

STRATEGIES AND PERSPECTIVES REFFERED TO THE ANALYSIS AND DEVELOPMENT OF THE PREUNIVERSITY EDUCATION SYSTEM FROM ROMANIA

Lavinia Ștefania ȚOȚAN¹
Valentin Sorin POPESCU²
Dana Petruța Vasilica BĂLAN³

ABSTRACT :

The paper presents the actual state of the preuniversity education system from Romania, provided, also, solutions and strategies for its development. It describes also th evolution of the preuniversity education system between 2000 and 2015 and also the impact of the european funds in increase of quality for the preuniversity education system. There are realised also prognosis for indicators between 2016 and 2020.

KEYWORDS: *education, analysis, prognosis, strategy*

JEL CLASSIFICATION: *I21, I20, I25.*

1. INTRODUCTION

European Union states have investigated several methods for forecasting employment to identify future labor needs that take into account occupational, educational and training factors that influence the supply and demand of jobs.

Several countries in Eastern Europe are interested in developing such models in order to provide employees with adequate training labor market required. Considering the single labor market requirements and increasing international mobility, states must develop models that can be comparable to forecasting methods for training and qualification with the existing EU Member States. This objective requires regular foresight medium term that will extend the timeframe by decision makers that can be applied to the entire national economy, taking into account factors such as future investments in the economy, forecasts of income and labor productivity and, of course, technological exchanges. The development of such predictions will require the use of quantitative and qualitative methods that will systematically organize and integrate data and analysis on education and vocational training, as well as occupational needs. The Netherlands and France are two European countries who have extensive experience in occupational and educational forecasts, Ireland is the country that joined them most recently. France has the longest tradition in predicting occupational and educational needs, followed by the Netherlands and Ireland, which recently have developed expertise in this area. More broadly, occupational and educational foresight has gone through two phases (Eijs, 1994).

¹ University of Economic Studies , Bucharest, Romania, laviniatotan@yahoo.com

² Ministry of National Education, Romania, valentinsorin@yahoo.com

³ University of Economic Studies , Bucharest, Romania, balan.dana29@yahoo.com

2. STATE OF ART

The first phase lasted from the end of World War II until the first oil crisis, and the second phase covers the period from early 1980 to the present. Denison (1962) believes that employees with higher education are of particular importance on the quality of the workforce engaged. This led to increased demand for forecasts relating to the structure of employment by occupation and by level of education needed by those who planned the herds educational and employees with a certain skill, but also people whose responsibility was to achieve an occupation as possible full and lifelong training (Hughes, 1994).

It is quite clear that the development of occupational forecasts in the four Member States of the European Union has two main roles: a political role and informational one. Political role was to provide information to the employment and training, information on trends in employment for groups of occupations. Their role was to provide information data related to trends in employment for a large number of occupational subgroups and levels of education and training, to help the labor market to become more transparent for employees, students, etc. These users were interested in achieving these predictions occupational substantiate enrollment quotas for the next period, so the number of students enrolled in the various programs of education and training is consistent with the needs of the labor market so that excess supply and demand can be minimized in the occupational spectrum. In the past, it was very difficult as demand for labor by level of education to be adequate demand for labor by occupations, due to the lack of a clear link between education and occupations outside professional and technical occupations for which they were requested specific educational qualifications (Hughes, 1994).

It considered that the size of observations is acceptable, more than 5 observations for each independent variable. Multiple regressions allowed determining the extent and nature of the relationship between the dependent variable or endogenous number of students enrolled in vocational education, examples: the number of teachers involved and professional education units. Interpretation of the regression function can be viewed from three perspectives: the importance of independent variables, types found relations or relations between independent variables.

