

OPINION

on a competition for the academic position of “professor“

In the field of higher education: 4. Natural Sciences, Mathematics and Informatics,

Professional field: 4.6. Informatics and Computer Science

Faculty of Informatics, Department of Informatics

University of Economics – Varna.

1. General information

The opinion was prepared by assoc. prof. Zlatko Georgiev Varbanov, PhD. “St. Cyril and St. Methodius” University of Veliko Tarnovo, Faculty of Mathematics and Informatics, Department of Information technology.

According to Order RD-06-182 of the Vice-Rector of University of Economics – Varna from 06.12.2021 I have been appointed a member of the scientific jury in connection with a competition for the academic position of “professor“. The opinion is given based on the decision made during the first meeting of the scientific jury on 17.12.2021.

2. Data about the competition

The competition is for the academic position “professor” in the professional field 4.6 “Informatics and Computer Science”, of the scientific specialty “Informatics”, for the needs of the Faculty of Informatics, Department of Informatics, at the University of Economics – Varna. The competition was announced in the State Gazette issue no. 85/12.10.2021.

3. Candidates in the competition

There is one candidate in the announced competition: **assoc. prof. Snezhana Dineva Sulova, PhD.** The applicant has submitted all the necessary documents listed in the application for admission to the competition.

4. Quantitative and substantive characteristics of the presented scientific publications of the candidate

- In the “A” group of indicators (50 points): the candidate has submitted a dissertation for granting the educational and scientific degree “Doctor” on the topic “Building a system for information provision of electronic business”, successfully defended in 2005. The diploma is number 30572 from June 12, 2006. A list of publications on the dissertation is presented, including 7 articles, all of which have been published in edited scientific volumes. Because of that 20 points are awarded. On this indicator the points are enough;
- In the “B” group of indicators (100 points): a monograph is presented on the topic: “Knowledge Extraction and Analysis of Data from Internet Sources”, published in the Monographic Library “Prof. Tsani Kalyandzhiev”, book 77, ISBN 978-954-21-1082-8, in 2021. According to this indicator, the points are enough;
- In the “G” group of indicators (200 points): a total of 10 publications were presented, each of which earns 30 points for the candidate. The publications are renowned editions with SJR without IF. Five of the publications are stand-alone and the rest are co-authored. Separation protocols are presented, from which it is evident that the candidate's contribution to the co-authored publications is equivalent. The publications have not been declared in previous procedures for acquiring scientific degrees or the academic position of “associate professor”. To these 300 points 30 points from two published chapters by books are added. On this indicator the points are sufficient;
- In the “D” group of indicators (100 points): a total of 37 citations of 8 publications of the candidate are presented. 5 of the publications are independent and 3 are co-authored. Each of the citations presented in the list earns 8 points for the candidate, as they are cited in scientific journals, referred and indexed in Web of Science and Scopus. According to this indicator, the points are enough;
- By group of indicators “E” (100 points): the candidate has been an advisor to two PhD students Radka Valerieva Nacheva (2017) and Boris Ivanov Bankov

(2018) who have successfully earned PhDs. For each of them 50 points are awarded. In addition, the following is presented: a list including 10 participations of the candidate in national scientific or educational projects (each such participation is worth 10 points); a list of national scientific or educational projects led by the candidate (4 in number, each worth 10 points); leadership of the Bulgarian team in an international project (50 points); attracted funds for projects (119 points); list of published textbooks (8 in number, 71 points in total) and a published practical textbook (4 points). The points on this indicator are sufficient.

5. Quantitative and qualitative evaluation of the teaching work

According to the submitted documents, the candidate assoc. prof. Snezhana Sulova, PhD has participated in the development of 13 curricula for the Bachelor's degree. They are in various fields, but especially in the field of Internet technologies, web design, web-based content management systems, user experience design, search engine optimization and other current topics related to modern IT training.

For the Master's degree, the candidate has participated in the development of 12 school programs. In addition to the areas listed above, other current IT areas: JavaScript programming, e-business and e-commerce, digital marketing technologies, data analysis and extraction of knowledge are included. The candidate also participates in the development of 4 study syllabuses for the doctoral programs "Informatics" and "Application of computing in the economy".

