MODELING SYSTEMS FOR SOCIO-PROFESSIONAL INSERTION PRODUCTIVE LABOR MARKET

Ph.D. Lecturer Loredana Maria PĂUNESCU
Petroleum&Gas University of Ploiesti, Romania
E-mail: loredana.paunescu@yahoo.com

Abstract: In recent years, it found that universities attach great importance to participation in projects relating to the insertion of graduates in the labor market, both as coordinator and partner institution allocating significant human and material resources for the successful development of these projects. In this respect, the analysis carried out we started to focus on one of the problems in Romania, namely, that today, few graduates fail to integrate rapidly into the labor market. In fact, it is known that the labor market is the relationship between young graduate and employing companies. However, job security, one of the important conditions for graduates is endangered by the current economic crisis. Job loss is one of their main concerns given that supply is more limited than at the time of their enrollment in the labor market. Also, high rates of unemployment indicate their main difficulties that they experience in graduation-work transition. Better education and access to education for gaining greater stability in the labor market would allow natural insertion in the labor market. Also, high rates of unemployment indicate their main difficulties that they experience in graduation-work transition. In recent years, many young people graduate from university increased significantly in recent years. Of course we can not isolate statistical data quality workforce, amid the transformation of higher education in mass education, which often hide masked youth unemployment by delaying the integration into the labor market and further studies. However, this statement regarding the level of education required for a post became widespread labor market in Romania, in the sense that, even for jobs that would normally be performed by persons with secondary education is required diploma University studies. Also, in recent years we have witnessed an excess of demand for jobs in relation to the supply of the market. The current economic situation and the situation on the labor market leads university graduates to settle for work that you have, even if it does not meet their expectations.

Key-words: model, socio-professional insertion productive, education, skills, training.

JEL Classification: A, A2, A23.

1. Introduction

Higher education creates prerequisites for increasing the share of active population with higher education is an important strategic objective for a more competitive labor market in Romania and the Romanian economy in general.

Labor market flexibility plays an important role in the absorption of newcomers. This shows the ability of the labor market to respond to changes occurring in the economic and social environment. In recent years, this has been at the center of attention with regard to better adapt to the new change. This implies a certain structure of the education system.

2. The actuality of research

News approached theme is revealed by an analysis of the insertion of graduates on the labor market, important in the current economic analysis who knows fluctuations in unemployment, both in general and among them. Also, the fact that in recent years there has been a significant reduction in the degree of entering the labor market for graduates trained in the universities of South Muntenia, made us turn to the labor market, analyzing the capacity of education university linked to employers' expectations.

3. Obiectives

The objectives of the research were:
O1: analysis of labor market development scenarios of the last ten years, the current situation; O2: better advice on labor market insertion of young people eager to find a job in the field of specialization.

4. Material and methods

The research methodology used in elaborating scientific achievement is evidenced by the following:
- The proposal aims in research;
- Making a plan of analysis;
- Analysis and interpretation of data;
- Correlation performed using the proposed model.

5. Experimental results

The aim of this experiment is to identify possible correlation between the national insertion degree and the other statistical relevant market indicators. Some data mining techniques are used to discover possible relations among these indicators.

The goal of data mining techniques is to extract patterns and knowledge from large amount of data. The patterns may include dependencies (the evolution of some parameters may be direct or indirect related), generating groups of data records or identifying unusual records. Furthermore, these results may be used by a decision support system in order to obtain more accurate prediction.

Decision trees are one of the most commonly used data mining method. The goal of a decision tree is to predict the target variable values based on the evolution of some input field. Each interior node represents an input variable and each leaf is a possible target value. The decision tree can be read as an IF-THEN rule. The general form is *if condition then decision,* where condition contains the independent variables possible values and the condition represents a dependent variable classification.

In this study there are designed four decision tree models in order to discover possible relationship among the national insertion degree and other market indicators.

