41	55	51	59	66	52	26	24	22

Source: National Institute of Statistics, (2010); Own calculations based on the data from Annex 3.

Note:

- for graduates, the available data are from 2007

The analysis of the indicators, during the period 1996 – 2008, shows the positive evolutions only apparently for the education process – vocational level (ISCED level 3) by residence area, according to the data presented in the table above, as follows:

➤ The indicator pupils enrolled per vocational school registers a growth trend, in the urban area, due to the reduction of the vocational units with 91.9% and because of the reduction of the number of pupils enrolled with 30%; in rural area, the indicator records an upward trend with 12% on the background of the reduction of the vocational schools with 23% and of the number of pupils enrolled with 14%.

➤ The indicator graduates per vocational schools is much higher at the end of analyzed period than the level of this indicator registered in 1996 year, by residence area. Both in urban area and in rural area, the evolution of the mentioned indicator, in the period considered, is because of the pronounced reduction of vocational education units, compared with the reduction of graduates.

➤ The indicator teachers per vocational schools records an upward trend which is higher in urban area, than the level of this indicator recorded in rural area.

The participation of the population at tertiary education level

We analyze the participation of the students at tertiary education level, by area of residence, on the base of Table 4, the following indicators: students enrolled per tertiary education institution, graduates per tertiary education institution and teachers per tertiary education institution.

**The participation of the population at education - tertiary education level
ISCED level 5 (number/tertiary institution)**

Table 4

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Students enrolled per tertiary education institution													
Total	3475	3402	3673	3741	4231	4621	4770	5088	5558	6696	7553	8560	8407
Urban	3475	3402	3673	3741	4231	4620	4770	5087	5557	6694	7551	8637	8482
Rural	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	511	439
Graduates per tertiary education institution													
Total	794	640	573	561	605	742	827	906	927	1049	1207	2197	-
Urban	794	640	573	561	605	742	827	906	927	1049	1206	2216	-
Rural	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195,0	-
Teachers per tertiary education institution													
Total	230	230	234	223	222	228	237	247	264	295	294	302	302
Urban	230	230	234	223	222	228	237	247	264	295	294	304	304
Rural	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	20

Source: National Institute of Statistics, (2010); Own calculations based on the data from Annex 4

Note:

- For graduates, the available data are from 2007
- data not available

Analysis of the indicators from the above table reveals the following:

- The indicator students enrolled per tertiary education institutions registers, in urban area, an upward trend on the basis of a sensitive growth of tertiary education institutions and on the basis of a positive evolution of students enrolled during the period under review. In rural area, in 2007 year and in 2008 year, there is a one tertiary education institution, in conditions in which the students enrolled at this level of education were 24 in 2000 year, this indicator recording 439 in 2008 year.
- The indicator graduates per tertiary education institutions registers in urban area an upward trend on the basis of positive evolutions, namely due to the increasing of the tertiary education institutions and, especially, due to the changes in the number of graduates; in the rural area, the graduates register an evolution from 28 in 2003 year to 195 in 2007 year, in conditions in which, it was a single tertiary education institution in rural area, since 2007 year.
- The indicator teachers per tertiary education institutions registers a growth trend, higher in urban area than that recorded in rural area. This evolution is based on the increase of the evolution of teachers, which is more accentuated compared with the evolution of tertiary education institution, in urban area; in rural area, there are no changes of this indicator, both the institutions and the teachers unknowing changes in 2008 compared to 2007.

Conclusions

The analysis which is presented above shows that there are important differences in terms of the participation of the population at education: total education, high schools and vocational secondary education - ISCED level 3, and tertiary education - ISCED level 5, by area of residence.

At high schools education level, ISCED level 3, the participation of the population at education expressed by the indicator „pupils enrolled per high school institution” presents a decreasing tendency in urban area and an increasing tendency in rural area; whether in urban area, the reduction tendency of the indicator is based on the increase tendency of high schools and also, on the slight reduction tendency of pupils, in rural area, the upward trend of the indicator is explained by the higher level of the reduction of the school units compared to that of the pupils.

