Sustainable Development and the Insertion of Higher Educated Unemployed People on Romanian Labour Market

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Abstract

Considering the objective of sustainable development in the context of higher education, the aim of this paper is to describe the behavior of higher educated unemployed people from Romania based on their previous status on labour market. Poisson models are employed to explain the evolution of the number of higher educated unemployed people from Romania during 1990-2017, knowing their previous status on labour market. As expected, the unemployed people with higher education who previously worked have 1.3% fewer chances to remain unemployed compared to the unemployed with higher education who have never worked before. Therefore, the people who recently graduated need more support to better integrate on labour market.

1. Introduction

The concept of "sustainable development" applied at the level of university education implies the management of specific activities and processes, consistently pursuing the fundamental and long term objective of increasing the quality of services provided by universities. These objectives will eventually materialize in the graduates of these universities, who are well trained, both theoretically and practically to meet the real demands of the labor market, which are constantly changing as a result of the technological progress in all fields. That is why education plays an essential role for the good insertion of graduates into the labor market, where specialists with appropriate qualifications from the theoretical and practical point of view are required, even during university studies. The process of globalization requires a new positioning of universities in the social and economic environment in all the countries of the European Union, because the economic development of a country is directly linked to the available human resources (Andrei *et al*., 2010). From this perspective, it is useful to integrate higher education graduates as much as possible into the labor market. In this economic, political, social and cultural space, competition appears as a direct consequence of the free movement of highly qualified workers (Crețu, 2010).

Good integration of higher education graduates contributes to the achievement of sustainable development, but Romania faces problems of integration into the labor market of people with higher education. In this context, based on Poisson models, we will describe the evolution of the number of unemployed persons with higher education in Romania, depending on their previous status on the labor market. After a brief presentation of the importance of education in achieving sustainable development, we will present the methodology and the main results of the empirical analyses.

2. Education as a means of achieving sustainable development

In the 2007-2013 Human Resources Development Operational Program it is pointed out that sustainable development, being a human development, can only be achieved under the conditions of man-environment relation. Ensuring effectiveness and economic progress depends on adjusting this relation. In balanced societies, human potential has a culture of education that regulates both attitudes and actions toward other individuals, as well as towards oneself. This is difficult to achieve in societies with certain economic, cultural, educational imbalances As Roth and Thum (2010) have shown, low-educated human resources also have lower chances to integrate into the labor market and increase productivity. That is why the structure of society is extremely important, as in a low-educated society with a poor quality of the population it is necessary to intervene through appropriate educational policies.

The human-environment relationship (regardless of the social, academic, economic, political, cultural environment) was debated for the first time in 1972 at the first ONU Conference on the Human Environment, gained consistency in 1985, following the debates of the World Commission on the Environment Development and was affirmed in the Operational Program Human Resources Development 2007-2013. The sustainability issue, which was part of the debate agenda of the World Conference on Environment and Sustainable Development in Rio de Janeiro (1992), has finally become a political objective of the European Union as an integral part of the Treaty of Maastricht. And within the National Strategy for Sustainable Development of Romania Horizons 2013-2020-2030 it is highlight that, in the contemporary context of globalization, the sustainable development has ultimately gained political connotations. However, the implementation of sustainable development measures calls for good collaboration between all partner members. Practically, the sustainable development implies the responsibility of a broad spectrum of actors (Naroş, 2018). In this context, Zaman (2006) transfers the responsibility for a qualitative reorientation of development to both public and business actors. The author identifies at the level of the Brundtland report of the World Commission on Environment and Development, a fundamental objective, but considered incompatible with his directions, which provides for the recovery of economic development through the equitable redistribution of resources consumption. In addition to the objectives promoted by the 2006 Sustainable Development Strategy, which aims to improve overall quality of life for both present and future generations, and to support the community in properly managing and capitalizing both resources and the whole economic and social potential, it also covers four horizontal areas, including education (Naroş, 2015). In the case of higher education, the unity and collaboration of all actors involved in the educational act are needed to ensure the stability, balance, equity, solidarity, the cultivation of open relationships for knowledge, information and active involvement in order to guide the graduates on the labor market, and to attract social partners and the business environment for a constructive partnership (Orţan, 2002).