6. Results and discussions

In this experiment, there were built four decision tree based models to classify and possible predict the value for the national insertion degree based on other market parameters recorded values. In this analysis are synthetized all the input variables (selected from this data set) used by the models. There are no variables to be considered important by all four models; every model using a different algorithm selected different inputs. Three variables are taken into consideration by two models: the year (anul), the higher education young population rate (proportion of young people with higher education) and higher education population unemployment rate (unemployment rate of young people with higher education). Other inputs presented in Table 1 are selected only by a single algorithm.

All four models were compared using three statistical parameters: correlation coefficient, Mean Absolute Error (MAE), and Root Mean Square Error (RMSE) and the time taken to build model. The correlation coefficient reflects possible relationship among the variables. It has values between -1 and 1 (the closer to 1 or -1 the stronger is the correlation among the fields). MAE and RMSE measure the classification error (distance between the actual and the model predicted values); their values must tend to 0.

A decision table in Weka is a class for building and using a simple decision table majority classifier. Each decision corresponds to a variable, relation or predicate whose possible values are listed among the condition alternatives.

Table no.1. The Decision table

Rule number	Proportion of young people with higher education	Degree of insertion nation value
1	(11.02-inf)	0.545
2	(10.64-11.02]	0.567
3	(9.88-10.26]	0.578
4	(8.74-9.12]	0.586
5	(8.36-8.74]	0.588
6	(-inf-7.98]	0.589

Therefore, Table 1 can be read as follows. If the higher education young population rate is higher than 13.02 than the national insertion degree is 0.545; if higher education young population rate is between 10.64 and 11.02 than the target variable is 0.567 etc.

In this experiment, there were built four decision tree based models to classify and possible predict the value for the national insertion degree based on other market parameters recorded values.

In the research paper, we turned to employment at national and regional level which, statistically, can be analyzed in terms of indicators, considered as indispensable tools in the design, implementation and evaluation of education policies. We therefore insist on the ability to synthesize indicators relevant, reliable and comparable on a social system so complex as the education system.

A study on the labor market in Romania requires both knowledge processes, realities and trends across the country, and knowledge of phenomena manifested in this market over the years. The labor market in Romania is influenced by economic and social system of politics and the environment, so supply and demand on the labor market often have different tendencies, leading to a tense labor market

In recent years, the labor market has undergone a number of changes, so that both employees and employers have a new perspective regarding labor market insertion.

At present, the labor market is characterized by a high level of caution, both in terms of employers and employees.

Employers are increasingly careful in choosing suitable candidates, and offer jobs generally lower. Candidates will be increasingly more competitive, since it will increase specialization and selection criteria are becoming more numerous.

Also, after analyzing the labor market, it found that labor is not homogeneous, but differentiated on a broader or narrower range of occupations.

The subject brought into discussion is of national interest, interest that is served by developing this paper as: lack of a perfect transparency, labor is not perfectly informed, information about job vacancies and about working conditions is not readily available or free. Therefore, between the participation rate and the employment rate there is a perfect similarity. To increase the participation rate may witness a drop in the employment rate due to the rise in unemployment.
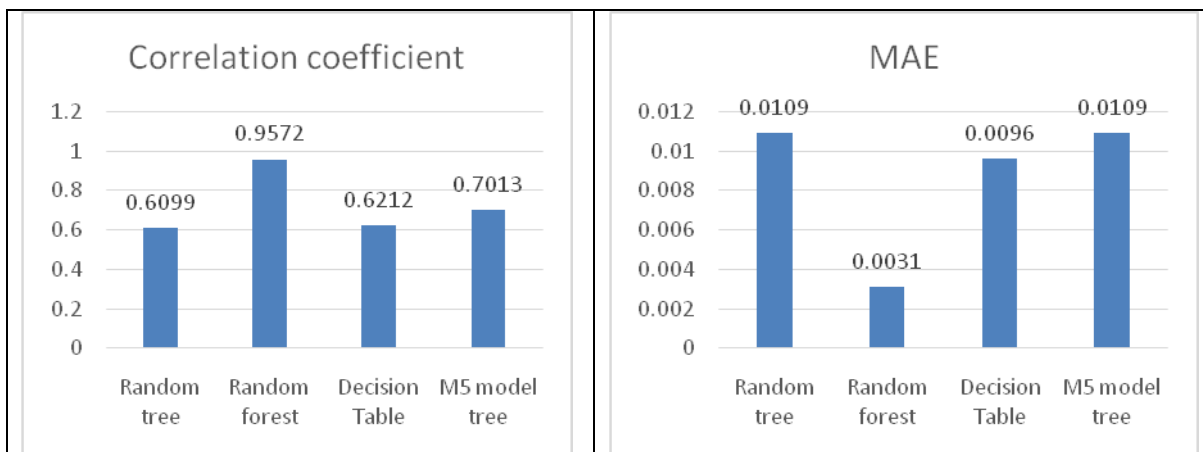
The graph 1.Corelaţia statistics parameter values that were based four methods /Analysis and interpretation of data; correlation performed using the proposed model.

