

A Review Report

on the competition for the occupation of the academic position PROFESSOR in the Plovdiv University Paisii Hilendarski in the State Gazette, issue 57 of 26.06.2020 in the field of higher education: 3. Social, economic and legal sciences, professional field: 3.8 Economics, scientific specialty: Finance with a single candidate Assoc. Prof. Stanimir Ivanov Kabaivanov, PhD.

by a member of the Scientific Jury: Prof. Dr.Sci. Ivan Ganchev Ivanov – Faculty of Economics of the Sofia University St. Kl. Ohridski.

1.General description of the materials presented

By Order No. P33 – 4134 of August 25, 2020 of the Rector of the University of Plovdiv, Paisii Hilendarski (PU), I was appointed as a member of the scientific jury for conducting the announced in the State Gazette, issue 57 of 26.06.2020 competition for occupation of the academic position of ‘Professor’ in the field of higher education 3. Social, economics and legal sciences, professional field: 3.8 Economics, scientific specialty: Finance. The only candidate for the competition is Assoc. Prof. Stanimir Ivanov Kabaivanov, PhD, under a permanent employment contract at the Faculty of economics and social sciences, Plovdiv University Paisii Hilendarski. At the first meeting of the Scientific Jury I was selected as the reviewer of the applicant.

The presented set of materials on the competition in electronic and hard copy is in accordance with Art. 3, 3 of the ZRASRB and Art. 60, paragraphs 1, 2 and 3 of the PPZRASRB. The applicant meets the minimum national requirements under Art. 3, 3 of the ZRASRB and Art. 60, paragraphs 1 and 2 of the PPZRASRB. I accept the submitted reference for original scientific contributions in accordance with Art. 60, paragraph 3 of the PPZRASRB.

In a long list of scientific publications in section 3 are described 20 scientific publications which are important in the competition for a professor. All of them are written in English and all are co-authored. In 7 publications the author team consists of two persons - Kabaivanov and his co-author, in 11 publications the author team consists of three co-authors and 2 with more than three co-authors. From this list I exclude publications 12_14 in which I am a co-author and a group of 12_12 (9 pages) and 12_15 (11 pages), in which the co-authors are respectively 4 and 6. In the rest of the articles – 7 with two co-authors and 10 with three co-authors I accept that the co-

authors contribution is equivalent. I will comment the scientific contribution of these articles.

Towards the materials for the competition are applied the monograph 'Intelligent systems and self-learning algorithms for analysis of financial instruments' and textbook 'Evaluation of financial instruments with R'.

The proposed materials – publications and one monograph have not been used by the candidate in previous competitions: to obtain the educational and scientific degree 'Doctor' and to hold the academic position 'Associate Professor'.

Towards the materials for the competition additionally are included 24 articles published in non-peer-reviewed journals with scientific review or published in collective edited volumes, which I accept as a means for popularization of candidate's scientific achievements.

Supervision of PhD students – one defended his dissertation in 2017, currently the candidate is the second supervisor of a PhD student from St. Galen, and is the supervisor of two others PhD students.

The studied scientific problems in the presented scientific publications are within the scientific specialty of the announced competition in finance. The scientific publications clearly outline the main goal of the candidate's research work – theoretical search and applied implementation of innovative approaches in financial data analysis.

2. Short biographical details of the applicant

Associate Prof. Dr. Stanimir Ivanov Kabaivanov was born in 1979. He received his master degree with a specialization in financial management at the Plovdiv University Paisii Hilendarski in 2003. He defended his doctoral thesis in 2010 in finance Plovdiv University Paisii Hilendarski with a dissertation topic "*Valuation of investment portfolios using artificial intelligence systems*". He is working as an assistant professor in finance in Plovdiv University. In 2014 he was habilitated as Associate Professor in the finance at the same workplace. Assoc. Prof. Dr. Stanimir Kabaivanov has a 9-year teaching experience at the Plovdiv University. Since 2015 he is a dean of the Faculty of economics and social sciences. He has conducted exercises and lectures on Corporate finance, Econometrics, Modern methods of investment analysis, Applied analysis of financial data.

3. Scientific Articles

The main scientific contributions of the candidate can be divided in the following areas:

3.1. Realization of detailed researches on effectiveness of management decisions in various fields [12_1, 12_9, 12_16, 12_10, 12_2]. These publications have been developed by means of ‘transferring’ stochastic models applied to various financial instruments in the field of management decisions.

3.2. Research and application of mathematical modeling and statistical methods on processes in the social sciences [12_3, 12_4, 12_5, 12_6, 12_7, 12_8, 12_13, 12_19].

3.3. Creating methodologies for using methods and algorithms for big data analysis [12_11, 12_17, 12_18, 12_20] in real processes. In this field we will note the monograph ‘*Intelligent systems and self-learning algorithms for analysis of financial instruments*’.

