

## FINANCING PRE-UNIVERSITY EDUCATION. STUDY ON THE BASIS OF COST PER PUPIL/PRESCHOOLER - CASE STUDY

Irina Maria ALEXANDRU<sup>1</sup>, Gheorghe MATEI<sup>2</sup>

<sup>1</sup>University of Craiova, Romania, [irinalex2003@yahoo.com](mailto:irinalex2003@yahoo.com)

<sup>2</sup>University of Craiova, Romania, [ghematei@yahoo.com](mailto:ghematei@yahoo.com)

**Abstract:** *The study analyzes the expenses for education in Romania compared to other EU countries, providing useful reference points to improve the financial management, providing also a punctual analysis of the evolution of the budget proper to the pre-university educational institutions. We will compare the assigned amount based on the cost per pupil/preschooler and the requirements resulting from the budgetary implementation data. At the same time, the study generates a series of challenges concerning the financial management that the educational institution experienced during this period, offering solutions for carrying out an activity under normal conditions*

**Keywords:** Financial management, Public institution, Budget, Budget system, Cost.

**JEL Classification Codes:** H52, H75, I22, I25.

### 1. INTRODUCTION

International research has clearly shown that stimulating human capital is essential to economic growth. Investment in education is also being pursued to reduce disparities between employment and earnings, most of which are due to social or ethnic origin.

Funding education is one of the most complex challenges governments face in most countries. Firstly, they have to prioritize the largest budget allocation for education, health and social protection. In the case of economic crises, when the budget deficit has to be maintained within certain limits, the budget for education suffers significant variations from one year to the next. These variations lead to the suspension, postponement or even discontinuation of the steps taken to a point, long-term objectives that are no longer finalized or finalized so late that they become unnecessary or morally exploited.

These discontinuities in the achievement of the proposed objectives affect the education system to the lowest level, not allowing even the smallest institutions with legal personality to complete the objectives proposed in the Institutional Development Plan during the four years.

Over the past five years, we have witnessed the "correction" of defects through "structural adjustments" applied to budgets for education, health and social protection. These funding variations often lead to significant losses as a result of the financial inability to support public policies aimed to ensure school enrollment or the retention of children and young people, given that investment in the retention of a young person in school is much less than the re-enrollment of that person.



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## 2. POSITIONING ROMANIA AMONG THE COUNTRIES OF THE EUROPEAN UNION IN TERMS OF EDUCATION EXPENDITURES

According to the latest OECD Study on Assessment and Examination in Education Romania 2017, "Romania's public spending on primary and secondary education is the smallest in the European Union (EU), both in relative terms and in absolute terms.

In 2013, Romania had the lowest level of education spending as a percentage of total public spending (7%) compared to the EU average of 11%. In Romania, the average level of student expenditure, calculated on the basis of the SPC, is EUR 1,535 in primary education and EUR 1,897 in the lower secondary, ie below one third of the EU average of public expenditure for a pupil in primary or lower secondary education. Bulgaria spends 60% more on pupil in lower secondary education than Romania (EUROSTAT 2016)

As can be seen in table no. 1, Romania ranks 17th out of 28 countries on public spending on education in current prices after the latest update of EUROSTAT.

**Table 1. Public expenditure on education at current prices, by level of education and program orientation**

Position	GEO/TIME	2012	2013	2014
1	Germany (until 1990 former territory of the FRG)	129,076.4	131,537.2	135,392.6
2	United Kingdom	115,951.2	117,228.9	127,666.6
3	France	113,973.9	116,451.4	118,496.4
4	Italy	:	66,827.1	66,093.6
5	Spain	44,690.0	42,913.4	43,010.6
6	Netherlands	35,326.9	36,500.7	36,659.7
7	Sweden	30,107.9	31,259.5	30,893.4
8	Switzerland	25,724.4	25,664.5	26,549.2
9	Belgium	24,931.9	25,692.6	26,031.6
10	Norway	:	25,384.1	25,241.1
11	Poland	18,736.1	19,500.3	20,190.2
12	Austria	17,242.8	17,709.9	17,836.4
13	Finland	13,695.9	13,856.1	13,990.9
14	Ireland	10,105.9	9,584.2	9,509.8
15	Portugal	:	8,848.3	8,714.8
16	Czech Republic	6,615.6	6,225.1	6,008.2
17	<b>Romania</b>	<b>3,476.4</b>	<b>3,846.5</b>	<b>4,137.3</b>
18	Slovakia	2,169.2	2,972.1	3,105.8
19	Luxembourg	1,884.9	:	1,996.9
20	Slovenia	1,922.3	1,840.4	1,861.4
21	Bulgaria	1,469.0	1,706.5	1,804.4
22	Lithuania	1,589.7	:	1,597.2
23	Latvia	1,454.6	1,120.8	1,247.7

