



Bx. № PD 20-34/10.01.2022c

REVIEW

by Prof. Dr. Julian Andreev Vasilev,

Varna University of Economics,

Professor in PN 4.6 "Informatics and Computer Science", validated in the register of the academic staff of NACID "Habilitation persons with scientometric indicators";

Member of the scientific jury for the academic position of "Associate Professor" in a competition announced by the University of Economics - Varna (UE-Varna)

I. Reason for writing the review

Order of the Rector of UE-Varna RD 06-181 / 06.12.2021 for determining the composition of the scientific jury; held the first meeting of the scientific jury on 17.12.2021

II. Contest data

The competition was announced in the field of higher education 4 "Natural Sciences, Mathematics and Informatics", professional field 4.6 "Informatics and Computer Science", scientific specialty "Informatics"; for the needs of the Faculty of Informatics and the Department of Informatics at the University of Economics - Varna. An announcement was published in SG no. 85 / 12.10.2021

III. Candidate for the competition

The only candidate in the competition is Ch. Assistant Professor Dr. Yanka Georgieva Alexandrova. She was born in 1972. She holds a diploma of ONS "Doctor" 084 / 09.11.2016. Dissertation topic: Architecture of an analytical system for customer relationship management. Current academic position: "Chief Assistant" (Number / date of the act of appointment: RD - 17 - 1782 / 29.06.2017). Prior to that, she held the academic positions of "Assistant" (1999-2005), "Senior Assistant" (2005-2011), "Chief Assistant" (2011-2015), "Assistant" (2015-2017).

The candidate Ch. Assistant Professor Dr. Yanka Alexandrova covers the minimal national requirements (MNR) (described in the PPRASRB) and the minimum university requirements (MUR) for "Associate Professor" in PN 4.6.

According to certain criteria, the candidate's points exceed the minimum several times.

Table 1.

MNR for "Associate Professor" in PN 4.6 according to ZRASRB and MNR of Ch. Assistant Professor Dr. Yanka Alexandrova (points)

Indicator	MNR according to ZRASRB	MNR of Ch. Assistant Professor Dr. Yanka Alexandrova
A	50	50
B	-	-
V	100	100
G	200	263
D	50	232
E	-	-

Table 2.

Minimum University Requirements (MUR)

Nº	Indicators	MUR for "Associate Professor"	Points on ch. Assistant Professor Dr. Yanka Alexandrova
1.	Scientific papers	30	106.83
2.	Scientific articles and studies	80	137.53

IV. Content characteristics of the presented works

In the competition for "Associate Professor" Ch. Assistant Professor Dr. Yanka Alexandrova participates with **32 publications**, incl. 4 monographs, 1 study, 7 articles, 12 conference papers, 8 textbooks and teaching aids.

Table 3.

SUMMARY TABLE OF PRESENTED PUBLICATIONS

Nº	Type of scientific publications	Independent		Co-authored		Total	
		count	pages	count	pages	count	pages
1.	Monographs	1	258	3	100	4	358
2.	Studies	1	31			1	31
3.	Scientific articles	3	50	4	18	7	68
4.	Conference papers	6	55	6	20	12	75
5.	Textbooks			8	361	8	361
	Total:	11	394	18	399	32	893

Table 4.

SUMMARY TABLE FOR VOLUME AND TYPE OF PRODUCTION

№	Type of scientific publications	On the dissertation		For participation in the competition for "Associate Professor"		Total	
		count	pages	count	pages	count	pages
1.	Abstract	1	40			1	40
2.	Monographs			4	358	4	358
3.	Studies	1	38	1	31	2	69
4.	Scientific papers	1	15	7	68	8	83
5.	Conference papers	2	12	12	75	14	87
6.	Textbooks			8	361	8	361
	Total:	5	105	32	893	37	998

According to the requirements of ZRASRB, PPZRASRB and the Rules for development of the academic staff in UE-Varna, the candidate for the academic position "Associate Professor" must meet the following conditions.

- To have acquired ONS "Doctor". *Ch. Assistant Professor Dr. Yanka Alexandrova has defended a dissertation on "Architecture of an analytical system for customer relationship management" (Diploma No / date: 084 / 09.11.2016).*
- To have held the academic position of "assistant" or "chief assistant" for at least 2 years. *The applicant meets this condition. Ch. Assistant Professor Dr. Yanka Alexandrova is now the "Chief Assistant" (Number / date of the act of appointment: RD - 17 - 1782 / 29.06.2017). From 1999 to 2017 she was "Assistant", "Senior Assistant" and "Chief Assistant".*
- To present a published monographic work. *The candidate has published a separate monograph "Alexandrova, J. (2021) Machine training for credit risk forecasting on shared lending platforms. Varna: Nauka i ekonomika, 2021, 258 pp. - (Bibl. Prof. Tsani Kalyandzhiev; Book 79), ISBN: 978-954-21-1090-3 ".*
- To correspond to the MNR for the academic position of "Associate Professor". *The applicant covers the MNR.*
- To meet the minimum university requirements. *The candidate covers MUR.*