Regarding the study load in the bachelor's degree for the last 2 years as an associate professor, the candidate has led 7 disciplines in the 2019/2020 academic year (with a total classroom load of 280 hours). Some of the disciplines are in English and Russian. In the 2020/2021 academic year the workload of the candidate includes 8 disciplines (with a total classroom workload of 305 hours), one of the disciplines being conducted in Russian. The total of workload for these 2 academic years is 585 hours.

In the master's degree, the study load of the candidate is 150 hours for the 2019/2020 academic year (a total of 7 disciplines are included). For the 2020/2021 academic year the workload is significantly higher: 270 hours distributed in a total of 12 disciplines. The total study load in the master's degree for these 2 years is 420 hours.

The conducted disciplines in bachelor's and master's degree overlap with the curriculum developed by the candidate.

Documents for the workload with Erasmus incoming students for the 2020/2021 academic year, in the discipline "Web technologies" (a total of 15 hours of lectures) are presented and with students studying at the Canter for vocational training in the specialty "Pedagogy" (30 hours of lectures for 2019/2020 and 36 hours of lectures for 2020/2021) are presented.

6. Identification of scientific contributions

Due to the large number of publications presented in renowned issues, I will not dwell on individual publications, but I will emphasize the essence of some of the candidate's contributions. In terms of scientific and scientifically applied contributions, the presented monograph "Knowledge Extraction and Analysis of Data from Internet Sources" makes a significant impression. Except research of existing approaches to extracting knowledge from Internet sources (mandatory for monographs of this kind), here of great importance is the developed model for knowledge extraction and analysis of data from internet sources. This model compensates for some of the imperfections of the models offered so far and given the very diverse information, which is derived from the Internet, offers flexible approaches that allow searching for new models in the data. The analysis of software technologies and the resources for the realization of the model, as well as the descriptions of the application of this model in e-commerce and social networks could be beneficial professionals who seek to realize practical commerce applications in this area.

The developed methodology for web site evaluation for e-commerce also makes a significant impression (discussed in 2 publications). The main problem with the development of such methodologies is either the lack of sufficient indicators to be taken into account, or the use of such indicators that do not give a sufficiently specific assessment of e-commerce websites. The candidate's key contribution here is that the system of indicators covers a wide enough range of data: expert opinions, databases, analytical systems, as well as data extracted from Internet sources.

Another very significant contribution of the candidate is in the development of a number of approaches to the application of data mining and text mining techniques in

various business activities and sectors of the economy. Most of the presented publications (11 in total) are related to this topic. Many different activities and sectors are covered such as: the creation of groups for marketing purposes, the analysis and evaluation of e-shop customers, detecting of spam emails, grouping and classifying research publications, analysis of the similarities of text documents and others.

In conclusion, after reading the published articles and abstracts, I agree with the contributions described by the candidate in the reference for scientific contributions.

7. Critical remarks and recommendations

In view of points 4, 5 and 6, where it is clear that the candidate assoc. prof. Snezhana Sulova, PhD fulfils all indicators, and for many of them there is a significant excess of the required points, I do not have any critical notes and recommendations. The documents for the competition are a complete set, well arranged and comprehensively describing the achievements of the candidate. The recommendation which I would like to give is in a positive aspect: it would be good if the monograph "Knowledge Extraction and Analysis of Data from Internet Sources" is published in English too so it can be accessed by many more readers from the scientific community.

8. Conclusion

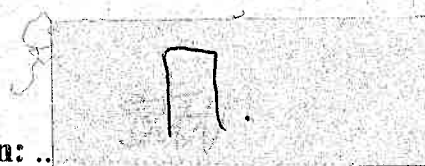
The presented scientific and scientifically applied results are an original contribution to science and meet the requirements of the Development Act for the academic staff in the Republic of Bulgaria (ZRASRB), the Regulations for implementation of ZRASRB and the rules for the conditions and the order of acquisition of scientific degrees and academic positions at the University of Economics – Varna. The candidate demonstrates in-depth scientific knowledge and research skills opportunities in the researched scientific fields of field 4.6. "Informatics and Computer Sciences". As an associate professor at the University of Economics – Varna she participated in the development of 25 study programs in bachelor's and master's degrees and has had a serious study load in different specialties of the two educational degrees, for the last two academic years. She has led four national scientific or educational projects, as well as the Bulgarian team in an international project. The candidate has taken participation in the Erasmus+ program as a guest speaker in different countries, as well as in the training of incoming students in this program. She

has been an advisor to two successfully defended doctoral students and is currently an advisor to another (from 01.03.2021).