24	Cyprus	1,181.1	1,166.8	1,122.6
25	Estonia	:	916.0	1,011.2
26	Iceland	765.1	796.6	904.4
27	Malta	467.3	500.5	509.9
<b>Position</b>	<b>GEO/TIME</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
28	Hungary	3,942.4	4,042.1	:

Source EUROSTAT, Last update 02.04.2018 ([https://ec.europa.eu/eurostat/web/products-datasets/product?code=educ\\_uae\\_fine06](https://ec.europa.eu/eurostat/web/products-datasets/product?code=educ_uae_fine06))

In the two following tables (No 2 and No 3) the position of Romania among the European countries will be observed according to the level of public expenditures for education calculated as a percentage of GNI (gross national income) in table no. 2 this being in position 23 with 0.4% in 2014 percentage points out of 34 countries, as there are only 4 countries whose data exist; the level of public spending on education calculated as a percentage of GDP (Gross Domestic Product) in Table no. 3, standing at 28 with 2.64% in 2012, 2.67% in 2013 and 2.75% in 2014 from 35 countries, ranking the last in the list of countries whose data were processed by EUROSTAT.

Table 2 Public expenditures for education by levels of education and program orientation - as% of public expenditure or% of GNI, ISCED11- Early education.					Table 3 Public expenditure on education by level of education and program orientation - as% of GDP, All ISCED levels 2011, excluding early childhood development.				
POSITION	GEO/TIME	2012	2013	2014	POSITION	GEO/TIME	2012	2013	2014
1	Sweden	:	1.8	1.8	1	Sweden	7.38	7.17	7.14
2	Iceland	:	1.5	1.6	2	Iceland	7.24	6.84	6.98
3	Norway	1.4	1.4	1.4	3	Finland	:	:	6.81
4	Bulgaria	0.9	1.1	1.1	4	Norway	:	6.45	6.71
5	Denmark	1.2	1.1	1.1	5	Belgium	6.43	6.56	6.49
6	Estonia	0.5	0.4	1.0	6	Cyprus	6.67	6.44	6.39
7	Slovenia	1.0	1.0	1.0	7	Malta	6.53	6.56	6.04
8	Latvia	1.1	0.8	0.9	8	United Kingdom	:	5.89	5.85
9	Luxembourg	1.0	0.8	0.9	9	France	5.46	5.51	5.54
10	Hungary	:	:	0.8	10	Netherlands	5.89	5.59	5.53
11	Germany (until 1990 former territory of the FRG)	0.6	0.6	0.7	11	Austria	5.62	5.49	5.40
12	France	0.6	0.7	0.7	12	Latvia	6.59	4.91	5.28
13	Czech Republic	0.6	0.6	0.6	13	Estonia	4.82	4.85	5.12

14	Spain	0.7	0.6	0.6	14	EU (current composition)	:	5.09	5.11
15	Lithuania	0.7	2.2	0.6	15	Portugal	:	5.20	5.04
16	Malta	0.5	0.5	0.6	16	Switzerland	5.24	:	5.01
17	Austria	0.5	0.6	0.6	17	Slovenia	5.44	5.12	4.99
18	Poland	0.6	0.6	0.6	18	Ireland	6.16	5.32	4.92
19	Italy	0.4	0.5	0.5	19	Poland	4.91	4.94	4.91
20	Slovakia	0.4	0.5	0.5	20	Germany (until 1990 former territory of the FRG)	4.68	4.65	4.63
21	Netherlands	0.4	0.4	0.4	21	Lithuania	4.83	:	4.37
22	Portugal	0.4	0.4	0.4	22	Bulgaria	3.68	4.06	4.22
23	<b>Romania</b>	:	:	<b>0.4</b>	23	Spain	4.34	4.18	4.15
<b>POSITION</b>	<b>GEO/TIME</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>POSITION</b>	<b>GEO/TIME</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
24	United Kingdom	0.4	0.3	0.2	24	Slovakia	3.05	4.01	4.09
25	Switzerland	0.2	0.2	0.2	25	Italy	:	4.16	4.08
26	Turkey	:	0.2	0.2	26	Luxembourg	4.39	:	4.00
27	Ireland	:	:	0.1	27	Czech Republic	4.33	3.95	3.84
28	Cyprus	0.4	0.4	:	<b>28</b>	<b>Romania</b>	<b>2.64</b>	<b>2.67</b>	<b>2.75</b>
29	Finland	1.1	1.2	:	29	Hungary	4.07	3.98	:

