EVALUATION REVIEW

by Prof. Dr. Matilda Ivanova Alexandrova

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regarding the materials submitted for participation in the procedure
for the academic position of **"Professor"** at Plovdiv University "Paisiy Hilendarski",

Area of higher education: ***3. Social Sciences, Economics, and Law***,

Professional field: ***3.7 Administration and management (Quantitative methods and modeling in management)***

In the procedure for taking the academic position of "Professor" announced in the State Gazette, issue 96 of 11.11.2025, and on the website of Plovdiv University "Paisiy Hilendarski" (PU) for the needs of the Department of Management and Quantitative Methods in Economics at the Faculty of Economic and Social Sciences (FESS), **Associate Prof. Dr. Tanya Petrova Yankova-Lilova** from the Department of Management and Quantitative Methods in Economics, FESS at PU, is participating as a candidate.

1. General presentation of the materials received

By Order No. RD-22-45 of 09.01.2026 of the Rector of Plovdiv University "P. Hilendarski", I have been appointed as a member of the Scientific Jury for a procedure for the academic position of **"Professor" at Plovdiv University** in the Area of higher education "3. Social Sciences, Economics, and Law," Professional field "3.7 Administration and Management (Quantitative Methods and Modeling in Management)," announced for the needs of the Department of Management and Quantitative Methods in Economics at FESS.

Only one candidate has submitted documents to participate in the announced procedure: ***Associate Prof. Dr. Tanya Petrova Yankova-Lilova*** from Plovdiv University "Paisiy Hilendarski". The set of materials submitted by the candidate on paper ***is in accordance*** with the Regulations for the Development of Academic Staff at Plovdiv University and includes the following documents:

- A standard application to the rector for admission to the procedure;
- Curriculum vitae in European format;
- Higher education diploma with a master's degree with an appendix (original and copy) or a notarized copy;
- Diploma for educational and scientific degree "doctor" (original and copy) or notarized copy;
- Diploma (certificate) for the academic position of "Associate Professor" (original and copy) or a notarized copy, or an Order of the rector (director) of the higher education institution or scientific organization confirming the appointment to the academic position of "Associate Professor";

- List of scientific works;
- Scientific works (copies of publications);
- Certificate of compliance with the minimum national and additional faculty requirements (if any);
- Declaration of originality and authenticity of the attached documents;
- Abstracts of the materials under Article 76 of the LASD (in Bulgarian and a foreign language);
- Self-assessment of contributions;
- List of citations;
- Separation protocols (if any);
- Document (certificate) for work experience;
- Documents for academic work;
- Documents for scientific research activities;
- Documents in accordance with the additional requirements of the respective faculty;
- Other additional documents.

The candidate, Associate Prof. Dr. Tanya Yankova, has submitted a total of 22 scientific publications, including 17 articles and extended articles indexed in global scientific databases (Scopus, Web of Science). A list of scientific publications for the procedure is attached as well as a report on the fulfillment of the additional criteria for the evaluation of candidates participating in procedures for academic position of "Professor" at FESS, Plovdiv University "Paisiy Hilendarski." The scientific works presented for this procedure do not repeat those related to the acquisition of the academic degree of "doctor" and those presented for the procedure for the academic position of "Associate Professor."

2. Brief biographical information about the candidate

Assoc. Prof. Dr. Tanya Yankova graduated with a degree in Mathematics in 1994 from Plovdiv University "Paisiy Hilendarski," Faculty of Mathematics and Informatics, and from 1994 to 2005 she was a part-time teaching assistant at the same faculty for courses in Mathematics, Probability Theory, Mathematical Optimization, etc. From 1995 to 2011, she also taught various subjects (Applied Mathematics, Quantitative Methods in Economics, Calculus, Statistics, etc.) at other universities, including the Technical University of Sofia, the University of Food Technologies in Plovdiv, and the European College of Economics and Management in Plovdiv. From 2000 to 2009 she was a programmer (2000-2002) and research associate (2002-2009) at the Institute of Management and Systems Research at the Bulgarian Academy of Sciences (currently the Institute of Robotics), where in 2007 she defended her doctoral dissertation in the Scientific Field "Automation of Engineering Work and Automated Design Systems."