In view of the above, I firmly give my positive suggestion, that the candidate assoc. prof. Snezhana Dineva Sulova, PhD has all the necessary qualities and achievements for holding the academic position of “professor” according to the announced competition.

20.01.2022

Prepared the opinion: ..



Assoc. Prof. Zlatko Varbanov, PhD



ИКОНОМИЧЕСКИ УНИВЕРСИТЕТ ВАРНА

OPINION

Вх. № 9220-20126.01.2022 for the academic position of "Professor"
in a competition announced by the University of Economics - Varna

by Assoc. Prof. Dr. Pavel Stoyanov Petrov, University of Economics - Varna,
Faculty of Informatics, Department of Informatics

1. General information

The opinion was prepared by Assoc. Prof. Dr. Pavel Stoyanov Petrov, PF 4.6. "Informatics and Computer Science", based on the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASB), Rules for Implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria (RILDASB), Rules for Development of Academic Staff at University of Economics - Varna (RDASUEV), Order of the Rector UE-Varna № RD 06-182/06.12.2021 and Decision of the Scientific Jury of 17.12.2021.

2. Data for the competition

The competition for the academic position of "Professor" in a professional field (PF) 4.6. "Informatics and Computer Science", scientific specialty "Informatics", was published in the State Gazette, issue 85/12.10.2021 for the needs of the Department of Informatics.

3. Candidate for the competition

The only candidate in the competition for the academic position of "Professor" is Assoc. Prof. Dr. Snezhana Dineva Sulova, Lecturer at the University of Economics - Varna, Faculty of Informatics, Department of Informatics. She completed her secondary education at Hristo Botev High School in Nova Zagora in 1991. She completed her higher education at the University of Economics - Varna in 1996, after which she worked in practice as a programmer and system administrator. After studying for a full-time doctorate, in 2006 she obtained an educational and scientific degree "Doctor" in the scientific specialty "Application of Computer Science in Economics", defending a dissertation on "Building a system for information support of e-business." Since 1999 she has been working as a part-time assistant in the Department of

Informatics at the University of Economics - Varna. She has successively held the following academic positions in the same department: in 2006 - assistant; since 2008 - chief assistant; since 2012 - Associate Professor in the professional field 4.6 "Informatics and Computer Science".

Simultaneously with the successful teaching activity, Assoc. Prof. Dr. Snezhana Sulova participated in 14 projects, leader of 5 of them, including 1 international: researcher in project BG05M2OP001-1.002-0002-C02 "Digitalization of the economy in a Big Data environment (DIGD) "(2018-2023); participation in the research project NPI-36/2019 "Modern approaches to the integration of mobile technologies in higher education" (2019-2021); participation in the project BG05M2OP001-2.013-0001 "Student Internships - Phase 2", within the Operational Program "Science and Education for Smart Growth"; project manager to support the development of the empirical part of the doctoral dissertation NAP251 from 2019; project manager NPI-28/2018 Web-based register "Scientific activity" (2018-2019); participation in the research project NPI-13/2017 "Social media in business and education" (2017-2018); participation in the project BG05M2OP001-2.002-0001 "Student Internships - Phase 1", funded by the Operational Program "Science and Education for Smart Growth" (2014-2020, 2016-2018); Head of the international project "Digitization and preservation of the documentary history of the University of Economics - Varna as part of the cultural and historical heritage of the academic community in Bulgaria" Contract No 24-10-M2-6 /24.04.2015, program BG08 "Cultural Heritage and Contemporary Arts", partner: Regional Library - Oppland, Norway (2015-2016); project manager to support the development of the empirical part of the doctoral dissertation NAP184 from 2016; participation in the research project NP-156/2015 "Methodology for intelligent analysis of data for students and the creation of a knowledge base" (2015-2016); participation in project BG051PO001-3.3.07-0002 "Student Internships", funded by OP "Human Resources Development" (2007-2013, 2014-2015); participation in project BG051PO001-4.3.04-0036 "Distance learning - a modern approach in the system of academic education to improve the quality of human resources" (2013-2014); project manager NP - 84/2013 for the Student Scientific and Practical Conference at the University of Economics - Varna (2013).