Source EUROSTAT, Last update 02.04.2018

([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ\\_uoe\\_fine06&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_fine06&lang=en);  
[https://ec.europa.eu/eurostat/statistics-explained/index.php/Educational\\_expenditure\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Educational_expenditure_statistics))

Analyzing Romania's position according to the level of public expenditures for education per FTE student / student according to the level of education and the orientation of the program we find its position on the position 28 of 29 European countries whose data were processed by EUROSTAT in 2014, Romania spending 927.2 euros for a student / student leaving behind only Serbia which allocates only 110.2 euro per pupil / student.

The country with the highest amount allocated is Norway, which is ranked first throughout the analyzed period (2012-2014) in 2013, reaching € 21,000 per pupil / student.

**Table 4. Public expenditures per student per student based on FTE by level of education and program orientation, ISCED11 - Early education**

POSITION	GEO/TIME	2012	2013	2014
1	Norway	19,813.6	21,141.5	19,467.9
2	Luxembourg	17,222.0	15,015.7	17,525.8
3	Sweden	12,926.6	13,451.4	13,266.5
4	Iceland	8,387.1	8,564.1	10,115.9

5	Denmark	10,030.2	10,152.0	10,079.1
6	Finland	9,464.2	9,872.4	9,897.0
7	Switzerland	6,311.8	5,884.9	7,746.0
8	Austria	6,313.5	6,459.0	6,893.8
9	Germany (until 1990 former territory of the FRG)	5,822.0	6,256.1	6,662.3
10	Netherlands	6,128.1	6,291.2	6,221.4
11	France	5,309.7	5,750.4	5,840.8
12	Ireland	:	:	5,357.9
13	Malta	3,734.3	3,777.3	4,900.2
14	Slovenia	4,318.6	4,163.9	4,433.0
15	Italy	4,268.5	4,343.2	4,081.9
16	United Kingdom	5,725.6	4,641.8	3,996.1
17	Spain	3,472.8	3,386.7	3,426.7
18	Portugal	2,384.8	2,659.0	2,768.5
19	Hungary	:	:	2,674.5
20	Estonia	1,159.8	993.9	2,666.2
21	Latvia	3,130.9	2,375.9	2,606.6
22	Slovakia	2,030.2	2,140.0	2,355.2
23	Czech Republic	2,369.9	2,361.8	2,316.1
24	Poland	1,762.9	1,785.0	2,027.6
25	Lithuania	1,908.4	1,898.5	1,904.6
<b>POSITION</b>	<b>GEO/TIME</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
26	Bulgaria	1,551.2	1,825.6	1,868.3
27	Turkey	1,368.2	1,323.5	1,198.4
28	Romania	:	:	927.2
29	Serbia	:	105.4	110.2

Source EUROSTAT, Last update 02.04.2018

([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ\\_uae\\_fine09&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uae_fine09&lang=en))

It is not surprising that Romania has the lowest investment in education in the EU. Even if the education budget has increased in recent years to reach the pre-crisis level of 2008-2010, the country spends only 4.1% of GDP in this sector. This investment does not all benefit equally. Since 2005, in the education sector, budget allocations have increased for secondary and tertiary education and decreased for pre-primary and primary education. As a result, wealthy people benefit far more from educational spending than the poor.

Romania has tested for almost 10 years pilot programs and projects in pre-university education by applying historical cost-based financing mechanisms that have proved to be insufficient to determine some formulas to roughly set the required funds.

After this period, since 2009, official application has been made to the application of cost standards in order to increase transparency, predictability of the system and equity in the allocation of resources starting with the determination of the need for wage costs and related benefits only later by approving the new (Government Decision no. 1274/2012 and 72/2013) covering all the expenditures necessary for the institution by calculating the budget on the basis of the per capita cost (salary and non-salary costs). "While in the past school budgets were mainly calculated according to the number of employees per state of payment, the new funding model provides schools with a lump sum and should principally give the headmaster the opportunity to allocate funds according to the needs of the unit "(World Bank, Romania Functional analysis of the pre-university education sector, Second Report, Final Report, Vol. I, 2011).

