CHALLLEGES IN ROMANIAN HIGHER EDUCATION

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ABSTRACT: Romanian higher education has suffered significant changes during the period 1990-2014, increasing the number of students and higher education reforms on the one hand, underfunding and changes in earnings, on the other hand. Reforms in higher education system failed in increasing human resource performances and in society vitalizing, also most government interventions decreased the level of funding. The paper analysis the time evolution of public higher education in Romania in terms of academic staff number and monthly average real net wage, using linear regression and the correlation coefficient. Also, areanalysed structural changes of academic staff on academics ranksduring the period 1990-2014.
KEYWORDS:higher education, academic staff, correlation, regression, monthly average real net wage

1. INTRODUCTION

Current global trends characterized by emphasizing the importance of knowledge production and information flow, perception of knowledge as vital resource to contemporary societies, the accelerated growth of expectations from society, significantly changed the traditional role of higher education.

Distancing from the objectives of traditional academy, create fundamental knowledge, the emergence of the knowledge society, which tends to focus on results, had a direct impact on the nature of academic activity.

In Romania last decades, political and socio-economic circumstances have played an important role in shaping academic life.[2]Higher education reforms, expected to initiate changes and progress in society but they failed an increase in human resource standards and revitalizing the company.

Higher education fulfils both a function conservative, reproduce and influences social relations, and innovative function that requires reform and social progress.Through a compromise between traditional and the new pressures imposed by efficiency,expanding the role of universities and the academics, it was affected both the environment and also their work. Assessing academic productivity means assess research, teaching and "services" provided. The research results should contribute to social development and academic community,teaching process focus the energy of teachers on learning and the excellence development, so as to produce high-quality human resources.The pressure on them has become increasingly strong, being determined by society's expectations, by growth the external control over performance, meaning a gradual loss of university autonomy.

Universities endorse the activities of education and research, bureaucratic and centralized management mode of university institution, and the states imposes rules functioning, allocate human and material resources, establishes criteria for prestige and legitimacy. As a result of these specific standards, the academic community incumbent some formal administrative powers, respond to internal and external quality standards, is subject to the moral norms, specific attitudinal and behavioral.

Structural changes in the romanian socio-economic system have determined and a change in mentalities and social representations of the actors are in the academic field,taking these "traditions, stereotypes, fear and movements of the social field"[3].

2. DYNAMICS OF ACADEMIC STAFF DURING 1990-2014

Higher education in Romania has known major changes during the study period, from 1990 to 2014. Currently, in Romania operates 49 public universities (state) in which there are a total of 405 faculties financed from the state budget.

Regarding the evolution of the number of academic staff available in the system, statistics published show that there were 27 089 academic staff in 2008, registering a decreasing trend with a relative stabilization in 2013,reaching a total of 24.467 in 2014. Thus, academic staff fluctuation from public education is shown in figure 1.
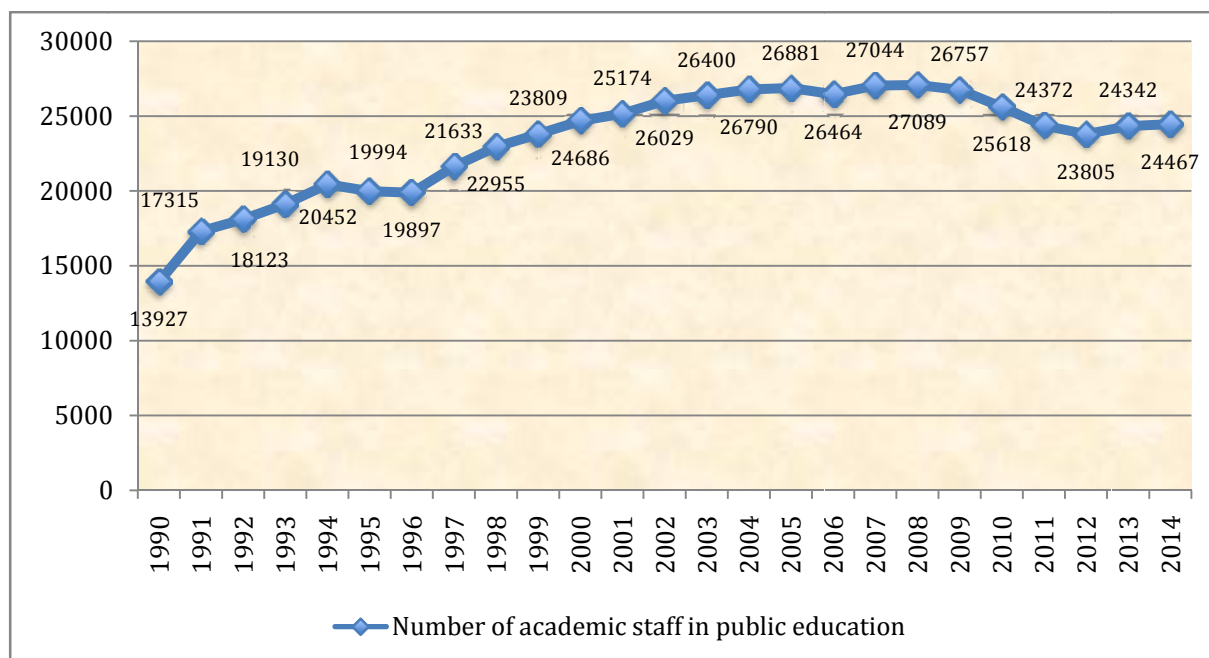