At vocational educational level, ISCED level 3, the analysis of participation of population at education expressed by the indicator “pupils enrolled per vocational schools” shows an evolution trend. The trend of this indicator is explained, because of some negative evolutions: the accentuate reduction of vocational schools compared with the reduction of the tendency of pupils enrolled, in both urban and rural.

We note a better participation of the population at tertiary education level, ISCED level 5, in urban area. In the rural area, the participation of the population at this educational level is sensitive. In this statement, we consider that, in the rural

area, in 2007 year, there is only one university and the number of students enrolled increased from 24 in 2000 year to 439 in 2008 year.

We appreciate that, in the rural area, compared with the urban area, the main causes of the low level of the population's participation at tertiary education level are: the smaller number of universities in rural area, the less ability of the labor market to absorb the skilled persons and therefore the higher risk of unemployment for the graduates of this level of education.

Given, on the one hand, the participation of the population in education in rural area, and on the other hand, the need to acquire new skills and competencies for the workforce, for the sustainable development of Romanian's economy and society, we consider the increasing of the participation of population at education in rural area as a necessity.

In rural area, the development of infrastructure, the attracting of qualified personnel, the development of business, to absorb the skilled workforce can be vectors in increasing the participation of population in educational field and in the development of the human capital (Huffman, 1999).

The above conclusions allow the evidence of the disparities between urban and rural area in terms of population's participation at education and the need for the adopting of some measures to stimulate the participation of the population to education in the rural area.

In this regard, we note the following:

- The activation of the measures from the "National Program of Rural Development (NPRD), which target the training, the information and the knowledge dissemination, the providing of advice and consultancy services for farmers: the measure 111 "Vocational training (training), information and diffusion of knowledge" and the measure 143 "Providing advisory and consultancy services for farmers, which are components of the Axis 1 "Improving competitiveness of agriculture and forestry" (Ministry of Agriculture and Rural Development, 2007);
- The dynamic of the concrete actions from the Sectorial Operational Programme Human Resources Development (SOP HRD) 2007 - 2013, which target: the development of new professions and professional standards, the promoting of entrepreneurial culture, the promoting of continuous professional training, the promoting of active employment measures, the combat of hidden unemployment (Ministry of Labor, family and Social Protection, 2007).

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Annex 1

**Units of school, school population, graduates and teachers
by area of residence (rural and urban)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
number													
Units of school													
Total	29815	29084	29409	27633	24481	24304	23679	18012	14396	11865	8484	8230	8221
Urban	8478	8470	8375	6877	6422	6401	6295	5877	5652	5194	4501	4476	4473
Rural	21337	20614	21034	20756	18059	17903	17384	12135	8744	6671	3983	3754	3748
School population													
Total	4688311	4643351	4631164	4578383	4565279	4554466	4496786	4472493	4403880	4360831	4345581	4404581	4324992
Urban	3232547	3180618	3141411	3081242	3073002	3070166	3028701	2995017	2965334	2997101	3018940	3113491	3059267
Rural	1455764	1462733	1489753	1497141	1492277	1484300	1468085	1477476	1438546	1363730	1326641	1291090	1265725
Graduates*													
Total	646165	595611	635361	635189	651169	648389	693168	680079	722635	695427	679071	784958	-
Urban	521006	485009	508062	505504	507180	500482	540634	530800	570773	55410	548354	660726	-
Rural	125159	110602	127299	129685	143989	147907	152534	149279	151862	5660	130717	124232	-
Teachers													
Total	313255	309306	311570	301416	294938	300108	286670	281272	285861	281034	277318	276849	275426
Urban	208511	206927	207090	197569	192639	195711	186768	180847	183916	183261	181929	182850	180856
Rural	104744	102258	104480	103847	102299	104397	99902	100425	101945	97773	95389	93999	94570

Source: National Institute of Statistics, (2010)

