

QUANTITATIVE AND QUALITATIVE ASPECTS OF TERTIARY EDUCATION IN THE EUROPEAN UNION MEMBER STATES

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Abstract

The article forwards a review of the quantitative aspects regarding the number of enrolled students and of the dropout rate, as well as of the qualitative aspects regarding the study structure and the employment rate for the higher education graduates. The correlation between the youth unemployment rate and the level of education as well as the state funding of tertiary education is highlighted, all these aspects being correlated with the objectives of the Europe 2020 Strategy, in a comparative approach of the official statistics on the level the European Union member states and Romania.

Keywords: school abandonment, unemployment, employability, funding, entrepreneurial education.

JEL: I23, J24, J62

1. INTRODUCTION

Developed countries have installed many policy measures over the past decades based on the assumption that higher business ownership rates induce economic value creation. Indeed, evidence has been collected of a positive relationship between business ownership rates and economic value creation (Parker, 2009; Van Praag and Versloot, 2007)

At the macro level, a higher participation rate in tertiary education translates into relatively more individuals with higher ability levels, i.e., in a fatter right-hand side tail of the ability distribution. (Van Praag & Van Stel, 2012).

Education is a good whose acquisition entails charges that go beyond the price of the good itself, and which include (Aghion & Cohen, 2004):

- specific expenses related to its acquisition (transportation costs to go to the place where it is offered and, possibly, to live there, purchase of paper, books and other "teaching aids" ...);
- time expenditure: time cannot be allocated to other alternative uses and in particular to "making a living" (Eicher, 2001).

In today's society, entrepreneurship directly contributes to the growth and personal development of citizens by providing them with many opportunities and chances, and it also represents the essential element of economic development, innovation and sustainability, with entrepreneurs and SMEs being the main actors in this context, especially due to their activity in the tertiary and the quaternary sector, based on knowledge.

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The Strategic European Cooperation Framework for Education and Training, which is part of the Europe 2020 Strategy, supports the whole community to resolve common disputes at European level and to encourage the exchange of good educational and entrepreneurial practices between member countries. In this respect, four targets have been set for 2020, one of which is to "stimulate creativity and innovation, including entrepreneurship, on all levels of education and training".

The objective mostly aims at the economic training provided by tertiary education, because this level is considered extremely important in a society as it stimulates innovation and creativity and economic development respectively, which leads to the increase of the living conditions of citizens in general. This can be statistically analyzed from the data on investments and reforms in the field of education and training, the number of students, the early school dropout, the graduation from tertiary education etc.

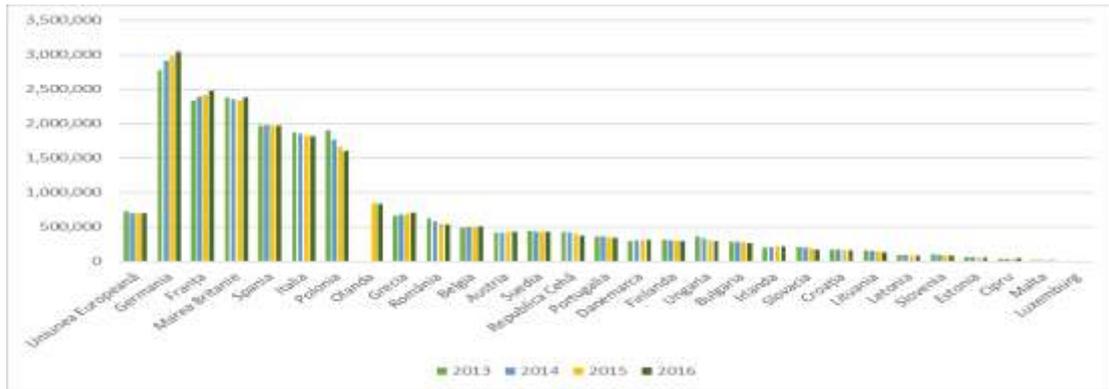
2. COMPARATIVE ANALYSIS OF THE MAIN ASPECTS RELATED TO THE EUROPEAN TERTIARY EDUCATION

2.1. Quantitative aspects of higher education in the European Union member states

The starting hypothesis is that the countries that stimulate the system of higher education (characterised by a higher flexibility of inputs and outputs and a higher recovery rate) exhibit (both quantitatively and qualitatively) a higher rate of success than the administratively centralised systems.(Minică, 2013)

An overview of the participation of young people in tertiary education is presented in Fig.no.1. which highlights the evolution of the number of students enrolled in higher education institutions in different Member States of the European Union in 2013-2016, but also the average for each year.

