PRE-UNIVERSITY EDUCATION SYSTEM IN THE EU: RELEVANT FEATURES OF ITS TEACHING STAFF

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Abstract

The decision makers in European Union are concerned with the education quality and working conditions of teachers. The profile of teachers and the attractiveness of the profession thus reach an important position in the debate on education in Europe, even if these two issues do not show the same challenges everywhere. In other words, the task of national educational authorities is hampered by the unbalanced structure by gender and age that characterizes teachers. This paper aims to investigate the evolution of structure by gender and age of EU teaching staff. Therefore, we conduct a comparative analysis by age segments and by gender at the level of the European Union (28 countries) and the Eurozone (19 countries). The results of the research show an increase in imbalances in terms of age and gender structure, which requires action by education decision makers.

Keywords
Teaching staff, age structure, gender structure, European Union.

JEL Classification
O15, I20

Introduction
Currently, human resources are confronting with a multitude of problems (Bocean, 2007; Stanciu et al., 2010; Varzaru et al., 2012; Bocean and Sitnikov, 2015; Varzaru and Varzaru, 2016) and the field of education is no exception. Not only do teachers feel undervalued, but there are also a number of dissatisfactions with their training as a means of adequately preparing them for the realities of the profession (Eurydice, 2004; Eurydice, 2015).
The share of female teachers in the European education system is the highest at pre-school and primary level (OECD, 2005). On the educational level, most female teachers work in

preschool education. Gender imbalance in the teaching profession is a problem that most education systems face. In general, the relatively low proportion of men is present in all age groups of teachers, slightly more pronounced among the youngest (OECD, 2012).

Regarding the age structure, the number of teachers aged between 18 and 34 in the European Union has decreased significantly in recent decades. This phenomenon is caused primarily by the aging population, but there are other important factors such as: barriers to entry, declining number of jobs, high youth unemployment in the economy (Eurydice, 2018).

Therefore, a comparative in depth analysis by age segments and by gender is compulsory in order to practice a predictive management of human resources in educational system (Puiu, 2017).

In this paper we aim to investigate the relevant features of teaching staff from pre-university education system in the European Union, analyzing the structure by gender and age. The paper is structured into four sections. The first section introduces the research issue. The second section establishes the methodological bases and the research hypotheses. The third section highlights results and discussions. The fourth section concludes.

Research methodology

Starting from the conclusions of the previous researches, we have formulated two hypotheses regarding structure by gender and age of teaching staff from pre-university education system in the European Union.

H1. In most EU countries, teaching staff show a relatively balanced age structure.

H2. In most EU countries, the number of female teaching staff significantly exceeds the number of male teaching staff, education being a predominantly female field.

These hypotheses will be investigated and the resulting conclusions will allow us to draw conclusions. As research tools we will use descriptive and explanatory statistics, which are used in other similar research (Baloi, 2008; Enescu et al., 2011).

Results and discussions

In order to investigate the validity of the H1 hypothesis, we collected both synthetic and analytical data that characterize the indicators at European Union level (28 countries) and the Eurozone (19 countries). The synthetic state is shown in table 1.

Table no. 1 Age structure of teaching staff

	European Union (28 countries)			Eurozone (19 countries)		
	18-34 years	35-49 years	Over 50 years	18-34 years	35-49 years	Over 50 years
2003	23.0%	40.9%	31.5%	27.31%	43.66%	27.98%
2004	22.2%	39.8%	35.2%	27.52%	42.42%	29.19%
2005	22.7%	39.3%	34.0%	27.16%	41.77%	30.51%
2006	22.9%	39.9%	33.4%	27.30%	41.80%	30.35%
2007	23.8%	40.7%	33.3%	25.15%	39.84%	29.19%
2008	23.3%	40.6%	34.2%	26.47%	41.22%	31.65%
2009	23.0%	40.5%	34.4%	25.38%	41.77%	32.19%
2010	23.4%	40.6%	34.4%	24.93%	42.12%	32.60%
2011	22.6%	40.9%	34.9%	24.03%	42.27%	33.33%
2012	25.3%	41.7%	32.8%	23.44%	42.24%	34.12%
2013	21.9%	41.7%	34.9%	21.64%	41.69%	35.58%
2014	20.3%	42.9%	35.3%	20.25%	41.94%	36.65%
2015	19.0%	42.9%	36.5%	19.55%	41.66%	37.83%
2016	18.6%	42.7%	36.9%	19.04%	41.36%	38.32%
2017	18.2%	42.5%	37.3%	18.56%	41.12%	38.42%