Figure 1. Evolution of academic staffnumber between 1990-2014

It can be observed that changes in number of teachers are part of the Romanian society's general economic trend, registering a decrease of 9.68% in 2014 compared to 2008.The decreasing trend was maintained in the 2011/2012 academic year.The decreasing trend was maintained in the 2011/2012 academic year, due to the application of Education Law no. 1/2011, regarding the retirement of teachers and also, due blocking jobs in education.

Table 1. Structure of academic staff on academic ranks in the period 2009-2014

Anul	Assistant	Assistant Lecturer	Lecturer	Associate professor	Professor
2009-2010	2085	7760	8773	5609	5767
2010-2011	1914	7496	8455	5461	5312
2011-2012	1315	7588	9223	5319	4571
2012-2013	1025	7109	8455	5475	4209
2013-2014	705	6671	8773	5988	4425

Source: Statistical data on higher education INSSE

The elimination of restrictions has led to slow these negative developments in the academic year 2012/2013. This is observed in the analysis of the academic staff on academics ranks, of their depending evolution, of career advancement. (table 1) Because of various laws imposed for occupying teaching positions, these data can be interpreted as a measure of the quality development of human resources under the system, and of the academic system's capacity to attract young people interested in academic work.In the 2013/2014 academic year there is an increase in the number of people employed in rank of lecturer with 594 people, with 513 people associate professor and full professor with 216 people and a decreasing number of assistants. The largest increase is in the case of associate professors, with 9% of all employments from public universities. Following this analysis we can say that universities

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have preferred to promote existing employees, fact supported by decrease in overall employment for the assistant rank, point of entry into an academic career.

3. DETERMINATION, VALIDATION AND ANALYSIS OF THE CORRELATION BETWEEN THE NUMBER OF TACADEMIC STAFF AND THE WAGE

Developments in recent years of the Romanian education and international comparisons indicate the aggravation chronic underfunding of higher education system in Romania. This underfunding, which was maintained even in years when budgetary allocations were higher (including 2007/2008), has adversely affected not only the quality of higher education, but also medium and long-term competitiveness of universities in Romania and the Romanian economy whole.

Analysing the number of academic staff and net monthly wages in education during 2005-2014 there was a decrease in the number of academics in 2010-2011, clear consequence of reducing wages by 25% and blocking jobs didactic.

Number of employees at universities recorded a slight increase over the period 2013-2014, due to the opening, after a long period, the employment opportunities and promoting higher education.
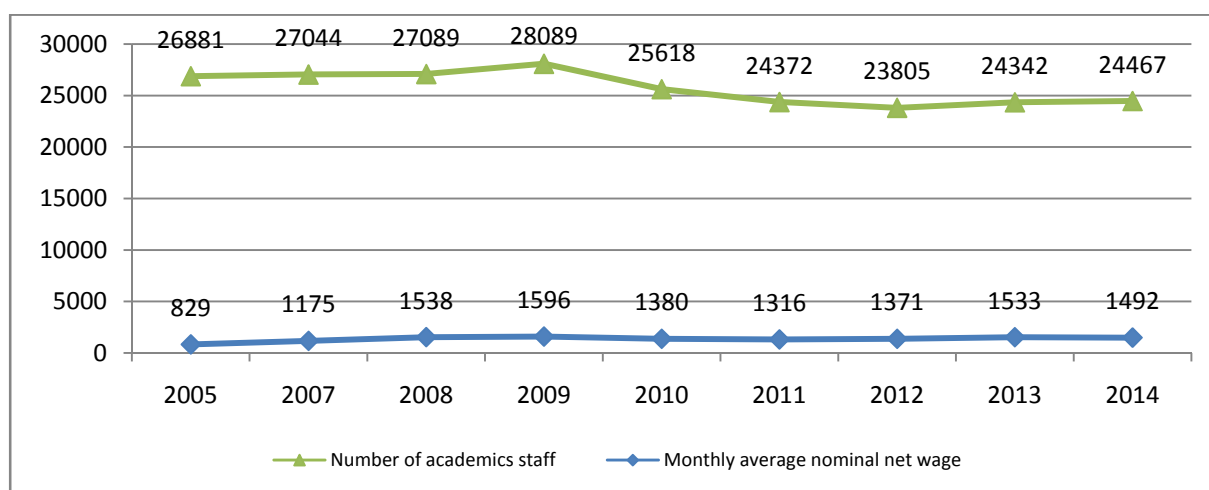