In addition, she has a qualification in "Pedagogy", received at the University of Economics - Varna and conducted training under the Erasmus +

program, University of Szczecin, Poland, in the period 27.05.2018 - 02.06.2018

4. Quantitative and substantive characteristics of the submitted scientific papers after the last procedure

For the participation in the competition for the academic position "Professor" Assoc. Prof. Dr. Snezhana Dineva Sulova presents a total of 45 publications, with a total volume of 1050 pages:

- monographs and chapters from books - 3;
- studios - 2;
- scientific articles - 13;
- scientific reports - 18;
- textbooks and teaching aids - 9.

The presented monographic work "Extraction of knowledge and analysis of data from Internet sources" with a volume of 175 standard typewritten pages meets the requirements of Article 62, item 3 and Article 71, paragraph 2 of the Regulations for the development of academic staff in University of Economics - Varna, as the published monograph does not repeat publications for obtaining the educational and scientific degree "Doctor", is published in a specialized scientific publishing house, discussed in a specialized primary unit within the meaning of §1, item 6 of LDASB and is peer-reviewed by two habilitated persons.

The monographic work of Assoc. Prof. Dr. Snezhana Sulova is an in-depth study of a current scientific and applied problem at a high modern level. It offers a model for extracting knowledge and analyzing data from various Internet sources, which allows integrated use of data and the application of flexible approaches to their processing. The wide variety of services offered by the World Wide Web leads to the emergence of a huge amount of diverse and new types of data. They are a useful additional source of knowledge for the business, but due to their specificity they create many challenges related to their extraction, processing, management and analysis.

From this position is presented the evolution of the web service and the concepts that arise with its development. The types of data in the world wide web have been identified. An overview and analysis of the available ways to extract knowledge from the Internet has been made. The approaches for extracting knowledge from the content, structure and usability of Internet sources are considered. It is concluded that there is a need to develop a unified

model for data analysis from Internet sources, which would allow data integration and the construction of flexible and dynamic schemes and approaches for analysis.

A model for knowledge extraction and data analysis is proposed, consistent with the characteristics and diversity of data on the Internet, which allows the use of different approaches and architectural solutions for data organization by cyclically repeating processes and searching for models in data from the Internet sources. The software technologies for realization of the model for knowledge extraction are analyzed and researched. The requirements to them are defined and an approach for realization of the model is offered. The application of the model for extraction and analysis of data from Internet sources is demonstrated. E-shop data and data from social networks are used. The approbation was made with the software product RapidMiner Studio.

The other scientific publications submitted for participation in the competition, too meet the requirements. Most of them are in English and have been published in authoritative Bulgarian and foreign scientific journals, referenced and indexed in world-famous databases with scientific information such as Scopus and Web of Science.

The attached references show that 110 citations of scientific publications were found, including 37 citations in Scopus and Web of Science.

In its entirety, the presented publications fully cover the minimum national requirements set in the LDASB, RILDASB, as well as the internal requirements set in the RDASUEV (Art. 77, items 3, 4, 5 and 6 in connection with Art. 86) for holding an academic position "Professor" in PF 4.6. Informatics and Computer Science. They enrich the existing theoretical knowledge and are applicable in practice.

5. Quantitative and qualitative evaluation of the teaching work

Assoc. Prof. Dr. Snezhana Sulova has held a total of over 16 academic positions "Assistant", "Chief Assistant" and "Associate Professor" - the last position was held over 10 years at the University of Economics - Varna, which meets the requirements of Art. 77, item 2 in connection with Art. 86 of the Regulations for the development of the academic staff at the University of Economics - Varna. In addition, there is a mobility for teaching under the Erasmus + program - Kyiv National University of Trade and Economics (KNUTE), Ukraine, 19/05/2019 - 25/05/2019. Her teaching employment covers

and corresponds to the field in which the competition was announced, and shows the presence of extensive teaching experience and competence.