Source: Data from EUROSTAT, 2019

To depict the trends of teaching staff percentages between the ages of 18 and 34, fig. no. 1 shows comparatively the percentages for EU and Eurozone.
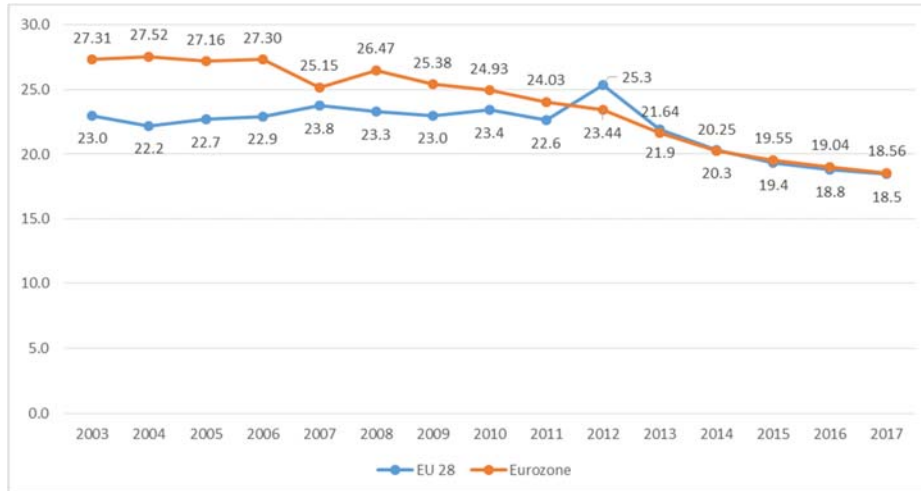

Fig. no. 1 Trends of teaching staff aged between 18 and 34 (percentage of total staff)
Source: Data from EUROSTAT, 2019

Analyzing the data in fig. no. 1 we can see a clear tendency, both series of data recording a clear decrease. This phenomenon may be caused mainly by the aging of the population, but there are other important factors such as: obstacles to system entry, decrease in number of jobs, high unemployment among young people (Eurydice, 2018).
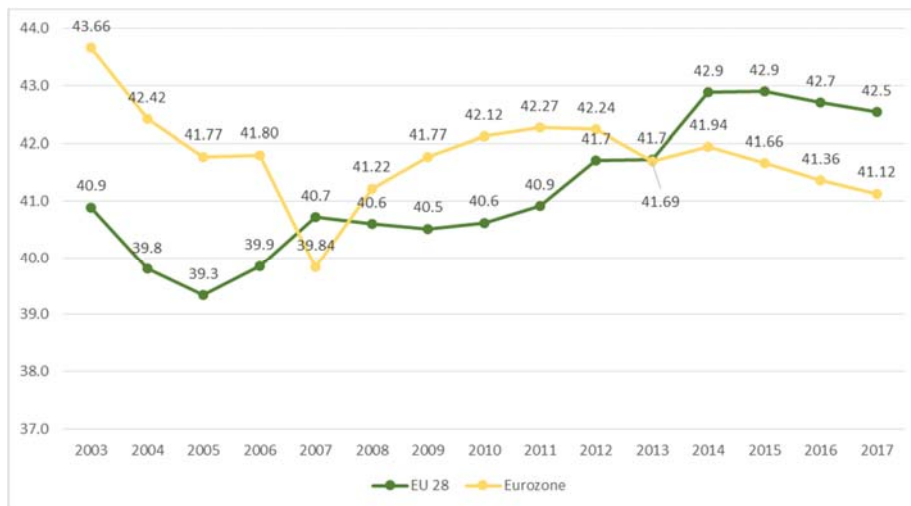

Fig. no. 2 Trends of teaching staff aged between 35 and 49 years (percentage of total staff)
Source: Data from EUROSTAT, 2019

Based on analysis of fig. no. 2 we conclude that trends are differentiated at the level of the European Union and the Eurozone, due to the fact that at the level of the European Union