Germany ranks first on this list, and is also the most populated EU member state with a total of 2 780 013 students in 2013 and 3 043 084 students in 2016, with a positive evolution of 8.64%. In French universities in 2013, 2 388 880 students were admitted to studies, with the number rising by 3.68% by 2016. And the UK had a significant number of students in 2013, namely 2 352 933, this figure being practically constant during the 4 years. Top countries include Spain, Italy, Poland. Data on top countries exceeds the EU average 3 or 4 times even in the case of Germany. In Romania, however, only 535,218 students were admitted to studies in 2016, fewer by 1.18% than in 2015 and fewer by 7.51% compared in 2013, thus being below the EU average of 23.48%. This annual decrease in student numbers is mainly due to demographic decline, the drop in the number of high school graduates or the preferences of young people to study or work abroad.

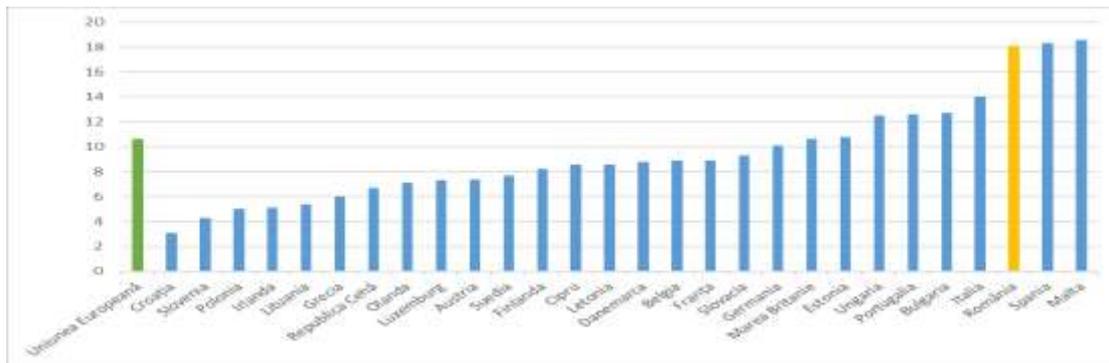


Source: Eurostat (educ_uae_enrt01)

Figure 1 – Number of students enrolled in the higher education units in the period 2013-2016 in the UE states.

As regards early school abandonment among the 18-24-year olds, in Fig. 2. we can observe that last year in Romania, 18.1% of them dropped out of the educational unit they were attending, which exceeded the EU average by 7.5%. The most affected by this risk are young people coming from rural areas, poor families and Roma ethnics. In 2010, the school dropout rate was the same, which confirms that there has been no significant system change on the national level for 7 years. For 2020, Romania aims to reduce school drop-out rates to 11.3%, but this target is far from reality, with a 6.8% gap. An even poorer situation than in Romania is recorded in Malta and Spain.

Also among the top countries in the ranking we encounter in exchange Croatia, with only 3.1% drop-outs in the same year, Slovenia with 4.3%, Poland, Ireland, countries where young people are more confident and determined to successfully complete higher education.



Source: Eurostat (edat_lfse_14)

Figure 2 – Weight of early college dropouts in 2017 in the EU states (% of the school population aged between 18 and 24)

School abandonment has long-term negative effects on the entire society, because unskilled young people are disadvantaged when it comes to employment, and this increases the risk of poverty. The main causes of school drop-out are the lack of counselling for high school graduates to choose a training program in sync with their skills and preferences, the lack of income for young people to cover their monthly expenses, preferring to work as unqualified workers, dealing with the busy timetable, the sessions of exams, but also the lack of interest in the subjects studied during the

academic years. The fact that the subjects taught in educational institutions are not sufficiently correlated with the more demanding requirements on the labour market, or that most of the study programs are generally based on theory, and specialized practice is often neglected, also trigger the early school abandonment.

As part of the Europe 2020 strategy, the benchmark is to reduce the school drop-out rate down to 10% on the European level. 15 EU Member States have already reached their national 2020 target for this indicator, some have even surpassed it. These countries are Ireland, Denmark, Greece, France, Belgium, Croatia, Cyprus, Latvia, Italy, Austria, Lithuania, Netherlands, Luxembourg, Finland and Slovenia.