Assoc. Prof. Dr. Snezhana Sulova has participated in the development of a number of lecture courses - 13 for Bachelor's degree, 12 for Master's degree and 4 for Doctor's degree. She has given lectures and exercises in a number of disciplines related to the announced competition:

- About Bachelor's degree: Informatics, Internet technologies, Office applications, Logical and functional programming, Introduction to informatics, Web technologies, client web programming, Interactive design and application programming, E-business (English), Informatics (Russian), Graduation seminar.

- For Master's Degree: E-Business Part 1, Internet Sales, Management Information Systems, Electronic Business, Web Technologies, Web Technologies (English), Business Analysis and Knowledge Extraction, Digital Marketing Technologies, Computer Technologies in Advertising and media communications, search engine optimization, Java Script programming .

- For Erasmus students: Web technologies, UX Design

The published teaching materials are textbooks and teaching aids in certain disciplines, as well as methodological manuals - a total of 9, all co-authored.

She works together with students and PhD students in 8 projects: Project BG05M2OP001-2.013-0001 "Student Internships - Phase 2" (2020-2021); NPI 36/2019 "Modern approaches to the integration of mobile technologies in higher education"; NAP 251/2019 (2019-2020); Project BG05M2OP001-2.002-0001 "Student Internships - Phase 1" (2016-2018); NAP 184/2016; NPI 156/2015 (2015-2016); Project "Digitalization and preservation of the documentary history of the University of Economics - Varna as part of the cultural and historical heritage of the academic community in Bulgaria" Contract No 24-10-M2-6 /24.04.2015 (2015-2016); Project BG051PO001-3.3.07-0002 "Student Internships" (2013-2015).

Assoc. Prof. Dr. Snezhana Sulova has supervised: 2 PhD students who successfully defended the ONS "Doctor", 2 PhD students, expelled with the right to defend within 5 years and 1 student at the moment. She has led 22 bachelor's and 19 master's degrees.

6. Identification of scientific contributions

In the works with which Assoc. Prof. Dr. Snezhana Sulova participates in

the competition for the academic position "Professor" in PF 4.6 "Informatics and Computer Science", 11 contributions can be highlighted, described in the Reference for Scientific and Applied Contributions . I accept the contributions as significant, real and enriching the existing theory and practice. I believe that they can be defined as contributions of a scientific and scientific-applied nature.

7. Critical remarks and recommendations

I believe that Assoc. Prof. Dr. Snezhana Sulova has scientific and teaching potential. I recommend:


- To continue the work on publications, indexed and referenced in world-famous databases with scientific information;
- To continue to work actively with students and PhD students on projects.

8. Conclusion

Based on the above, it is evident that the candidate has significant experience in research and teaching activities in the scientific field of the announced competition and fully meets the requirements set out in LDASB, RILDASB and RDASUEV. This gives me reason to give a positive assessment of the candidacy of Assoc. Prof. Dr. Snezhana Dineva Sulova to hold the academic position of "Professor" in the professional field 4.6. "Informatics and Computer Science".

Date: 25.01.2022

Member of the jury:



/ Assoc. Prof. Dr. Pavel Petrov /

Full Prof. Borislav Stoyanov PhD, DSci
University of Shumen, Bulgaria

OPINION

of the documents submitted for participation in the competition for the academic position "Full Professor" announced by the University of Economics - Varna in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science, and the scientific specialty Informatics, for the needs of the Department of Informatics of the University of Economics - Varna (the competition was published in the State Gazette No. 85 / 12.10.2021).

1. General information

By order RD 06-182 / 06.12.2021 of the Vice-Rector for R&D of the University of Economics - Varna, I have been appointed a member of the scientific jury under this procedure. At the first meeting of the scientific jury (December 17, 2021) I was appointed to write opinion on the submitted documents.