- No established plagiarism indicated. *No plagiarism found. The works with which he participates in the competition have passed a plagiarism test and a peer review process before being published.*

The monographic (habilitation) work with which she participated in the competition (*Alexandrova, Ya. (2021) Machine training for credit risk forecasting on shared lending platforms, Varna: Nauka i ekonomika, 2021. 258 pp. - (Bibl. Prof. Tsani Kalyandzhiev: Book 79), ISBN: 978-954-21-1090-3*), is an independent monographic work; it was discussed in the primary unit (Department of Informatics, Minutes № 9 / 26.04.2021), reviewed by two habilitated persons, published in a specialized scientific publishing house, has ISBN, has detailed content; has a comprehensive bibliography, does not repeat already known knowledge; brings a significant scientific problem to a high scientific level; as a volume is 258 pages.

Ch. Assistant Professor Dr. Yanka Alexandrova has an account with Scopus (<https://www.scopus.com/authid/detail.uri?authorId=57200916243>). Scopus has 5 publications, 26 citations, h-index: 3.

Ch. Assistant Professor Dr. Yanka Alexandrova also has profiles in WoS, Scholar Google, ORCID, RePEc and Research Gate. Many of her publications are visible in full text.

All publications of Ch. Assistant Professor Dr. Yanka Alexandrova have been entered in the Register of Publications of the University of Economics - Varna.

The publications with which he participated in the competition were not used to hold a previous academic position.

V. Learning work

Ch. Assistant Professor Yanka Alexandrova, PhD, teaches the following disciplines: Information Systems Design, Business Intelligent Systems, Business Analysis and Knowledge Extraction, Business Process Modeling, Digital Marketing Technologies, Fundamentals of Information Systems, Accounting Software, Informatics.

For the period 2005 - 2021, 16 diploma theses, 1 master's thesis and 20 diploma theses were reviewed.

Ch. Assistant Professor Dr. Yanka Alexandrova reports on joint work in three research projects with PhD students and students. He has two joint

publications with students and PhD students. She has participated in a number of projects.

Ch. Assistant Professor Yanka Alexandrova, PhD, conducted mobility for teaching under the Erasmus + program at the Fontys University of Applied Sciences, Eindhoven, Netherlands (2018), Czech University of Life Sciences Prague, Czech Republic (2019), Kyiv National University of Trade and Economics, Ukraine (2021), University of Coimbra, Coimbra, Portugal (2021).

Ch. Assistant Professor Dr. Yanka Alexandrova participates in conducting short-term training courses for employees of Energo Pro AD, Elektrorazpredelenie Sever, Energo Pro Sales AD, Agropolichim AD, Daphne OOD and others.

Ch. Assistant Professor Dr. Yanka Alexandrova participates in the preparation of a number of curricula. In recent months she has been actively involved in the preparation of the curriculum and qualification characteristics of the specialty "Data Science" (in the Bachelor's degree; PN 4.6).

VI. Contributions, citations

The following stand out in the habilitation work on the competition contributions:

1. A modified methodology based on the Microsoft Team Data Science Process for credit risk forecasting on shared lending platforms has been proposed. A new stage "Interpretation of models" has been added to the methodology, and an approach for combining multinomial and binomial classification models for machine learning has been proposed at the stage "Modeling".
2. An approach is proposed for calculating the relative weights of cases from the training set.
3. An approach is proposed for calculating the optimal threshold for generating forecasts taking into account the matrix of classification costs and the schedule of the cumulative financial result.
4. The proposed new methodology for credit risk forecasting is applied on a real subject area, presenting the implementation of each of the stages with appropriate methods, technologies and software environments.
5. Recommendations are defined regarding the individual stages of the methodology, a program code is provided to support the application of the methodology by other researchers in similar or other fields.

Additional contributions can be highlighted in the other publications :

1. A methodology for the implementation of a digitalization project has been proposed.
2. Author's approaches for business process modeling are presented.
3. Approaches to the application of machine learning in various business activities and areas have been tested.
4. Technological solutions for the application of business intelligent systems are given.
5. Guidelines for improving the content of curricula with a view to training specialists in the field of digital transformation have been provided, and integrating certification programs for leading software companies.
6. Some practical aspects of the use of social media in education are presented.

Ch. Assistant Professor Dr. Yanka Alexandrova has a total of **79 citations**. References to citations are made correctly - autocitations are not included.

VII. Critical remarks, questions and recommendations

I recommend to Ch. Assistant Professor Dr. Yanka Alexandrova to continue working on projects. I recommend that you continue to publish the results of experiments conducted in the field of artificial intelligence. On the positive side, I acknowledge her efforts to find a suitable application of machine learning methods in various areas of business.

I recommend continuing classes with bachelors, masters, Erasmus students; to continue teaching in other universities under the Erasmus program. The classes led by Ch. Assistant Professor Dr. Yanka Alexandrova, are always at the level - taking into account the latest advances in computer science.

As the author of one of the leading publications in Bulgaria in the field of machine learning (habilitation work on the competition), to continue to advise doctoral students and lecturers from other universities.

