

Review of scientific advisor on the work  
**“Exploratory data analysis and university performance assessment  
using DEA and SFA modeling”**  
by *Vadim Glukhov*

Scientific research of Vadim Glukhov is devoted to development of ranking for Russian universities presented in all world university rankings using modern benchmarking approaches. In the work two main methods of modeling are used – Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). Both methods model the efficiency of a firm or any other unit in the market based on some data characterizing the evaluation of universities activities. The first one uses mathematical programming method, the second one – methods of economic theory and econometrics. The problem of evaluating efficiency of the market units has many applications in economics, management and in any area in which the so-called decision making units (DMU) are needed to be ranked and for estimation of productivity of management in DMUs.

The work contains three chapters, introduction, literature review, problem statement, conclusion, bibliography and appendix. In Chapter 1 the theoretical part is presented. The ideas of DEA and SFA modeling are provided in this chapter. In Chapter 2 the author demonstrates datasets created by him for modeling. The sample of universities ranks and their characteristics is described. The correlation of universities ranking is also examined here. Vadim consequently describes the inputs and outputs of the models with a deep motivation. Chapter 3 contains the results of DEA and SFA modeling of efficiencies of the top universities in Russia. The ideas for future research are also given in this chapter. It is interesting that independently of the places in the ranking, the top universities demonstrate almost similar efficiencies. All methods proposed in the work are realized in Python and R. The code of the program is provided in Appendix.

The work is well written and has a clear structure. Vadim Glukhov demonstrated a high level of researcher’s skills, the ability to formulate and solve complex applied mathematical problems. In my opinion, the level of analysis made by Vadim is high and his

scientific research work “Exploratory data analysis and university performance assessment using DEA and SFA modeling” is worth an excellent mark.

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20.05.2020.