Thus, the budget of the pre-university education units is established on the basis of the number of pupils / preschoolers enrolled at the date of its constitution multiplied by the value of the standard cost established annually at national level and approved by government decision corrected with a series of specific coefficients for the school unit (geographical position, the type of institution, the number of pupils in a class) being determined for each level, specialization / domain, profile, and basic funding being distributed at the local level (either by the municipality, city, municipality) in collaboration with county school inspectorates.

The education system is heavily dependent on public funds, as the global private contribution to education (including household and other contributions) was only 0.12% of GDP in 2010, according to Eurostat, compared to 0.82% in the EU.

In this context, both ongoing and prospective public policies aimed at better educating the education system for future challenges are in vain. Any new educational project, either to improve curricula, to develop human resources or to digitize the education system, requires funding. The lack of such funding leads to the postponement of these projects. Therefore, with each passing year, under-funded education systems are becoming more and more exposed.

In other terms, it is about the quality of investment in education. The existence of stable and sufficient sources of funding does not always guarantee performance in education, especially when it comes to the whole system. Research by some Romanian authors such as Dogaru I. and Mântăluță O. or foreigners such as Foster M., Fozzard A., Robinson M. show that almost every educational system faces funding gaps (the differences in the economic development of the communities reflected in the level of financing for education, grant formula that favors performance at the expense of access and equity, the funding of certain levels of study to the detriment of others – for example high school or higher education at the expense of preschool, primary or vocational education, etc.), generating systemic problems that are difficult to approached and corrected in the short term.

The two basic aspects mentioned above relate to the system's ability to identify and manage resources. To these, a third problem is added: the coherence of the correlation between educational policies and other public policies. Investments in a particular education sector would not benefit every individual who underwent a particular education program or society if there is no logical coherence between public policies. Thus, between 2007 and 2013, Romania received significant EU funding for human resource development. Despite considerable investment in training advanced research specialists due to the economic crisis of 2009-2011, the government had to freeze the employment of these trained specialists in the public sector (universities, hospitals, research institutes, etc.).

This has led to the loss of specialized human resources either by relocating these specialists to other countries or by hiring them in the private sector, not in their specific area of competence.

For this reason, the problem of financing in education is not just a sectorial problem, but one that concerns the development capacity of a country. In order for this phenomenon to be understood, there is a need for tradition and culture in the financing of education.

It is about evaluating education as the most important sector of investment, a sector that could multiply ten times the initial capital when it comes to a medium and long-term strategic approach.

OECD and World Bank studies in recent years show that another year of school increases earnings by 8-9% and reduces the probability of health problems by 8%. Generally, the more educated we have, the higher the income. So by going to school, people benefit more individually.

The figures are even more striking in the country, and this is the main message of this study: by keeping its investment in education so low, Romania will lose between 12 and 17 billion euros between 2015 and 2025. In other words: if Romania have been to gradually increase investment in education from 4.1% to 6% of GDP, economic growth would increase from 2% to 2.7-2.95%. This would represent a gain of € 12 to € 17 billion over the next ten years.

### **3. ANALYSIS OF THE RATIO BETWEEN THE BUDGET NEEDS AND THE ALLOCATION ACCORDING TO THE STANDARD COST PER PUPIL / PRESCHOOL**

"The standard cost level is a benchmark for guiding each education unit to substantiate the need for funds, being a good benchmark against the real costs of a school and the level of historical cost of the same school" (Dogaru et al., P. 7, 2005).

In order to be able to make a meaningful analysis of budget needs compared to the standard cost allocation per pupil / preschooler, we centralized the data of a pre-university education institution over a 10-year period (2008-2017) in Table 5 with the data on the implementation of the wage bill in relation to the needs calculated according to the number of children enrolled annually according to which the salary incomes are calculated.

In the first two years of "piloting" this way of financing pre-university education institutions, the calculated funds covered only personnel costs. Subsequently, as of January 2011, the new Education Law (No. 1/2011) introduced the financing of the units based on the standard cost by which "the basic financing of a school unit results from the multiplication of the standard cost per pupil / preschool with unit-specific coefficients school and the number of pupils and is approved annually by Government Decision "(Article 104 (3) of Law No. 1/2011).