* for graduates, available data are from 2007 year

Annex 2

**High schools, pupils enrolled, graduates and teachers,
by area of residence (rural and urban)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
number													
High Schools													
Total	1295	1309	1315	1340	1367	1379	1388	1397	1413	1410	1421	1426	1444
Urban	1110	1121	1123	1142	1165	1174	1180	1186	1198	1198	1242	1257	1274
Rural	185	188	192	198	202	205	208	211	215	212	179	169	170
Pupils enrolled													
Total	792788	765903	718017	694376	687919	710663	740404	758917	773843	767439	780925	791348	784361
Urban	741290	714034	672769	651251	645193	665075	691195	706759	718621	712339	732328	745619	735786
Rural	51498	51869	45248	43125	42726	45588	49209	52158	55222	55100	48597	45729	48575
Graduates*													
Total	182643	183570	182783	174060	161106	147650	173584	172371	177576	185255	187576	218205	-
Urban	171352	171835	171049	163096	150901	138835	163225	161267	165395	173535	175947	205873	-
Rural	11291	11735	11734	10964	10205	8815	10359	11104	12181	11720	11629	12332	-
Teachers													
Total	64485	63669	66101	67239	64018	64729	60988	58925	62192	61914	62048	61620	60647
Urban	60155	59271	61612	62542	59863	60562	57083	54999	57807	57410	58543	58287	57167
Rural	4330	4398	4489	4697	4155	4167	3905	3926	4385	4504	3505	3333	3480

Source: National Institute of Statistics, (2010)

* for graduates, available data are from 2007 year

Annex 3

**Vocational schools, pupils enrolled, graduates and teachers,
by area of residence (rural and urban)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
number													
Vocational schools													
Total	796	795	800	97	93	89	85	79	77	90	115	147	147
Urban	676	676	673	69	70	66	58	56	54	60	47	58	55
Rural	120	119	127	28	23	23	27	23	23	30	68	89	92
Pupils enrolled													
Total	262057	247239	227585	222234	239550	252347	270215	279124	289494	284412	250383	220335	189254
Urban	224010	212120	193542	188241	202505	212415	227151	230918	233335	233204	206678	183068	156683
Rural	38047	35119	34043	33993	37045	39932	43064	48206	56159	51208	43705	37267	32571
Graduates													
Total	89557	81878	78375	70312	78669	67993	83294	77762	152875	150187	133829	113084	-
Urban	74010	69003	64955	58145	64158	55523	67730	63486	126441	125468	111705	95210	-
Rural	15547	12875	13420	12167	14511	12470	15564	14276	26434	24719	22124	17874	-
Teachers													
Total	7627	7820	6794	3845	4894	5576	6063	5782	6290	6234	5643	5939	5129
Urban	6271	6622	5600	3030	3943	4307	4682	4425	4761	4662	3889	3838	3090
Rural	1356	1198	1194	815	951	1269	1381	1357	1529	1572	1754	2101	2039

Source: National Institute of Statistics, (2010)

* for graduates, available data are from 2007 year

Annex 4

**Tertiary education institutions, enrolled students, graduates and teachers,
by area of residence (rural and urban)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
number													
Schools of higher education													
Total	102	106	111	121	126	126	125	122	117	107	104	106	106
Urban	102	106	111	121	126	126	125	122	117	107	104	105	105
Rural	:	:	:	:	:	:	:	:	:	:	:	1	1
Enrolled students													
Total	354488	360590	407720	452621	533152	582221	596297	620785	650335	716464	785506	907353	891098
Urban	354488	360590	407720	452621	533128	582168	596205	620664	650169	716275	785307	906842	890659
Rural	:	:	:	:	24	53	92	121	166	189	199	511	439
Graduates*													
Total	80991	67799	63622	67940	76230	93467	103402	110533	108475	112244	125499	232885	-
Urban	80991	67799	63622	67940	76230	93467	103402	110505	108443	112191	125447	232690	-
Rural	:	:	:	:	:	:	:	28	32	53	52	195	-
Teachers													
Total	23477	24427	26013	26977	27959	28674	29619	30137	30857	31543	30583	31964	31973
Urban	23477	24427	26013	26977	27959	28674	29619	30137	30857	31543	30583	31944	31953
Rural	:	:	:	:	:	:	:	:	:	:	:	20	20

Source: National Institute of Statistics, (2010)

- for graduates, available data are from 2007 year
- : missing data