2. Candidate for the competition

Associate Professor Dr. Snezhana Dineva Sulova is the only candidate for this academic position. She works at the University of Economics in Varna, Department of Informatics. Assoc. Prof. Sulova is a PhD in PF 3.8. Economics, specialty Application of computer technology in economics, with the topic of the dissertation Construction of a system for information support of e-business. She

is an associate professor in PF 4.6. Informatics and computer science. In the Register of Scientific Activity in the Republic of Bulgaria it is numbered 26971.

3. Quantitative and substantive characteristics of the presented scientific papers under the procedure.

I received a set of electronic versions of all documents related to the procedure and paper versions of the published monograph, book, and collective monographs. All documents are in accordance with the Regulations of the University of Economics - Varna.

To participate in the competition for full professor, the candidate presented a habilitation monograph Extraction of knowledge and analysis of data from Internet sources. 10 publications indexed in Scopus and / or WoS, chapters from collective monographs and 32 citations are presented on the reference for meeting the minimum national requirements.

The main habilitation work proposes a model for extracting knowledge and analyzing data from various Internet sources, which allows integrated use of data and application of flexible approaches for their processing.

The other publications of the candidate are related to the analysis of the characteristics of social networks, development of frameworks for innovative digital data processing in construction and logistics, analysis of technological aspects of digital transformation with logistics, analysis of e-commerce websites, automatic analysis approaches of customer opinions, differentiation of user groups through data processing, methods for extracting associative rules, etc.

To the materials on the procedure Assoc. Prof. Sulova presented co-authorship in nine textbooks and training guides.

4. Quantitative and qualitative evaluation of the teaching work

Assoc. Prof. Sulova conducts classes (lectures and exercises) with students from UE-Varna in the following disciplines: Introduction to Informatics, Web Technologies, Diploma Seminar, Internet Technologies, Office Applications, Client Web Programming, JavaScript Programming, Business Analysis and Extraction of Knowledge, Computer Technology in Advertising and Media Communications, Search Engine Optimization, Digital Marketing Technology, Internet Sales, Informatics (in Russian) and E-Business (in English).

5. Identification of contributions to research work. Evaluation of the candidate's citations

The following scientific and applied contributions are specified in the scientific works of the candidate:

- A model for extracting knowledge and analyzing data from Internet sources has been developed;
- The problems related to the innovative digital processing of existing and emerging new types of data in the construction and logistics sectors are presented;
- A methodology for evaluation of e-commerce websites has been created, which is based on a system of indicators obtained as a result of data from: expert assessments, databases, analytical systems and data extracted from Internet sources;
- A number of approaches have been developed for the application of data mining and text mining techniques in various business activities and sectors of the economy.

In addition, data for 110 citations of the candidate's scientific publications are presented. I distinguish articles Using text mining to classify research papers and Analysis of the possible application of Data Mining, Text Mining and Web

Mining in Business Intelligent Systems, which have respectively 16 and 12 citations in Scopus.

I believe that with his work Assoc. Prof. Sulova has sufficient popularity in scientific circles.

The candidate has participated in the development of curricula for 29 subjects.

Assoc. Prof. Sulova has led five projects and participated in nine others. There are two participations in the Erasmus+ program. Under her leadership, 41 diploma theses and master's theses were completed. Assoc. Prof. Sulova has two successfully defended doctoral students and two with the right to defend.

6. Critical remarks and recommendations

I recommend the candidate to focus her efforts on publishing articles in impact factor journals.

I have no co-authored publications with Assoc. Prof. Sulova.

Conclusion

Based on my acquaintance with the submitted documents on the competition procedure and analysis of their significance, I see that the candidate meets the minimum national requirements and rules for the conditions and procedure for holding the academic position of "Full Professor". I give my positive assessment of the choice of Assoc. Professor Dr. Snezhana Dineva Sulova in the academic position of "Full Professor" at the University of Economics - Varna in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and computer science, and scientific specialty Informatics.