Thus, starting with this date, the National Council for Pre-university Education Financing establishes the basis for calculating the budgets allocated to the education units through local administrations for basic funding based on the standard cost per pupil / preschool. It is defined for each level of education, branch, profile, specialization / domain according to methodological norms elaborated by the Ministry of National Education approved by Government Decision.

By Government Decision no. 1274/2011 on the calculation methodology for determining the standard cost per pupil / preschooler have been established the values of this cost according to some indicators for 2012 having as reference value an amount that is updated annually for the cost standard on salaries, allowances and other monetary wages established by law and related contributions.

**Table 5 Evolution of the income and expenditure budget at a preschool education institution in the urban area**

ARTICLE TITLE	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Standard cost of wages	0	0	3,474	2,712	2,712	2,943	3,031	3,065	3,700	4,548
Standard cost of professional training and goods and services	0	0	0	0	283	323	328	335	344	354
Number of existing children	162	160	184	184	180	186	186	209	207	194
Number of copies needed to cover salary costs	0	0	186	239	243	256	324	321	298	290
Number of existing groups	5	5	5	6	7	8	8	8	8	8
Number of copies per group	0	0	37	40	35	32	41	40	37	36
BUDGET salary costs according to the number of children and standard cost (thousand lei)	0	0	639	499	488	547	564	641	766	882
TITLE I STAFF EXPENDITURE (Excerpt from budget execution) (thousand lei)	490	548	560	560	521	646	844	870	955	1167
ARTICLE TITLE	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BUDGET professional training and goods and services at standard cost (thousand lei)	0	0	0	0	51	60	61	70	71	69
TITLE II GOODS AND SERVICES (extraction from budget execution) (thousand lei)	113	109	87	87	137	107	139	113	147	152
TOTAL BUDGET at standard cost (thousand lei)	0	0	639	499	539	607	625	711	837	951
TOTAL BUDGET (extraction from budget execution) (thousand lei)	603	657	647	647	658	753	983	983	1102	1319

*Source: Author's own processing based on the financial statements of a preschool education institution from 2008-2017*

Also, this year (2012) has also set an amount for the cost standard for lifelong learning and staff appraisal costs, regular internal student expenses, material and service costs, and current maintenance costs, which in the first two years did not exist. In table 5 on rows 1 and 2 respectively, the annual costs for each category of budget expenditures of the educational institution under review are reported.



Figure 1 also shows the evolution of this cost over the period 2008-2017.



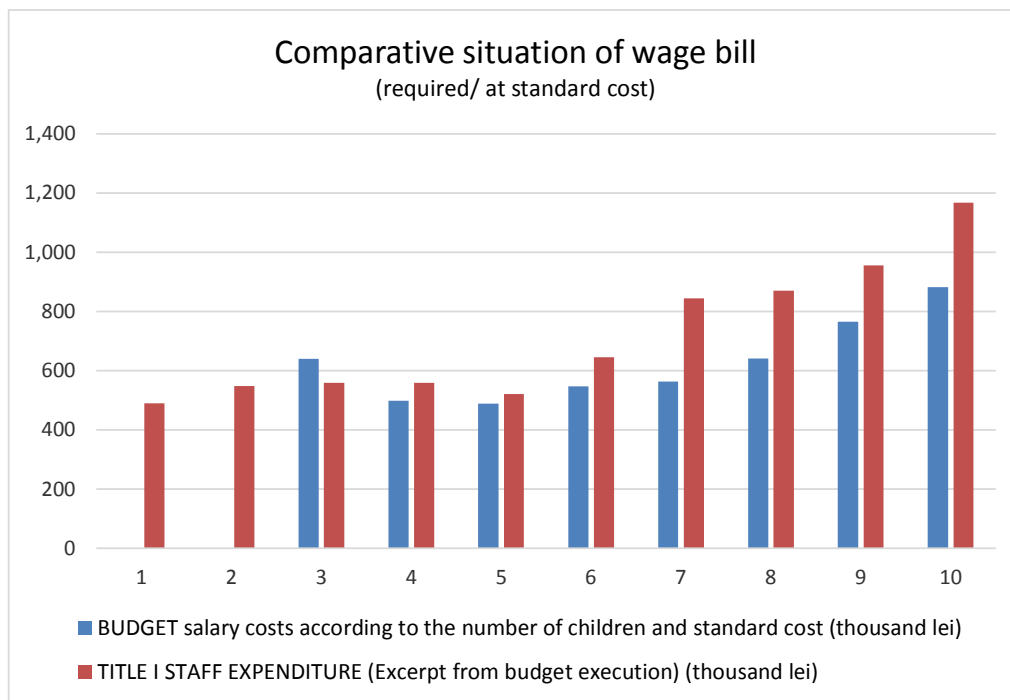
**Figure 1 The evolution of the standard cost over the period 2008-2017 according to the Government Decision of each year**