there is a lower degree of homogeneity than at the level of the Eurozone. Fig. no. 3 illustrates the evolutions of teaching staff aged 50 and 65 years and above.
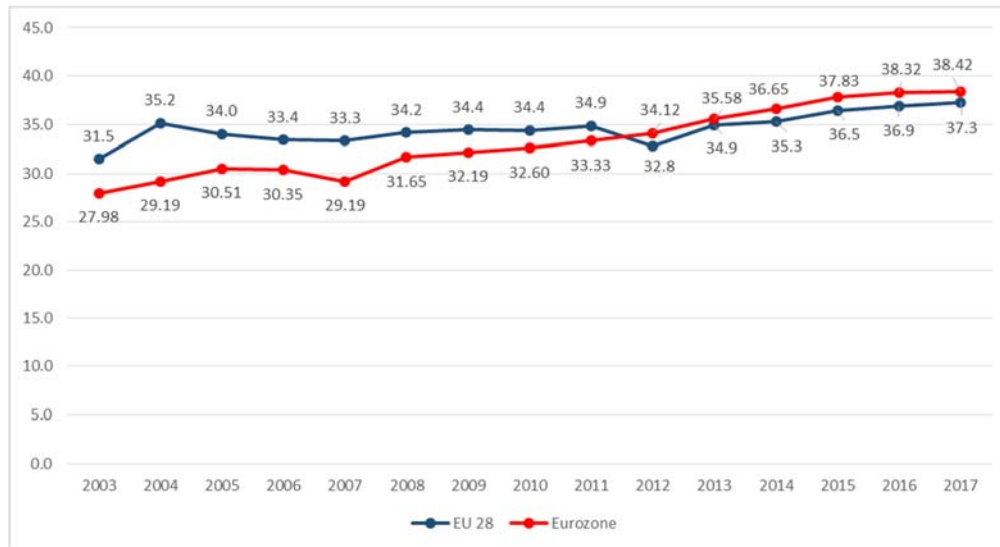

Fig. no. 3 Trends of teaching staff aged between 50 and 65 years and above (percentage of total staff)
Source: Data from EUROSTAT, 2019

Fig. no. 3 illustrates the aging phenomenon that affects the workforce. A longitudinal analysis conducted at the level of 2017 shows a relatively well-adjusted age structure (fig. no. 4).
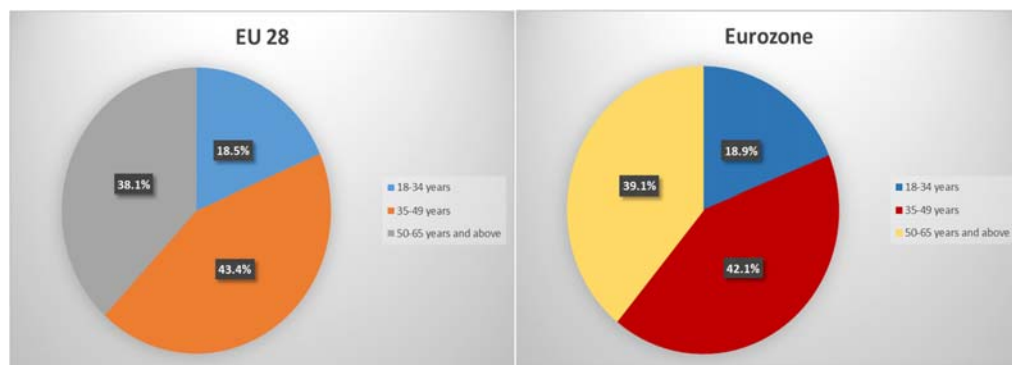

Fig. no. 4 Age structure of the teaching staff of the in 2017
Source: Data from EUROSTAT, 2019

Particular attention should be paid to the age group between 18 and 34, as this is practically the future of the teaching profession. A small number of teaching staff indicate a crisis of experienced personnel in this area in the future, when the senior teachers will gradually leave the system.