Shumen

2022/01/04

Signature:



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(Full Prof. Borislav Stoyanov, PhD, DSci)



ИКОНОМИЧЕСКИ УНИВЕРСИТЕТ - ВАРНА

СЕРТИФИЦИРАНА СИСТЕМА ЗА УПРАВЛЕНИЕ НА КАЧЕСТВОТО ISO 9001:2015

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ИКОНОМИЧЕСКИ УНИВЕРСИТЕТ ВАРНА

Вх. № 9220-215/31.01.2020 г.

OPINION

by Prof. DSc. Ivan Ganchev Garvanov

University of Library Studies and Information Technologies,
member of a scientific jury according to the Order of the Rector of UE-Varna №
RD 06-182 / 06.12.2021 and Decision of the Scientific Jury of 17.12.2021, on a
competition for the academic position of „professor“ in the field of higher
education 4. Natural sciences, mathematics and informatics, professional field: 4.6.
Informatics and Computer Science, published in the State Gazette, issue no.

85/12.10.2021

The only candidate in the competition is: Assoc. Prof. Dr. Snezhana Dineva Sulova

1. General information

The opinion was prepared by Prof. Dr. Ivan Ganchev Garvanov, PN 4.6.
"Informatics and Computer Science", according to the Order of the Rector of UE-
Varna № RD 06-182 / 06.12.2021, Decision of the Scientific Jury of 17.12.2021,
Law on the Development of Academic Staff in the Republic of Bulgaria, Rules for
application of the Law for the development of the academic staff in the Republic of
Bulgaria, Regulations for the development of the academic staff in the University
of Economics - Varna.

2. Data for the competition

The competition for the academic position of "professor" in the field of
higher education 4. "Natural Sciences, Mathematics and Informatics", PN 4.6.
"Informatics and Computer Science", scientific specialty "Informatics", was

announced in the State Gazette, issue 85 / 12.10.2021 for the needs of the Department of Informatics.

3. Candidate for the competition

The only candidate in the competition is: Assoc. Prof. Dr. Snezhana Dineva Sulova.

The candidate completed her secondary education at Hristo Botev High School in Nova Zagora in 1991. In 1996 she completed her higher education at Varna University of Economics, after which she worked as a programmer and system administrator. In 2006 he obtained an educational and scientific degree "Doctor" in the scientific specialty "Application of computer technology in economics", with the topic of the dissertation "Building a system for information support of e-business". Since 1999 he has been working as a part-time assistant in the Department of Informatics at the University of Economics - Varna. In 2006 he held the academic position of assistant, since 2008 he has been a chief assistant, and since 2012 he has been an associate professor in the professional field 4.6 "Informatics and Computer Science" at the University of Economics - Varna, Faculty of Informatics, Department of Informatics.

I believe that she is a full-fledged teacher and researcher with enviable knowledge and skills and that she must continue to work in the future with this enthusiasm.

4. Quantitative and substantive characteristics of the submitted scientific papers after the last procedure

The candidate Assoc. Prof. Dr. Snezhana Sulova participated in the competition for the academic position "Professor" with 45 publications, as follows: three monographs and chapters from books; two studios; thirteen scientific articles; eighteen scientific reports; nine textbooks and teaching aids

The attached scientific papers are not used to obtain the educational and scientific degree "Doctor" and to hold the academic position of "Associate

Professor" and are the subject of the competition.

The monographic work "Extraction of knowledge and analysis of data from Internet sources" has a volume of 175 pages and meets the requirements of Article 62, item 3 and Article 71, paragraph 2 of the Regulations for the development of academic staff at the University of Economics - Varna, as the published monographic work does not repeat publications for obtaining the educational and scientific degree "Doctor", is published in a specialized scientific publishing house, discussed in a specialized primary unit within the meaning of § 1, item 6 of ZRASRB and is reviewed by two habilitated persons.

The monograph is an in-depth research offering a model for knowledge extraction and data analysis, consistent with the characteristics and diversity of data on the Internet, which allows the use of different approaches and architectural solutions for data organization by cyclical replication and search of models in data from internet sources. Application of the model for extraction and analysis of data from Internet sources is demonstrated. E-shop data and data extracted from social networks were used to demonstrate the model. The approbation was made with the software product RapidMiner Studio.