Employment projections are made by the Political Studies Center (PSC), a research center at Monash University dealing with quantitative analysis of issues relevant to economic policy in Australia. The PSC has been used since 1994 to provide government agencies responsible for vocational training and education in Australia. COPS projections are made in the economic model that integrates a macro (for aggregate employment determination), an applied general equilibrium model (for determining employment in the industry) and an extension of the labor market (employment in professional occupations determination). Monash role was to provide a framework for incorporating relevant data in the prediction. Monash includes a large set of data, national accounts, input-output tables, census, and statistics of foreign trade, income and expenditure surveys. In terms of future labor demand projections relevant exogenous variables in the model are integrated into a model of balance, example Australian Bureau of Agriculture and Resource Economics. A Monash forecast demand for labor through five stages. Starting point is the macro scenario which provides forecasts of GDP that result from the Five Year Business Outlook. In the second stage, GDP and its components are converted into tables output and employment by type of industry projections taking into account structural changes on the demand for labor. Thereafter, national projections for output and employment tables are translated into regional projections (56 statistical divisions). The next step is forecast employment for 340 occupations in the Standard Classification of Occupations in Australia. Employment projections are provided on a disaggregated level occupation declined, representing a database of information very well founded. To conclude, the Australian methodology for forecasting employment is informative relevance of a practical and widely used for planning economic policies (Moretti, 1999).

3. ANALYSIS OF THE EDUCATIONAL SYSTEM FROM ROMANIA

We used for our analysis as dependent variable (number of pupils enrolled in the professional system) and as independent variables (number of professor and number of professional schools) between 2002 and 2015.

Table 1. The main statistical indicators

	ELEVI_INSCRI SI	PROFESORI	UNITATI_INVA TAMANT
Mean	165353.1	3584.429	69.71429
Median	204794.5	5352.500	82.00000
Maximum	289494.0	6290.000	147.0000
Minimum	12382.00	64.00000	5.000000
Std. Dev.	112215.9	2790.618	51.21362
Skewness	-0.262927	-0.391456	-0.029544
Kurtosis	1.329146	1.278227	1.744080
Jarque-Bera	1.789827	2.086847	0.922149
Probability	0.408643	0.352247	0.630606
Sum	2314944.	50182.00	976.0000
Sum Sq. Dev.	1.64E+11	1.01E+08	34096.86
Observations	14	14	14

Source: author's calculation

It can be observed that the evolution of pupils from the professional education system between 2002 and 2015 increased between 2002 and 2006 and after that began to decrease. The others indicators decreased also in the analyzed period.

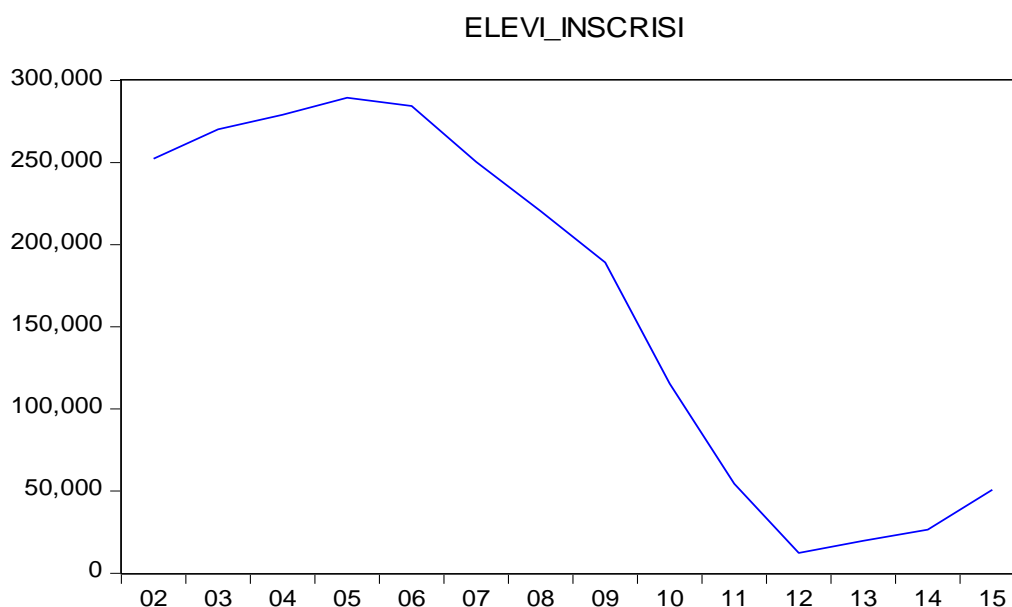


Figure 1. The evolution of pupils from the professional education system between 2002 and 2015

Source of data: National Institute of Statistics (2015)

4. THE MAIN RESULTS

The regression model which reflects the relationship between number of pupils enrolled in the professional educational system, the professor which teach them and the number of professional school is significant statistical.