As regards the tertiary education, Eurostat estimates that in 2015, in the EU-28, 4.7 million young people graduated, most of them having studied in France (752 000), the UK (740 000) and Germany (545 000).

On the European level, in 2016, 39.1% of the persons aged between 30 and 34 had a document certifying the graduation from a higher education institution (Fig. 3), the percentage rising by 2% compared to 2013 and by 5.5% compared to 2010. Europe's target is at least 40% of people aged 30 to 34 to have higher education diplomas by 2020 (eighteen EU Member States have already reached the threshold in 2016, some have even exceeded it).

In Romania, the weight of tertiary graduates (30-34 years) has increased twice in the reference period, rising from 18.3% in 2010 to 25.6% in 2016. The national target of 26.7% for 2020 is achievable, but the European one of 40% is not, as the state still has a lot of work to do to achieve this goal, notably by identifying funding resources and restructuring the fund allocation system by renouncing to the current funding system per capita.

From Figure no. 3. it can be remarked that progress over time is significant, but the results recorded by Romania, Italy, Hungary, Malta in 2016 show a gap of about one half compared to the leading countries, such as Lithuania, Luxembourg, Cyprus and Ireland.



Source: Eurostat (edat_ifse_03)

Figure 3 – Weight of higher education graduates in the period 2010-2016 (% of the population aged between 30 and 34).

The fact that so few young people in Romania become graduates of a higher education institution is mainly due to the considerable number of school pupils who drop out early, the negative or very poor results obtained at the baccalaureate exam, but also the decrease of the level of disadvantaged people's enrolment in the educational system.

Each state is responsible for implementing reforms and taking action to achieve both its national and European objectives. Reforms should aim not only at increasing the number of graduates on the tertiary level, but also at improving the quality of studies and research, and these two elements are closely linked. At the same time, along with the necessary organisation and funding, emphasis should be placed on the under-represented groups in tertiary education, which is also present in all EU countries. Increasing the involvement of people from disadvantaged regions or environments, ethnic communities and people with disabilities, facilitates an increase in the number of graduates.

It is also necessary to encourage adults to enrol in tertiary education if they have not been able to do so before. It would be extremely useful if adults who are already integrated into the labour market acquire more in-depth knowledge in the field in which they work, moving thus from vocational education to higher education.

Annually, more and more students are dropping out of higher education, and in order to diminish this phenomenon it is necessary to actively guide and inform the young people about their future career. This will help preserve the motivation to successfully complete the studies and achieve the goals. Supporting girls and boys to pursue specialised studies in areas where there are gender imbalances among students will directly lead to their reduction both in education and on the labour market. Motivating and attracting motivated and able young people from other countries could also foster an increase in the number of qualified graduates.

Thus, by all these means, or by linking some of them, and especially by modernising and continuously improving the quality of tertiary education, the adaptation to the labour market requirements will enhance the possibility of achieving the Europe 2020 goals.

2.2. Qualitative aspects of higher education in the European Union member states

The fields of study from which the youth from EU Member States graduated in 2015 are presented in Table no. 1, where we can see that more than one third, i.e. 33.8% on the average, obtained a degree in social, economic or legal sciences. The most experts in these sciences, which are also the most preferred in all EU Member States, graduated in Bulgaria (49.8%) and Luxembourg (45.8%) and the least in Finland (25.3%) and Spain (26.2%). The second place in the EU is occupied by engineering and constructions with a graduation share of 13.9%, exceeding the medical field by only 0.2%. In Germany (22.3%) and Portugal (20.5%) the highest number of engineers and building specialists graduated, and most doctors were trained in the education systems in Belgium (25.6%) and Sweden (21.8%). The list of young people's preferences continues with the arts and humanities with 11.0% of the total graduates, natural sciences, mathematics, statistics, IT&C, with a share of 10.3% and education with 9.3%. Fewer young people attended programs in services (3.7%) and agriculture, forestry, fish farming and veterinary medicine (1.7%).

Romania recorded lower values than the EU average in the field of education (3.5%), arts and humanities (9.2%) and medicine (11.0%), while in the other fields the weight of higher education graduates is higher compared to the European average.