Figure 2. Evolution of the number academic staff and monthly average nominal net wage in education between 1990-2014

Measuring the impact of the wage changes on the number of academic staff can be revealed by analysing the correlation betweenacademic staff number index(ICDU) and monthly average real net wage index in education (ICRI) (adjusted with inflation rate), based on the following statistical assumptions:

H_0 (*null hypothesis*): Modifying monthly average real net wage in education has negligible influence on the evolution of academic staff number.

H_1 (*alternative hypothesis*): Modifying monthly average real net wage in education has a strong influence onthe evolution of academic staff number.

For better accuracy of the model we introduced in the data series the 1990-2005 period, and we adjusted wages with inflation rate.

Analysing the results of ANOVA table (table 2), we notice that multiple R has a value of 0,895 which corresponds to a strong direct links between the variables analysed.

Furthermore, the calculated value of Fisher test F = 88,851 is greater than proper tabulated value $F_{0,05, k, n-k-1}$=4,96, so we can say that the null hypothesis is rejected and the alternative hypothesis is accepted.

In conclusion, since 1990 the number of academic staff is affected by changes of monthly average real net wage in education. That fact is emphasized by the value of Significance F =3,499E-09, value that is lower than materiality used (α = 0.05).

Table 2. Testing the hypothesis H₀by ANOVA method

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0,895					
R Square	0,802					
Adjusted R Square	0,793					
Standard Error	0,039					
Observations	24					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	1	0,137	0,137	88,851	3,49926E-09	
Residual	22	0,034	0,002			
Total	23	0,171				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0,812	0,026	31,610	0,000	0,759	0,865
Real wage index in education	0,155	0,016	9,426	0,000	0,121	0,190

Graphical representation of the evolution indexes of academic staff number and monthly average real net wage in education (figure 3), certify the existence of a direct linear link between the two variables and allows the application of simple linear regression model by the method of least squares for the study of the dependency between academic staff number and monthly average real net wage in education.
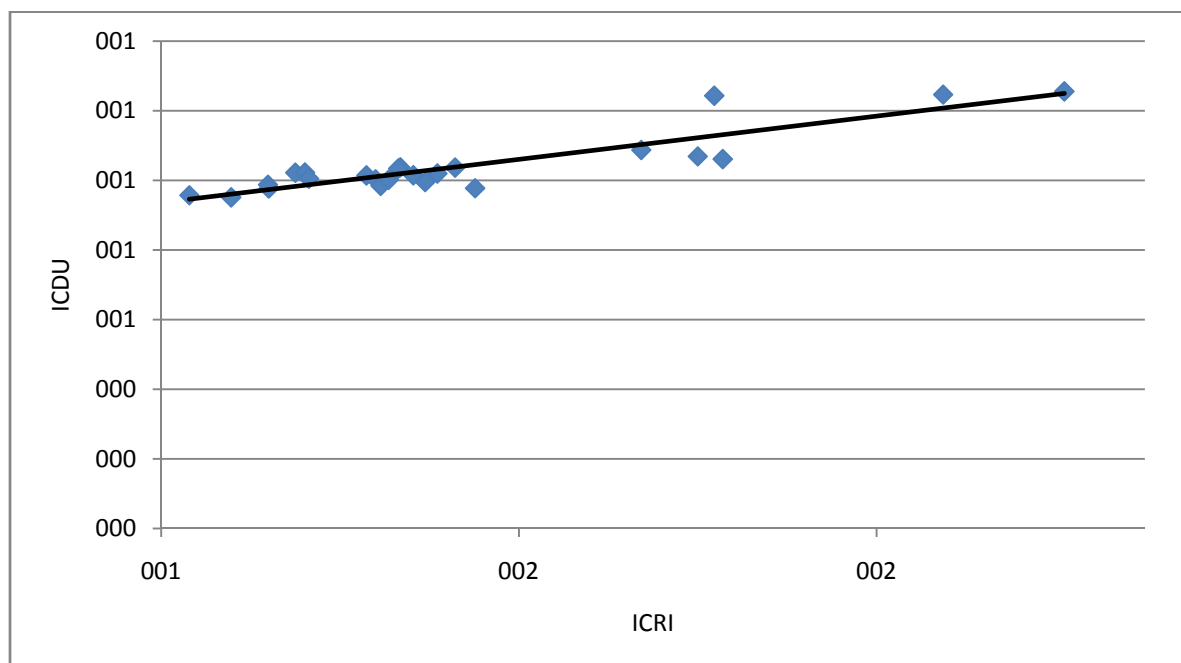