The multitude of definitions of sustainability is given by the complexity of the concept, which becomes in time the apanage of permanent scientific debates from a variety of perspectives (Zaman, 2006). Defining and analyzing the concept of sustainable development can be achieved from the perspective of permanent education, the foundations of which are also those of an economic nature identified at ideological level (a developed economy can be a model and an argument for the expansion of permanent education at all levels of social development, the ultimate goal of which is to maintain and improve the quality of life) and institutional (economic development, and in particular the transition to a knowledge-based economy have led to profound changes in the social division of labor, education as organizing structures of permanent education, and finally, alternative solutions as opportunities for professional development of all social actors were requested). These opportunities are materialized in the specializations offered at one point in time (Cristea, 2010).

Sustainability can be seen as a new model of the sustainable university as it provides continuity, enrichment of the educational programs, an open and optimistic reporting to the learning situation and permanent feedback between teacher and student. The civic attitude towards future generations is supported by the moral responsibility to enrich, to prepare the framework for future generations to develop appropriately.

The objectives of sustainable development and the labor market have been in the attention of the European Council since 2000 with the Lisbon Strategy, which was renewed in 2005 by the European Council in Brussels. The integrated guidelines of this strategy have been based on the economic growth and employment. Using the experience gathered through the implementation of previous strategies and holding employment and the economic growth among its objectives, the Europa 2020 Strategy aims to create a smart, sustainable and inclusive economy. These priorities are achieved through the joint effort of the EU Member States to achieve a high level of labor productivity, employment and social cohesion. The new type of growth promoted by the Europe 2020 Strategy (smart sustainable growth and favorable to inclusion) is achieved among others through measures in the field of education and research: enhancing life-long learning and skills growth, supporting research and innovation, effective use of the digital economy and smart grids (EC, 2010). Through the guidelines it follows, the Lisbon and Europe 2020 Strategies can be considered as an integral part of sustainable development at EU level, though these strategies and sustainable development are aimed at mutual stimulation, complementary actions, and different instruments with the same results.

3. The empirical research on the unemployed with higher education in Romania

3.1. Methodology

The goal of building Poisson models is to explain the phenomenon of unemployment among graduates of higher education, to suggest some recommendations for their better insertion into the Romanian labor market.

Poisson regressions model the number of occurrences of an event. In this case it will be considered that the event is becoming unemployed and the number of the unemployed with higher education is the dependent variable. This type of

model is useful in this case, because the data set is small and the assumptions on which the traditional linear regression model is based are not verified in practice.

It will be considered a dummy variable that indicates whether the unemployed with higher education has never been employed (value 0) or he has been previously employed (Value 1). The explanatory variables are: the number of graduates of higher education and the effective of the teaching staff in higher education.

From an economic point of view it is more relevant to model the incidence rate, which is the rate of occurrence of events (Liu *et al.*, 2016). The dependent Y variable follows a Poisson distribution, and the expected value (E-expected value) is equal to the average of the variable:

$y_i \sim$ Poisson (μ_i), i=1,2,...,N

$E(Y) = \mu$

The explanatory variables (X_1, X_2, ... X_k) can be continuous, categorical or a combination of continuous and categorical variables. We can consider the *Y/t* variable as a dependent variable, where *t* is a time, space or other interval. *Y/t* is the incidence rate of the event.

The model is thus represented:

$$g(\mu) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_k x_k = x_i^T \beta \tag{1}$$

The Poisson model can be generalized by considering unobserved heterogeneity for an observation *i*.

3.2. Results analysis

For the construction of Poisson models, data was extracted from the Tempo database of the National Institute of Statistics for the following variables for the period 1990-2017: the number of unemployed with higher education who have previously worked, the number of unemployed with higher education who have never worked, the number of university graduates and existing teaching staff in higher education.

The series data on university graduates, teachers and faculties are obtained on statistical research conducted at the beginning of the academic year in higher schools.
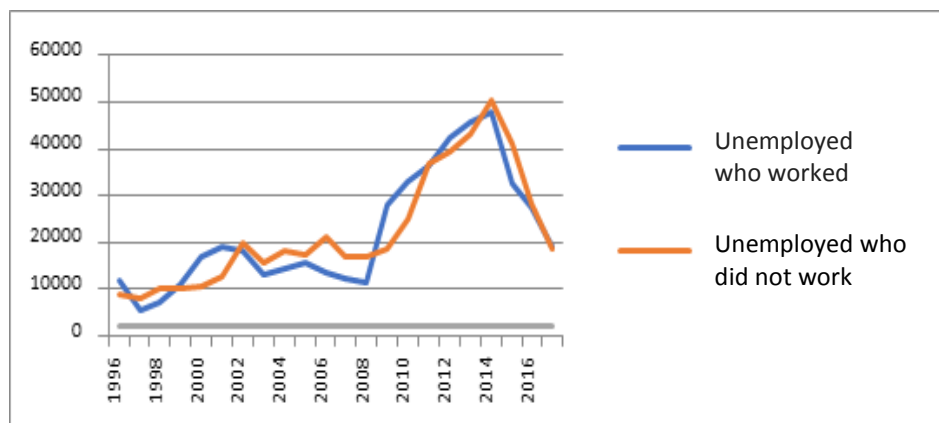