Table .1. Higher education graduates' distribution by domains in 2015 (%)

	Education	Arts and Humanities	Social sciences, communication sciences; Business and administration; law	Natural sciences; Mathematics and Statistics; IT&C	Engineering and constructions	Medicine	Services	Agriculture, forestry, fishery, veterinarian medicine
EU	9.3	11.0	33.8	10.3	13.9	13.7	3.7	1.7
Belgium	9.0	10.6	31.0	5.4	11.4	25.6	1.3	1.8
Bulgaria	8.0	6.7	49.8	6.8	14.0	6.6	6.4	1.7
Czech Republic	10.1	7.7	31.1	8.7	14.5	10.0	6.7	3.0
Denmark	8.8	12.9	30.8	9.0	10.6	21.6	4.2	2.0
Germany	9.6	12.2	29.7	14.4	22.3	7.2	2.6	1.9
Estonia	8.0	12.3	33.2	12.0	14.5	12.0	6.2	1.9
Ireland	7.9	13.3	30.8	14.6	10.2	16.5	4.7	1.6
Greece	9.8	11.4	32.4	11.8	18.1	10.9	1.6	4.0
Spain	16.2	8.8	26.2	9.0	16.4	14.5	7.1	1.1
France	3.4	9.2	41.4	10.4	14.8	15.8	3.3	1.6
Croatia	3.9	9.9	39.6	9.1	14.8	10.2	8.1	4.5
Italy	6.8	15.8	32.1	0.9	...	16.2	...	2.1
Cyprus	17.6	9.2	41.9	6.0	11.3	8.0	5.2	0.7
Latvia	6.8	7.9	41.3	7.9	12.5	14.0	7.9	1.7
Lithuania	7.1	8.0	43.9	5.8	17.3	13.8	2.0	2.1
Luxembourg	16.1	8.7	45.8	8.4	5.5	15.4	0.0	0.2
Hungary	16.2	9.5	35.1	6.5	15.5	7.9	5.1	2.6
Malta	10.9	13.0	35.0	17.0	7.8	13.0	1.6	0.2
Holland
Austria	12.7	9.0	31.8	9.6	19.7	6.7	8.9	1.6
Poland	13.5	7.4	34.3	7.2	15.1	13.2	7.8	1.5
Portugal	6.9	9.0	30.0	7.4	20.5	18.6	5.7	1.9
Romania	3.5	9.2	38.8	11.2	17.2	11.0	5.0	4.1

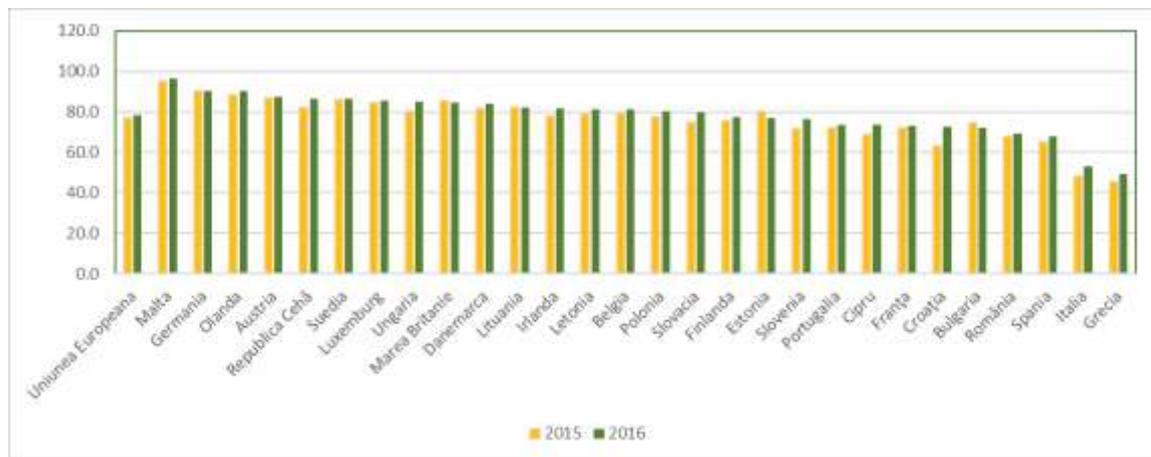
Slovenia	10.1	9.5	34.3	9.5	16.2	10.1	7.5	2.9
Slovakia	13.1	7.4	32.9	8.4	12.7	17.5	6.1	2.0
Finland	6.5	12.9	25.3	11.5	17.0	19.5	5.1	2.3
Sweden	12.1	6.2	30.6	7.9	18.1	21.8	2.4	0.9
UK	9.6	15.5	33.8	17.0	9.2	13.3	0.0	1.0

Source: Eurostat (educ_uoe_grad02)

The situation regarding the integration of the graduates on the labour market (Fig.4) shows that on the European level the employment rate was 78.2% in 2016, increasing by 1.3% compared to the previous year. The Europe 2020 Strategy proposes that the proportion of higher education graduates should be at least 82% for the age group aged between 20 and 34.