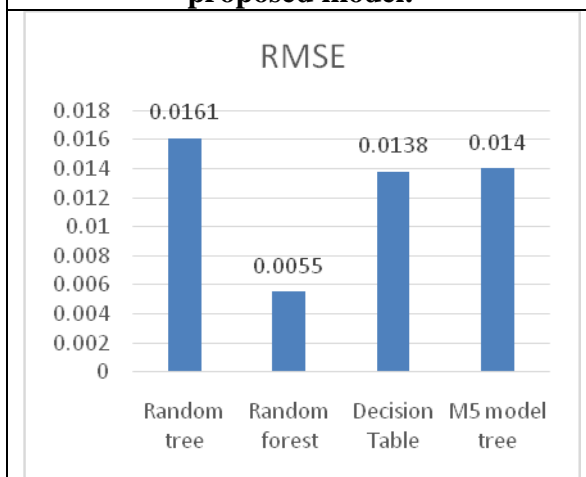
Figure 2. Results of the analysis MFA

Figure 3. Results of the analysis RMSE

There can be sad that there is an universal data mining algorithm to predict the national insertion degree, because the computational intelligence techniques depend on the database used. Knowing the process of entering the labor market for young graduates, and features/determinants of this process became a priority both in the formulation of employment policies and of the education.

It is possible that in the expansion phase of the economic cycle or boom, amid increasing general prosperity, increase the attractiveness of the exercise of an activity remunerated, so that some of the legal working age, but withdrawn dintr- for some reason the labor market, willing to rejoin the active population category, increasing labor supply at a rate higher than the increase in employment. Equally possible is that new entrants or re-enter the no longer find work suitable to their preparation.

7. Conclusions

The research results will form a working tool which shows that appropriate measures to improve the current situation and recommendations to facilitate their integration into the labor market.   The analysis made shows that offer jobs for young people is uncertain, largely as a result of changes in the school system, acceptance of people working in jobs below their training, birth rate, emigration, unemployment,

hardship increasing while maintaining and even revealing a pessimistic psychology. Labor required to be highly satisfactory and qualified to be flexible and efficient to be stable and fair. Increased labor mobility could improve the economic position of young graduates.

Authors'contributions. Made personal contribution to research is to analyze the relationship model of insertion of graduates in the labor market.

To start scientific research sources used for research were studies and research based on a rich bibliography of articles and papers (attached work), consulting Web site and databases Eurostat, National Statistics Institute (INS), the National Prognosis (CNP), Statistical Yearbook, Eurostat, the National Agency for Employment (NAE), documents from the universities of South-Muntenia and participation in scientific and professional dedicated analyzed domain.

Research limitations. Scientific research undertaken did not have a linear development, due to discrepancies between statistics.

Proposals and recommendations. I think it would be appropriate to rethink education policy, given the changes in the economic and social, so that there is a correlation between the requirements of labor market trends and types of training provided by the education system through training of graduates highly skilled necessary social and economic development.

Starting from the limits outlined above, one can realize that the analysis can be completed as appropriate the assumption of future directions, namely: enrichment research methodology and other methods in order to increase the objectivity of this research and expand the horizon research.

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