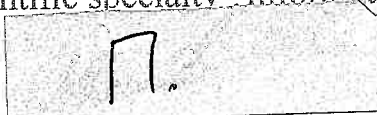
VIII. Conclusion

Careful review of all documents and publications of the candidate **Ch. Assistant Professor Dr. Yanka Alexandrova**, submitted for participation in the competition for the academic position of "Associate Professor" in PN 4.6, show that all the requirements of ZRASRB, PPZRASRB and the Regulations for the development of academic staff at the University of Economics-Varna. The candidate meets the minimum national and university requirements for holding the academic position of "Associate Professor" in PN 4.6 at the time of announcing the competition.

I give my positive opinion on the readiness of the candidate **Yanka Georgieva Alexandrova** to take the academic position of "Associate Professor" of the University of Economics in Varna in professional field 4.6 "Informatics and Computer Science", scientific specialty "Informatics".

January 10, 2022.
City. Varna

Sincerely,



/ Julian Vasilev /

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

REVIEW

of the documents submitted for participation in the competition for the academic position "Associate 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 06-181 / 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 reviewer of the submitted documents.

2. Candidate for the competition

Chief Assistant Dr. Yanka Georgieva Alexandrova is the only candidate for this academic position. She works at the University of Economics in Varna, Department of Informatics. Ch. Assistant Professor Alexandrova is a doctor in PF 3.8. Economics, with the topic of the dissertation Architecture of an analytical system for customer relationship management. In the Register of Scientific Activity in the Republic of Bulgaria it is under number 45057.

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

I received a set of electronic versions of all materials 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 associate professor, the candidate has presented a habilitation monograph Machine Learning for Credit Risk Forecasting on Shared Lending Platforms and an additional book based on her defended dissertation. Five publications indexed in Scopus and/or WoS, chapters from collective monographs and 22 citations are presented on the reference for meeting the minimum national requirements.

In the main habilitation work a methodology for applying machine learning for risk forecasting in online platforms for shared lending is proposed and tested. According to the Regulations of the University of Economics - Varna, the monographic work was reviewed by two habilitated persons, discussed in the department, solves a significant scientifically applied problem at a high modern level and published in a specialized scientific publishing house.

Publication No. 8 examines the use of social media by students at Varna University of Economics.

Publication No. 10 discusses the factors influencing certain oral manifestations characteristic of patients with chronic kidney disease.

Publication No. 13 examines various virtualization tools and technologies suitable for certain stages of the work process in start-up fintech companies.

Publication No. 15 proposes a combination of machine learning methods with traditional analysis of mainly transaction data.

Identification of some significant trends, opportunities and limitations regarding the application of social media in higher education is offered in publication 16.

Article 17 discusses the possibilities for stimulating and motivating the participation, engagement, joint training of students in higher education to achieve better learning and academic results.

To the materials of the procedure Dr. Alexandrova has presented co-authorship in eight textbooks and training guides: Fundamentals of Information Systems, Guide for preparation for a national competition in informatics, Electronic Business 1st Part Business Modeling Analysis and Development of Business Information Systems, Business Information Systems: Distance Learning Textbook, Customer Relationship Management Systems, Microsoft Word 2010. Microsoft Excel 2010, MS Office Excel 2007. Theory and Practice and MS Excel. Theory and practice.

4. Quantitative and qualitative evaluation of the teaching work

Dr. Alexandrova conducts classes (lectures and exercises) with students from UE-Varna in the following disciplines: Informatics, Accounting Software, Information Systems Design, Fundamentals of Information Systems, Business Intelligent Systems, Business Analysis and Knowledge Extraction, Business Intelligence and Big Data, Digital Marketing Technologies, Information Systems Design (in English) and Business Process Modeling (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:

- An approach for combining multinomial and binomial classification models for machine learning is proposed;
- A modified methodology for credit risk forecasting has been proposed;
- Approaches to the use of business intelligent systems are justified;
- Approaches for integration of CRM and ERP systems are presented;
- The use of social media in education is studied and trends and perspectives in this direction are presented.

In addition, data for 73 citations of the candidate's scientific publications are presented. There is a predominance of citations by foreign authors. I distinguish articles 11 and 12, which have 13 and 9 citations in Scopus, respectively.

I believe that Dr. Alexandrova is an established scientist, well known in the scientific community.

The candidate has participated in the development of curricula for over 20 subjects.

She has developed information systems for the companies KUL OOD, Devnya Trade OOD and Zodiac Maritime Ltd. She was a trainer and IT consultant for employees of various companies.

Dr. Alexandrova is involved in three projects together with students and / or PhD students. Two of her publications are co-authored with PhD students. The candidate is a successful supervisor of 6 bachelor's theses and 1 master's thesis. I appreciate her active work with students.

6. Critical remarks and recommendations

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

I have no co-authored publications with Dr. Alexandrova.


Conclusion

Based on my acquaintance with the submitted materials 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 "Associate Professor". I give my positive assessment of the choice of Ch. Assistant Professor Dr. Yanka Georgieva Alexandrova in the academic position of "Associate 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

2022/01/03

Signature: .



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(Full Prof. Borislav Stoyanov, PhD, DSci)