Although the European Union is very close to achieving the objective, there are still drawbacks in the interdependence between job requirements and the skills of potential employees, especially among undergraduate college graduates.

This is also the case for Romania, where the employment rate of new graduates was of 69.3% in 2016, by 1.2% higher than in the previous year. Prior to enrolling in a study program, prospective students should first consider the compatibility between their skills and the chosen field, and, with regard to higher education institutions, it is necessary to review the programs and standards that guide them.



Source: Eurostat (edat_lfse_24)

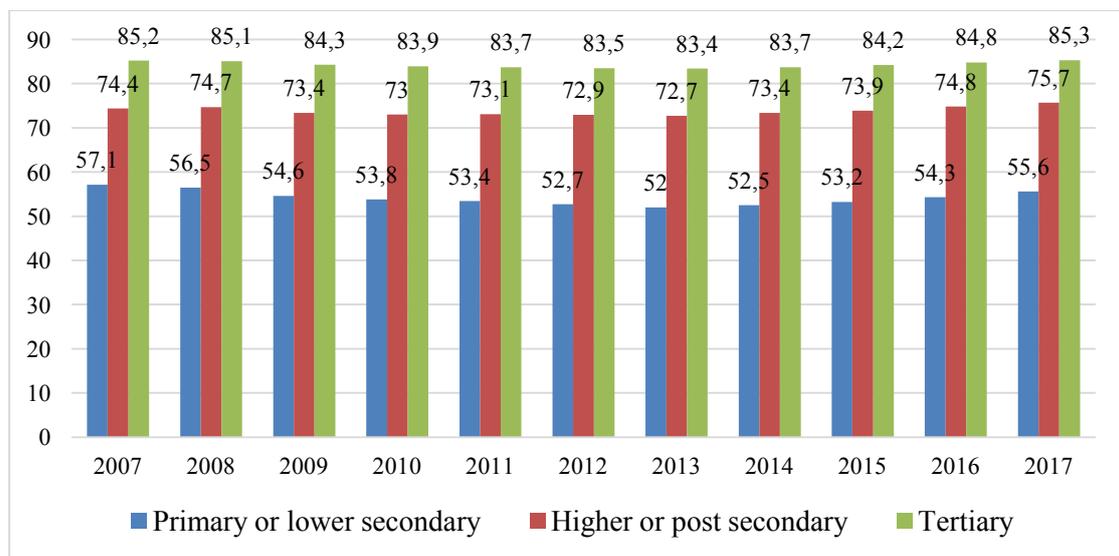
Figure 4 -. Employment rate of tertiary education graduates on the labour market (% of the population aged between 20 and 34).

The relevance of tertiary education on the labour market is an important factor influencing the employability of young graduates and their contribution to the sustainable development of the knowledge-based economy.

Along with the stabilisation of the post-crisis economy, there is also an improvement in the integration of young people into the labour market. In 2016, a youth unemployment rate of 18.7% was recorded on the European level (Fig. 5). But in countries such as Greece and Spain, this rate is still extremely high, exceeding 40%. In 2016 the value of the unemployment rate was lower among girls (17.9%)