The fulfillment of the minimum national requirements for the groups of indicators for the academic position "professor" is as follows:

For group "A" the candidate has submitted a certificate for proving the educational and scientific degree "doctor".

For group "B" the candidate has presented a monograph - 100 points.

For group "G" the sum of the indicators from 5 to 10 forms a total of 330 points of the required 200 points.

For group "D" the sum of the points is 264 at the required 100 points.

For group "E" the sum of the indicators from 12 to 20 forms a total of 524 points of the required 100 points.

From the analysis made in this way it was established that the evidence presented by Assoc. Prof. Dr. Snezhana Sulova significantly exceeds the defined minimum national requirements set in the Law on the Development of the

Academic Staff in the Republic of Bulgaria, the procedure for acquiring scientific degrees and for holding academic positions at the UE-Varna (Art. 77, items 3, 4, 5). and 6 in connection with Article 86) for holding the academic position of "professor" in PF 4.6. Informatics and Computer Science.

A check made on 30.01.2021 for the scientometric indicators of the candidate in Scopus, Web of Science and Google Scholar established the following:

The number of publications in Scopus is 14, the number of citations is 47 and h-index 4.

The number of publications in WoS is 5, the number of citations is 4 and h-index 1.

The number of citations in Google Scholar is 117 and h-index 6.

5. Quantitative and qualitative evaluation of the teaching work

Assoc. Prof. Sulova is a long-term lecturer at the University of Economics - Varna, having held academic positions of "Assistant", "Chief Assistant" and "Associate Professor" for over 16 years. 77, item 2 in connection with Art. 86 of the Regulations for the development of the academic staff at the University of Economics - Varna. Her teaching competence fully corresponds to the announced competition.

Assoc. Prof. Sulova has participated in the development of lecture courses, respectively 13 for Bachelor's degree, 12 for Master's degree and 4 for Doctor's degree.

In the period 27.05.2018 - 02.06.2018 he participated in training under the Erasmus + program, University of Szczecin, Poland.

In the period 19/05/2019 - 25/05/2019 she participated in the Erasmus + program - Kyiv National University of Trade and Economics (KNUTE), Ukraine.

He actively participates in 14 research projects, is the leader of 5 of them, and one is international. He received a qualification in "Pedagogy" from the "University of Economics" - Varna.

She has been the research supervisor of 22 bachelor's and 19 master's degrees. She supervised two doctoral students who successfully defended the ONS "Doctor", as well as two doctoral students who were expelled with the right to defend. He is currently the head of a doctoral student in the process of training.

From the attached documents for the competition it can be seen that Assoc. Prof. Sulova is extremely active and takes part in the implementation of research projects, writing scientific publications, teaching, participation in the jury and others.

6. Identification of scientific contributions

I believe that the publications submitted by the candidate for review in the competition are for the most part her personal work, despite the co-authorship of most of them. The presence of more than one author in the publications shows that she manages to work well in a team and get high scientific results, which is confirmed by the places of their publication.

The contributions presented by Assoc. Prof. Dr. Snezhana Sulova are of scientific and scientific-applied nature. I accept the candidate's contributions as significant, real and enriching the existing theory and practice.

7. Critical remarks and recommendations

I would like to recommend to Assoc. Prof. Dr. Snezhana Sulova to be the scientific supervisor of more doctoral students in order to pass on her rich scientific and teaching experience to the next generation of Bulgarian lecturers and researchers.


8. Conclusions

After getting acquainted with the materials and scientific papers presented in the competition and based on the analysis of their significance and the scientific and scientific-applied contributions contained in them, I confirm that the scientific achievements meet the requirements of the Law on the Development of the

Academic Staff in the Republic of Bulgaria, the procedure for acquiring scientific degrees and for holding academic positions at the UE-Varna. Assoc. Prof. Dr. Snezhana Sulova satisfies the minimum national requirements in the professional field and no plagiarism has been established in the scientific papers submitted at the competition.

All this gives me reason to give my positive assessment of the candidacy of Assoc. Prof. Dr. Snezhana Dineva Sulova for the academic position of "professor" in the professional field 4.6. Informatics and Computer Science.

30.01.2022



Reviewer:

(Prof. DSc. Ivan Garvanov)