Figure 3. Trend of number academicstaffduring 1990-2014

Linear regression equation of the trend of academic staff number evolution is

$$ICDU = 0,812 + 0,155 \cdot ICRI$$

Real net wage in education is a significant regression coefficient (t=9,426 andPvalue=0,00 lower than 0,05) whose positive value, show us that an increase of real wage in education

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with one unit, records an increase the academic staff number with a value between 0,121 şi 0,190, the most probable value is 0,155. (table 2).

Free coefficient of the regression equation, Intercept, can take values between 0,759 and0,865,the most probable value is 0,812.

The value of determination coefficient R^2=0,802 indicates that 80,2% is allocated to the influence of real wage in education onacademic staff numberfrom high education, the remaining 19,8% being other factors random dispensable.

Result of using Fisher test: F = 88,851(Significance F=3,49926E-09 < 0,05), shows that the model used expresses very well the correlation established between the evolution indexes of academic staff number and monthly average real net wage in education in Romania in 1990-2014 period.

4. CONCLUSIONS

During 1990-2014 period, the number of academic staff has fluctuated, registering an increasing trend until 2008, with a relative stabilization in 2013, followed by a decreasing trend with a relative stabilization in 2013. The decreasing trend was a consequence of the application of Education Law no. 1/2011, regarding the retirement of teachers, reducing wages by 25% and blocking jobs in education.

Analysing the structure of academic staff on academics ranks, result that universities have preferred to promote existing employees, fact supported by decrease in overall employment for the assistant rank, point of entry into an academic career.

Regarding the correlation between academic staff number index and monthly average real net wage index in education (adjusted with inflation rate), should be noted that since 1990 changes of monthly average real net wage in education have a significant influence on the number of academic staff.

The public sector of the economy and thus the public university education is affected by the dynamics of the economy or by its structural modifications. Among others the overwhelming high level of demands of the system is highly influenced also by: The dependency on the demographic dynamics of population, the high level of knowledge demanded by the practiced activity, the role model of teachers that they must have on various groups of persons. During the last years there was a significant conjectural evolution of the structure of the national economy that implied the regression of economic or social performances.

The combined effect of descendent evolution of public spending allocated to superior education with the decrease of number of students, amplifies the insufficient finance of Romanian superior education. The salary level is very low in Romania, compared to the European Union, being constantly at a low level compared to the average salary in other sectors. The financial pressure on the superior education institution will continue to grow due to the decreasing number of students, combined with the decreasing of the capacity and availability of public authorities for financing the public superior education, this financial structural pressure being on an increasing trend.

Most of the countries in the UE understood the importance of preparing human resources, especially superior preparation. Consequently many times, regardless of economic issues, public resources have been allocated to this sector. Of course that along with assuring financial resources a material and human base was settled that enhances a rich research activity used for self-financing.

Developing countries try to adapt through different reform measures plating old and new model of organization in superior education.

Contradictions and tensions in the education framework are very big and they influence both teachers and students but also economic and social environment.

In order to continue the academic activities at the highest level, in the actual competitive environment, teachers are forced to assume supplementary roles that imply more didactic and administrative responsibility imposed by constant reduction of resources (both material and human). Constant competition demands obtaining external finance for research, demands showing its importance for society, publishing researched results in the most important magazines in the world, the participation at research contracts, a higher place in the top of the universities but also maintaining excellence in teaching. These expectations are enormous, in a moment that rewards for such efforts are decreasing, having as result an increase of stress incidence of teachers and lack of enthusiasm in performing teaching and research activity.

Frequent law changes and periods of organizational restructuration tend to bring a heavy load on academic teachers, not only regarding the frequency of modification, but also regarding the security of the job. Budget constraints have continuously affected the academic level and on the salary scale they were constantly under the level of other professions, this having a great impact on how they perceive the appreciation and reward of their work.

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