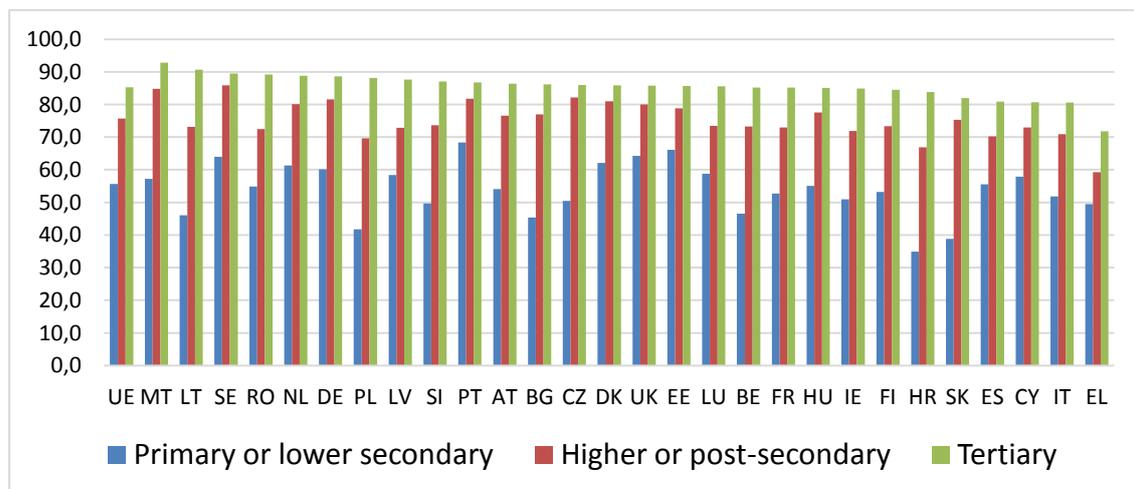
compared to boys (19.4%), due to the higher education level or the lower employment rates. However, the data show that young people are often employed in temporary positions, with lower salaries than other employees or even, involuntarily, in part-time regime.

The employment rate according to the level of education may vary significantly (Fig. 6). Thus, Eurostat statistics show that persons (25 - 64 years) who have graduated from a tertiary education institution have a greater chance to get employed. Thus, in 2017, the employment rate for the holders of a higher education diploma was 85.3%, with 0.5 percentage points more than in 2016 (84.8%). At the opposite end, people who have just completed primary or lower secondary education have had a 55.6% employment rate, so they have a much lower chance of getting employed. For graduates of upper secondary or post-secondary education the employment rate in 2017 was 75.7%, with 1.8 percentage points more than in 2015.



Source: Eurostat (lfsa_ergaed).

Figure 5 – Differences in the employment rate depending on studies graduated from (25 – 64 years of age) on the level of the European Union for the period 2007-2017



Source: Eurostat (lfsa_ergaed)

Figure 6 – Difference in the employment rate depending on the education level for each EU member state in 2017 (%).

Analysing these statistical data, we may conclude that it is crucial to develop policies to encourage young people to attend a study program especially on the tertiary level, as the employment level decreases when the level of education decreases.

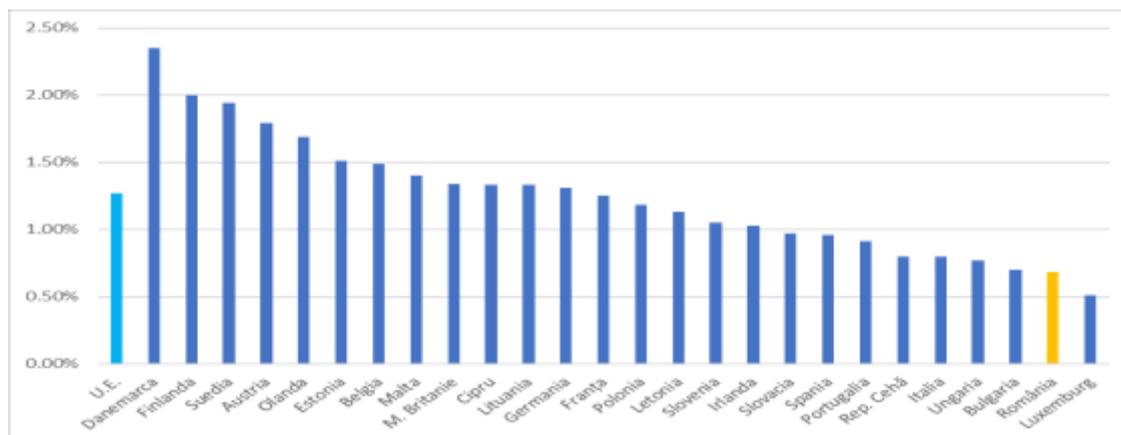
In Romania, the labour market functioning is hindered by the existence, still at high rates, of black labour, by the filling of different positions based on criteria other than value, by the emigration of labour force, by the problems occurred in the employer-employee relation, by the existence of a controversial legislation in the field (Tănase, 2012).