The main results are presented in the table 2.

Table 2. The main results of the regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PROFESORI	49.31655	2.524996	19.53133	0.0000
UNITATI_INVATAMANT	-631.7338	137.5865	-4.591540	0.0008
C	32622.36	6302.807	5.175847	0.0003
R-squared	0.987790	Mean dependent var		165353.1
Adjusted R-squared	0.985570	S.D. dependent var		112215.9
S.E. of regression	13479.73	Akaike info criterion		22.04317
Sum squared resid	2.00E+09	Schwarz criterion		22.18011
Log likelihood	-151.3022	Hannan-Quinn criter.		22.03050
F-statistic	444.9635	Durbin-Watson stat		2.084803
Prob(F-statistic)	0.000000			

Source: author's calculation

The three coefficients are significantly statistics. If the number of professors from the professional educational system increases with one person, then the number of pupils will increase with 49 persons. If the number of professional school increases with one school, then the number of pupils will decrease.

5. CONCLUSIONS

The updated model includes projections HELSEM0D 2020. The results of this model the values projected balance of workforce education on health profiles. Offer projections for the medium term (M) represents the average rate of graduation in 1990, while H (high) and L (low) match those rates somewhat above / below this level. In terms of demand for labor, they are made three scenarios corresponding to different assumptions made about economic growth, with an average value representing growth in 1999-2000. The balance comprises the difference between labor demand and labor supply in all 3 scenarios: H, M and L. scenario "high" shows an excess of labor among physicists of 777 people, while scenario "low" a deficit of workforce of 2436 people.

LAERARMOD model divides teachers into four categories: kindergarten teachers, primary school teachers and general school teachers and university professors. Last updated LAERARMOD model is based on information about people who occupied the teaching profession, making projections until 2015, starting from the fourth quarter of 2000. The economic factor taken into consideration is the number of teachers per student. In addition, the model takes into account the planned policy actions and the need for substitute teachers. Where supply exceeds demand, the model does not account for the probability of graduation of new graduates who will work in specialization absolved them.

REFERENCES

- Barro, R. and Lee, J. W. (1994), *Sources of Economic Growth*, Carnegie-Rochester Conference Series on Public Policy, 40, pp.1-46.
- Baumol, W.J. (1952). *Welfare Economics and the Theory of the State*, Bell for the London School of Economics;
- Becker, Gary S. (1964). *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education*, The National Bureau of Economic Research, The University of Chicago Press, 1964, trad. Capitalul Uman, Ed. All, București, 1994.
- Becker, Gary S. (1994). *The economic Approach to Human Behavior*, The University of Chicago, trad. Comportamentul uman: o abordare economică, Ed.All, București,
- Dekker, R., A. De Grip și H. Heijke (1994), „Indicating the Future Labour Market Prospects of Occupational Groups and Types of Education in the Netherlands” in Hans Heijke (editor), *Forecasting the Labour Market by Occupation and Education: The Forecasting Activities of Three European Labour Market Research Institutes*”. Dordrecht: Kluwer Academic Publishers,.
- Denison E.F. (1962). *The Sources of Economic Growth and the Alternatives Before Us*, New York, Committee for Economic Development, Supplementary Paper, no. 13, 1962.
- Eijs, P.v. (1994). *Manpower Forecasting in the Western world: The current state of the art*, Maastricht: ROA –RM-1994/1E.
- Endlich, N. A. (2001). *An investigation of the nexus between strategic planning and organizational learning*, dissertation paper, Faculty of the Virginia Polytechnic Institute Falls Church, 2001, Virginia, SUA.
- Hughes, G.,(1991) *Manpower Forecasting: A Review of Methods & Practice in Some OECD Countries*. Dublin: Economic and Social Research Institute, Report No. 1 FAS/ESRI Manpower Studies, 1991,
- Moretti, E. (1999), *Estimating the External Return to Education: Evidence from Repeated Cross-Sectional and Longitudinal Data*, Berkeley, University of California.
- National Institute of Statistics, (2015). The evolution of pupils from the professional education system between 2002 and 2015, retrieved from <http://www.insse.ro/>