3.1. The achievements of the publications in this group focus on the modeling of management decisions and the research on the long-term impact on the environment, natural resources and finally on the decision-making process. The beginning is set on in article 12_16 (2013), in which is analyzed a modified method of binomial tree and its application in increasing the efficiency in the decision-making process. The researches continue with methodology for improving the management of natural resources through stochastic modeling 12_9 (2017). In publication 12_1 (2019) the authors focus on the long-term impact of management decisions in environmental management. In publication 12_10 (2018) the dynamics of the Bulgarian government debt and its effect on the national economy is studied through stochastic models. In each article is described methodology for application of the respective stochastic analysis model. The methodology is original within the framework of the specific article. Publication 12_2 (2019) analyzes crypto currency markets by applying ARIMA models regarding short-term investment horizons. The contributions of the publications in this field are significant. They form a series and formulate methodologies for analysis of specific management processes by applying stochastic modeling.

3.2. Analyzes in the social sphere. At the core of this field are researches in the framework of SAHWA project, funded by the Seventh Framework Program of the European Union [SAHWA Project (funded by the European Commission under the Seventh Framework Program)]. Publications [12_3, 12_4] are leading and comprehensive. The authors study the main trends, which are manifested through social strategies, cultural models and changes in the Arab youth population. They strive to answer the question to what extent the creation of new way of life and the emergence of modern youth cultures are an indicator of socio-political change. Researches were carried out in five Arab Mediterranean countries as 10 000 young people were interviewed during the period 2016-2017. Both publications have a volume that meets the requirements of a studia and are published in a monograph by the renowned publishing house Taylor and Francis (2019). In addition to these two

studies, we must add several other publications [12_5, 12_6, 12_7, 12_8, 12_13], based on researches towards the same project, which complement the main conclusions of [12_3, 12_4]. In the publications in this direction Assoc. Prof. Kabaivanov demonstrates skills in applying methods of statistics and artificial intelligence to reveal dependencies and trends in the analysis of processes among the Arab youth population.

3.3. Development of methodologies for using methods and algorithms for big data analysis [12_11, 12_17, 12_18, 12_20] in real processes such as management of company resources [12_11, 12_18], construction of early warning systems in case of cyber anomalies and attacks [12_17], the dynamics of real estate market [12_20]. The general methodology in these publications is to build a multi-level model for understanding the real process, at the same time conclusions from each step in combination with the methods of machine learning contribute to reality understanding and creating of perspectives for the future. The main stress in the monograph is the contribution and effect of the use of machine learning algorithms to carry out researches in economics and finance.

4. Scientific Contributions

I evaluate the candidate's contributions as scientific and scientific-applied. In research work of Assoc. Prof. Kabaivanov groups of related articles stand out (for example, 12_16-12_9-12_1). The publications from the second direction are interdependent and complementary as they are based on large database obtained through interviews.

The presence of related scientific publications shows that Assoc. Prof. Kabaivanov has developed **methodology and approach** to carry out high quality researches. In the methodology implementation Assoc. Prof. Kabaivanov manages to combine the theory of stochastic modeling with modern methods, to apply it in the analysis of financial markets and to upgrade it creatively in the study of actual areas of reality. Examples in this direction are the articles [12_2], [12_16-12_9-12_1] and [12_3, 12_4].

The presented monograph and textbook confirm that Assoc. Prof. Kabaivanov possesses in depth knowledge and skills and is able to shape and present them to students in a form understandable to them.

5. Effect of the applicant's scientific activity

According to the Scopus database the scientific papers of Assoc. Prof. Kabaivanov consist of 15 scientific publications from 2011. These publications have been cited 19 times in the same database. All citations are after 2017 year, i.e. for two

years the citations are 19. The Scopus h-index of Assoc. Prof. Kabaivanov is equal to 3. It is a strong evidence of the importance of Assoc. Prof. Kabaivanov 's research. His publications have potential and I expect this value to grow rapidly. The following table characterizes publications from Scopus data base:

Two coauthors (7 papers)	Citations	Three coauthors (10 papers)	Citations
12_1 – Q3 SJR 0.16	2	12_2 SJR 0.19	
12_9 – Q3 SJR 0.16	3	12_3	
12_10 – AIP (2018)	0	12_4	
12_11 – AIP (2018)	0	12_5(2020) SJR 0.227	
12_17 – SJR 0.2	0	12_6 SJR 0.57	0
12_18 – SJR 0.2	0	12_7 SJR 0.17	6 (from 12_5)
12_20 – AIP	0	12_8 SJR 0.17	0
		12_13	1 (from 12_5)
		12_16 (2013) AIP	2
		12_19 AIP	0

6. Assessment of the personal contribution of the candidate

There is no reason to believe that the results obtained are not the personal work of the candidate and his co-authors. In terms of volume and quality, they fully satisfy, and in some cases exceed the requirements of ZRASRB, PPZRASRB and the Plovdiv University for the development of academic staff for the academic position "professor" in PN 3.8. Economics.

7. Conclusion

The analysis of the applicant's scientific and teaching activity shows that he has proven scientific contributions in the scientific field of the competition, as well as very active teaching activity. The applicant's results have been published in prestigious journals, many of which have an impact factor. The works of the candidate are well cited in the scientific literature at home and abroad. No violations were found under the competition procedure.

I strongly recommend to the Faculty Council of the Faculty of economics and social sciences of the Plovdiv University Paisii Hilendarski to choose Assoc. Prof. Dr. Stanimir Ivanov Kabaivanov in the academic position of "Professor" in the professional field 3.8 Economics, scientific specialty: 'Finance'.

15 October 2020

Scientific Jury's member

Prof. Ivan Ivanov