Analyzing the trend recorded in the period 2003-2017 of the teaching staff aged between 18 and 34 years in each country, it can be seen that some countries, which presently have a balanced structure, have to deal with workforce aging. Fig. no. 5 shows the evolution of teaching staff between aged between 18 and 3 in 2017 compared to 2003.
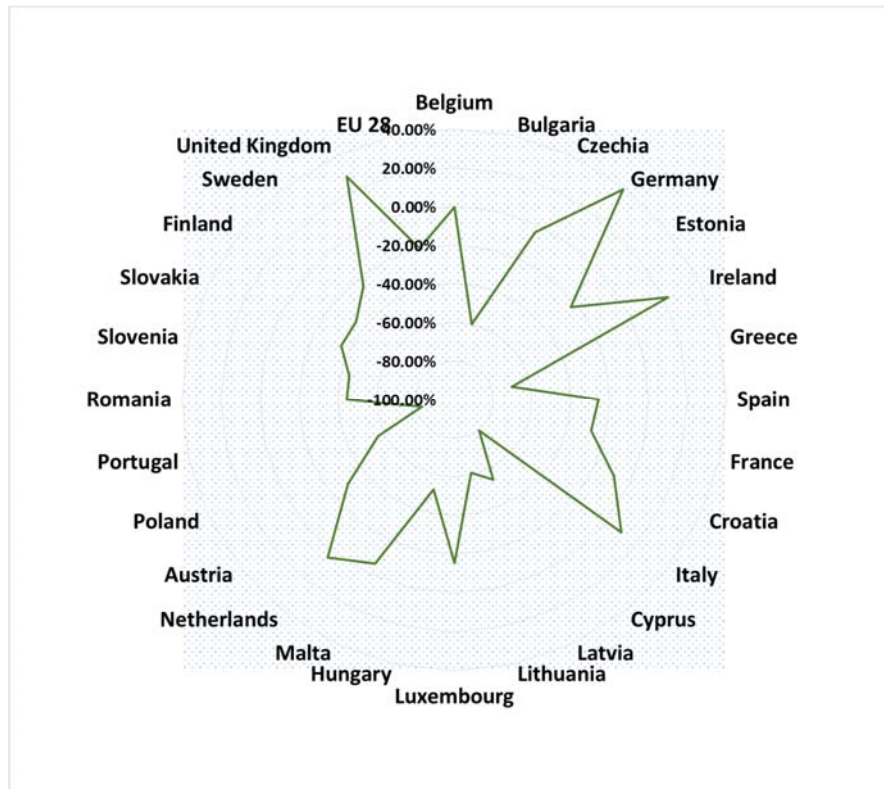
**Fig. no. 5 Evolution of teaching staff aged between 18 and 34 years (EU level) in 2017
compared to 2003 (percentage change)**
Source: Data from EUROSTAT, 2019

Based on the research results we can conclude that the hypothesis H1 is validated for the period studied (2003-2017). The age structure is relatively similar, the gaps waning as a result of the development of the countries outside the Eurozone.

Teacher aging is a common phenomenon in all European countries. On average, over 37% of teachers in pre-university years are 50 years old or older, with a substantially higher ratio in some countries: 53.1% in Italy, 48.1% in Lithuania, 47.5% in Austria and 46.4% in Greece. At the opposite pole are countries with a small percentage of teachers in pre-university schools aged 50 or over, such as Malta (14.9%), Great Britain (21.6%), Luxembourg (27%) (Eurostat, 2019). The scattering of teachers by age groups point out that the vast majority of teachers retire as soon as they can (Eurydice, 2015). This situation is exacerbated by the early retirement used as a measure to prevent mass layoffs in times of crisis. Though, in most EU countries the retirement age is over 65 years old today (Mangra et al., 2009). Diminished birth rates and, therefore, the decreased number of children do not offset the frequent departures of teachers. Moreover, some countries have reduced the number of pupils per class, thus increasing the need for new recruits (European Commission, 2013).

In order to investigate the validity of the H2 hypothesis we have collected synthetic data that characterize indicators at EU level and the Eurozone. The synthetic situation is shown in table no. 2.

Table no. 2 Evolution of teaching staff gender structure

	European Union (28 countries)		Eurozone (19 countries)	
	Female	Male	Female	Male
2003	68.9%	31.1%	30.0%	70.0%
2004	68.2%	31.8%	29.6%	70.4%
2005	69.2%	30.8%	29.2%	70.8%
2006	69.5%	30.5%	28.8%	71.2%
2007	70.0%	30.0%	28.5%	71.5%
2008	70.2%	29.8%	28.2%	71.8%
2009	70.5%	29.5%	27.8%	72.2%
2010	70.9%	29.1%	27.6%	72.4%
2011	71.1%	28.9%	27.4%	72.6%
2012	70.2%	29.8%	26.7%	73.3%
2013	74.5%	25.5%	26.7%	73.3%
2014	74.7%	25.3%	26.0%	74.0%
2015	74.5%	25.5%	26.4%	73.6%
2016	74.8%	25.2%	26.2%	73.8%
2017	72.2%	27.8%	26.0%	74.0%