In addition to the fact that young people are facing financial problems and thus are exposed to the risk of poverty and social exclusion, long-term unemployment can also affect further employment. Over time, skills and competencies in the education systems get poorer if they are not practiced, and young people are no longer as productive as they might have been when they had "fresh" knowledge. A high level of youth unemployment has a negative impact on the entire society, leading to stagnation of the economy development. If a large proportion of young people with higher education are not integrated into the labour market, they are not productive, respectively they cannot capitalise on their knowledge and cannot participate in the economic growth of their country. They either choose to migrate and work in another paid lower wages. The given situation, often visible today, may be a demotivation of high school graduates in terms of enrolling in an education or training program.

Furthermore, it should also be mentioned that in the European Union in 2016 there were over 6 million young people aged 15-24 (figure corresponding to a percentage of 11.5% of the persons belonging to this category) who were economically inactive, i.e. they neither worked nor study in any form of education, category called NEET (not in education, employment or training).

3. HIGHER EDUCATION FUNDING

The most cost-effective investment a state can make is education and training, because everything starts from there. A country made of citizens with a high level of intelligence and education is a strong step towards the growth of the economy and the welfare of the entire society. The situation regarding the funds allocated by each EU Member State for tertiary education is shown in Fig. 8, where we can see that the EU average in 2014 was 1.27% of the GDP. Of the countries with statistical data on this chapter, Luxembourg allocates the least to tertiary education, only 0.51% of its GDP, and Romania allocates 0.68% of its GDP, down one tenth as compared to 2012. The largest investments in this field are made by Denmark (2.35%), Finland (2.00%) and Sweden (1.94%), the Northern countries being the most relevant example of the correlation between the size of budgets allocated to education and the performance gained over time.



Source: Eurostat (*educ_uae_fine06*)

Figure 7.- Public expenditure for tertiary education in GDP percentage in 2014(%)

In Romania, the adoption of the funding system through the annual allowance per student enrolled, given the allocation of such a small percentage of the GDP for tertiary education, correlated with an additional allocation for the visibility of the research results, considering the lack of funds allocated to this activity, led to a paradox: the state allocation per equivalent student in 2018 was 3,252 lei, less than the allocation per equivalent pupil in pre-academic education, which was of 4,413 lei.

As a result of this underfunding, a higher didactic norm is practised, close to the maximum legal limit, and thus teachers can no longer engage in research activities, the quality of the teaching act decreases, professional devotion being insufficient to meet the criteria of educational effectiveness.

CONCLUSIONS

The European Union can cope with the above-mentioned challenges through economic recovery and job creation, which in turn are closely dependent on the extent to which a company is capable of encouraging business growth. The entrepreneur creates new companies, opens new markets and develops new skills, and the most solid sources of citizens' integration on the EU labour market are represented by SMEs.

The challenges occurred in the way of the Romanian higher education seem to be correlated not only to ensuring the inputs (students' financial resource, material equipment) but especially to the process, i.e. finding the training methods able to develop competencies and not propagate information irrelevant for the future graduates. (Minică, 2013)

The importance of the tertiary education system in this new stage of evolution, that of the knowledge-based society, is clearly highlighted in the European educational plans and strategies, but the manner in which these policies are implemented on the level of each EU member state, the results of national policies are translated into quantitative indicators (number of students, dropout rate) and qualitative indicators (structure of graduates by fields of study, employment rate, unemployment rate and employment rate among graduates), indicators in which there are major differences between countries.

On the macroeconomic level, no country has ever reached a sustained period of economic development without having invested substantial sums of money in the labour force, and the quantitative assessments of its contribution to development have attributed a significant role to investment in the human capital.

Education and vocational training are the most important investments in human capital, which is why many phenomena need to be analysed from this perspective, that of their economic and social implications (Minica, 2005):

1. Gains usually increase with age, with a decreasing rate. Both the growth rate and the delay rate tend to be positively correlated with the level of qualification.
2. Unemployment rates tend to be inversely correlated with the level of skill.
3. In the relationship with employees, firms in underdeveloped countries seem to be more "paternalistic" than those in developed countries.
4. Young people change jobs more often and benefit from more workplace training than older people.
5. Income distribution is positively inclined, especially for professionals and other skilled workers.
6. Better skilled people benefit from more education and other types of vocational training than the others.
7. The size of the work is limited to the size of the market.
8. The typical investor in human capital is more impetuous and thus more likely to fail compared to the typical investor in tangible capital.

Romania has little chance of economic and social development if it does not increase the amounts allocated to education and if it does not implement successful models in the tertiary education system, generating a change of approach in the teaching-learning-evaluation activity and in the relational capital generated by the connection with the stakeholders of each university.

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