Figure 1. Evolution of the number of unemployed with higher education who worked or not before in the period 1996-2017

As shown in Figure 1, there are periods when the number of unemployed who have never worked exceeded that of the previously unemployed: 1997-1998, 2002-2008, 2014-2016.

Against the background of the economic crisis in Romania, in 2009, the number of unemployed with higher education who have worked previously increased sharply by 238.72% compared to 2008. During the recent economic crisis, a large number of companies restricted their activity and some even went bankrupt, which meant that many employees were bankrupt. The negative consequences of the economic activity decline were observed especially at the level of the non-agricultural sector, where there are also the highest rates of employees with higher education.

Initially, a Poisson model was estimated to explain the evolution of the number of unemployed with higher education in Romania depending on their previous status on the labor market (they have worked/ have not worked before), the number

of university graduates and the teaching staff in the higher education. The coefficients of this model are statistically significant at a significance level of 5%. Unemployed persons with university degrees who have worked between 1990 and 2017 have a 1.3% less chance of remaining unemployed compared to the unemployed with higher education who have never worked before (Table 1).

Table 1. Poisson regression model to explain the evolution of the number of unemployed with higher education in Romania (1990-2017)

Variable	Incidence rate ratio	z calculated	P>|z|
Previous status on the labor market	0.9877	-5.78	0.000
No. graduates	0.9999	-449.20	0.000
Teacher in higher education	1.000	250.65	0.000
Constanta	9608.117	547.67	0.000

Source: own calculations

However, this result has to be analyzed with caution and there is a high probability that the incidence rate ratio will be underestimated, since the Deviation Conformity Test indicates that the model has high chances to be incorrectly specified.

Table 2. Model of negative binomial regression explaining the evolution of the number of unemployed with higher education in Romania (1990-2017)

Variable	Coefficient	Standard error	z	P>|z|
Previous status on the labor market	-0.012	0.0021	-5.78	0.000
No. graduates	7.34×10^{-6}	1.63×10^{-8}	-449.20	0.000
Teacher in higher education	0.0001	7.53×10^{-7}	250.65	0.000
Constanta	9.170	0.0167	547.67	0.000

Source: own calculations

The results of the estimates in Table 2 indicate that the expected number of unemployed who have previously worked is lower than the expected number of unemployed who have never worked with 0.012 units. The result indicates that the unemployed with higher education who have worked previously have a higher chance of finding a job faster than the unemployed with higher education who have never worked. There is a great chance that people with higher education will first cross a period of unemployment, then be placed on the labor market, the result being consistent with the results of microeconomic research based on the questionnaire (Naroş, 2018). Against the background of lack of work experience after graduation there is little chance of immediate employment on the labor market. The influence of the number of graduates and the number of teaching staff on the number of unemployed with higher education is very low. When increasing the number of graduates per person, the logarithm of the number of unemployed decreases with a very small value, close to zero. The results are consistent with those obtained by Bassi and Galiani (2009) for a sample of 20-30 year olds in Chile, the authors pointing to a more difficult insertion of graduates who have not worked before.

4. Conclusions

On the basis of empirical results in the case of negative binomial regression, several recommendations can be made: it is useful to integrate students into the labor market before completing their studies in order to gain the necessary experience at the workplace, incentives should be provided for companies that employ fresh graduates with no previous work experience, several internships could be useful for employers to enable them to select future employees.

Some suggestions in this regard are provided by Cat and Others (2012) that emphasize the need to reduce employment in the informal sector and provide incentives for motivating young people to work legally: reducing barriers to employment related to work experience and the trial period, decrease of administrative costs and procedures, efficiency of bureaucracy, especially for SMEs, diminishing labor market rigidities by encouraging fixed-term contracts, temporary employment, individualized work program.

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