Source: Data from EUROSTAT, 2019

The evolution of female teaching staff at EU and Eurozone level is illustrated in the Figure no 6.
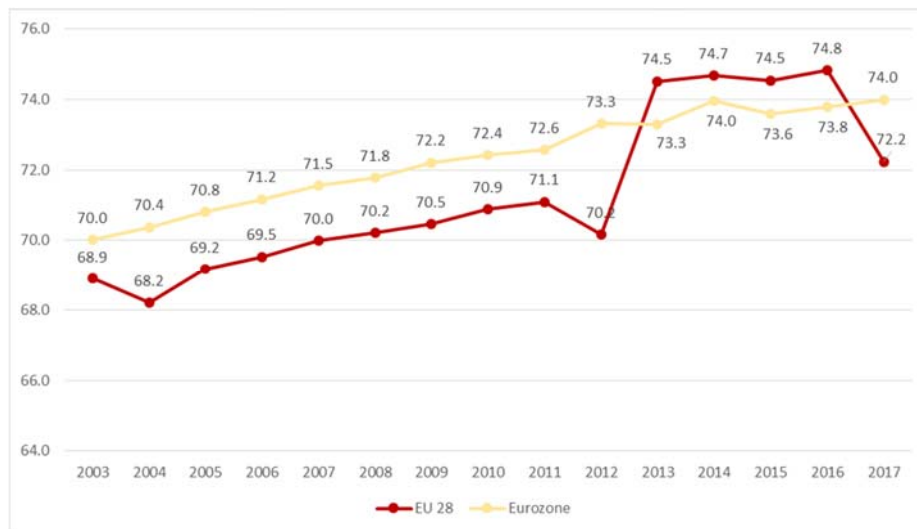

Fig. no. 6 Evolution of female teaching staff share in total personnel
Source: Data from EUROSTAT, 2019

Analyzing the data in fig. no. 6 it can be observed that the female teaching staff clearly overtakes the male teaching staff in the HR structure, recording in addition an increasing tendency of both series of data. This phenomenon is specific to the sector, as a result of the idea that the teaching profession is more suitable for female teaching staff.

In addition, the male teaching staff has a low share, both series of data recording a decreasing trend (fig. no. 7).
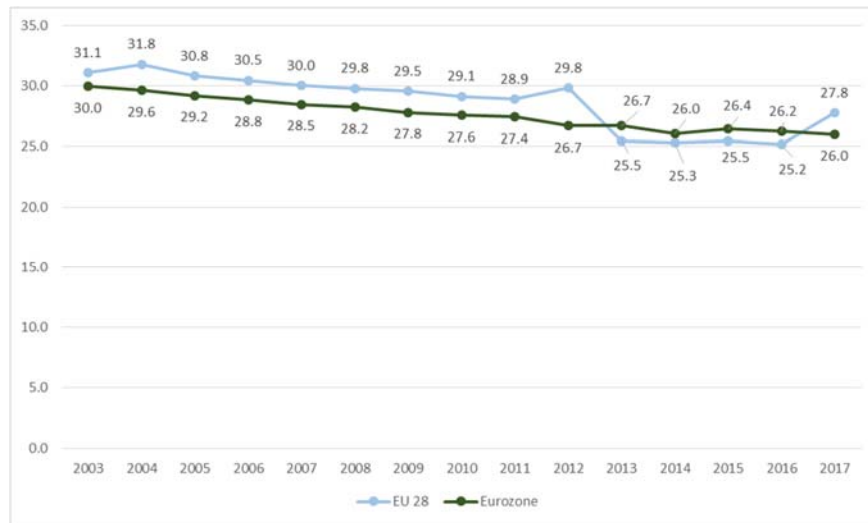
Fig. no. 7 Evolution of male teaching staff share in total personnel
Source: Data from EUROSTAT, 2019

Following the results of the aggregated synthetic data at the EU level, we can conclude that the hypothesis H2 is validated for the period studied (2003-2017). There is a differentiation among countries depending on the degree of economic development and culture, but in all the countries female teaching staff overtakes the male staff in education.

The feminization of the teaching profession, which is particularly high for ISCED 1, should also be considered when analyzing the retirement age (which in many countries is lower than for men). This high ratio of women eligible for retirement (Eurydice, 2015) is likely to aggravate the deficit.

Conclusions

Currently, there are an increasing imbalance in terms of age and gender structure, which requires action by education decision makers. In this paper we set out to investigate structure by gender and age of teaching staff from pre-university education system in the European Union. In this regard, we formulated two hypotheses that were subjected to a validation process, during the research.

Researching the first hypothesis we found that in most EU countries, teaching staff show a relatively balanced age structure, the gaps between EU and Eurozone waning as a result of the development of the countries outside the Eurozone. In terms of gender structure in most EU countries, the number of female teaching staff significantly exceeds the number of male teaching staff, education being a predominantly female field.

In order for an education system to be effective, governmental authorities through the Ministry of Education must manage teaching to ensure a balanced structure both in terms of age and gender. Therefore, education decision makers must encourage young people to choose the teacher profession by increasing the attractiveness of this profession and build a culture that encourages males to choose this profession, in order to prevent future structural imbalances that may affect the workforce in the education system.

Acknowledgment

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