*Source: Author's own processing based on the financial statements of a preschool education institution from 2008-2017*

Currently, the General Directorates of Public Finance, receiving technical assistance from county school inspectorates, allocates the basic funding they approve annually according to the legal regulations in force through the law of the state budget, to communes, towns and municipalities.

On the other hand, until 2017, the last reference year, for units that did not fit in these funds calculated according to the number of preschool and pupils and the costs determined according to the governmental decision, the Ministry of Education issued a second decision secures the necessary funds for financing, giving the territorial administration the possibility to redistribute the sums between the localities in the same county, especially in rural areas where the number of pupils / preschoolers is lower without exceeding the sums allocated at the county level.

In figure 2 the evolution of the two budgets (required and allocated) over the 10 analyzed years is observed. The necessary budget has been set according to the required salary for the staff assigned to this period according to the approved yearly function status and its structure which varies from unit to unit and from year to year to the same unit according to several variables, the most important being the methodology of personnel movement and the remuneration of staff paid from public funds.



**Figure 2 Comparative situation of wage costs (required / at standard cost) during 2008-2017**

*Source: Author's own processing based on the financial statements of a preschool education institution from 2008-2017*

The budget calculated at the standard cost for each year is calculated by multiplying the number of children enrolled in that year with some inconsistencies due to the fact that the financial year does not correspond to the school year starting in September this year and ends in August inclusive of the next financial year and the fluctuation of children can be substantial from one year to another.

Thus, in January - August, the number of pupils and the corresponding budget are set in September the previous financial year and from September to December this year these figures relate to the number of students enrolled in September this year as another school year starts. However, there can be a permanent negative difference between the two budget categories that tend to grow as we approach the end of the analyzed period.

A larger difference is found in Figure 3 when analyzing the expenses and amounts required for the "goods and services" chapter.

Here the situation is very particular because these costs differ from one unit to another depending on the surface of the building, the layout and layout of the premises, the heating mode and the connection to the utilities, the degree of degradation of the building, etc.



**Figure 3 Comparative cost of goods and services (required / at standard cost) over 2008-2017**

*Source: Author's own processing based on the financial statements of a preschool education institution from 2008-2017*

#### 4. CONCLUSION

The purpose of the study is to highlight the consequences of the low cost per pupil for the activity and performances of pre-university education institutions located in different demographic areas of Romania.

A direct consequence is the coverage of budget differences through the efforts of local budgets. The fact that only the strictly necessary for the budget chapter "assets and services" is ensured has a negative impact on the objectives proposed in the institutional development plans, which tend to be realized at the limit, partially or unrealized.

Another consequence is that in school units located in remote areas where the school population is declining, social and chances for these children are created. We can also speak of a decrease in the quality of the didactic act determined by the tendency to increase the number of pupils / preschoolers at the level of school institution and, implicitly, the average per class exceeding the number established by Law no. 1/2011 (note this in Table 3.1 rows 5 and 6). An inequity is also made in terms of the efforts of teachers who are engaged in units located in areas with urban and urban overcrowded areas.

This is due to the impossibility of managing the institution concerned, which, although having a budget surplus, cannot use those sums to reward the additional efforts made by the teachers, and those sums are then redistributed to deficient areas.

Due to the insufficient budget allocations determined by the number and dispersion of pupils in the territory, but also by the allocation of a small percentage of the Gross Domestic Product (GDP) to the Education ministerial, we assist to a growing need to postpone or even

interrupt the measures taken by the institutions to ensure minimum hygiene and safety conditions for daily activity, to the failure to complete long term goals that become useless or out of date.

However, we can conclude on the other hand that this financing mechanism has also had a positive effect in certain situations, calling into question the necessity to make efforts to fit in the allocated budget by saving certain categories of expenditures and a more careful analysis of the opportunity of spending the money for some goods or services, which has led to the creation of a strong incentive to rationalize or streamline the way resources are spent.

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