According to the certificate provided by PU, the candidate has 25 years of total work experience, including 16 years of teaching experience: since 2009, she has been working at the FESS, PU as a mathematician (2009-2010), assistant (2010-2011), senior assistant (2011-2016) and associate professor in PF 3.8 "Economics" (Quantitative Methods and Modeling) since 2016. She teaches a number of disciplines in the field of quantitative methods and applied mathematics, and her research focuses on the applications of quantitative methods and mathematical modeling in management, business, and social research, participating in a number of university and national projects focused on relevant subject areas.

3. General description of the candidate's activities

Assessment of the candidate's teaching and pedagogical activity

According to the information provided by PU on teaching activity over the last 5 academic years, the candidate's classroom activity amounts to over 200 hours of lectures and 130 hours of seminars per year on average. Assoc. Prof. T. Yankova has taught courses in Quantitative Methods in Management, Applied Mathematics, and Financial Mathematics to students from various majors at FESS, and has published a self-authored textbook entitled "*Differential Calculus for* Economists" (*FESS Textbook Series, Book 1, University Press "P. Hilendarski," Plovdiv, 2015*). According to the attached reference, Assoc. Prof. Yankova has worked an average of 60 hours per year out-of-class duties participating in examination committees and providing scientific guidance to doctoral students, having been the scientific supervisor of one doctoral student who obtained a PhD in Economics, doctoral program "Economics and Management (Industry)" at the FESS at PU.

The candidate also carries out targeted project activities to support the academic work and practical training of students at FESS. According to the information provided on the fulfillment of the additional requirements for the academic position of "Professor," Assoc. Prof. Yankova participates in the "*Student Internships*" Project of the Ministry of Education and Science as an academic mentor (Phase 1) and as a functional expert (Phase 2). She also participates in the faculty project "*StuEDU: Integrated Approach and System for Assessing Key Skills and Student Profiles*" (2025-2026).

Assessment of the candidate's scientific and applied scientific activity.

For participating in the procedure for taking the academic position of "Professor," the candidate Assoc. Prof. Tanya Yankova has submitted a total of 22 scientific publications, including 1 monograph, 14 studies, and 3 articles (co-authored, indexed in the global bibliographic databases Scopus and/or Web of Science), 3 published conference papers for scientific forums, and 1 university textbook supplement. Only 3 of the publications are in Bulgarian (monograph, textbook, and report

in a scientific conference proceedings), while all others are in English, which testifies to the wide dissemination abroad of the candidate's research results. The monograph on "*Mathematical Modeling in Economic Research – Selected Methods and Approaches*" was published in 2025 by the University Publishing House of Plovdiv University "Paisiy Hilendarski" and is 216 pages of size.

According to the submitted report on the fulfillment of the national minimum requirements (NMR) for acquiring the academic position of "Professor" in PN 3.7 "Administration and Management," as well as a report on the additional requirements of FESS, Assoc. Prof. Dr. T. Yankova has presented elements and activities related to her candidacy that exceed the minimum required thresholds, including a score of 833 points (with a minimum threshold of 550 points), particularly in section D: 228 points (min. 200), in section E: 175 points (min. 100), and in section F: 280 points (min. 100). In terms of additional requirements, the significant excess of points should be noted concerning the indicator "*1.7. Participation in* a *scientific or educational* project" (150 points with a minimum threshold of 20 points), as well as the fact that the required score for indicator *"1.3. Articles published in scientific journals, referenced and indexed in other international databases (IDEAS/RePEc/, CEEOL, EBSCO, ProQuest, EconLit, etc.)*" is provided by points from publications indexed not only in the scientific databases specified in the indicator, but also in the global databases Scopus and/or WoS.

Assessment of contributions and citations

The scientific works presented by Assoc. Prof. Tanya Yankova for the procedure for the academic position of "Professor" at the FESS at PU contain a number of contributions of various nature (scientific, scientific-applied, and applied). The major of them can be summarized in the following thematic areas:

- development of new and modified frameworks for multi-criteria decision-making methods in conditions of uncertainty, which increase the accuracy, robustness, and applicability of models when working with subjective and uncertain expert assessments (publications No. 2, 3, 9, 10, 11, 20);

- integration of a set of methods (fuzzy logic, statistical methods, machine learning, decision-making theory) into unified analytical frameworks through an interdisciplinary approach combining classical statistical methods, fuzzy sets, structural modeling with equations, machine learning methods, and multi-criteria analysis to study multifactorial and dynamic socio-economic processes (publications No. 1, 2, 8, 11, 12, 13, 15, 16, 18);

- development of conceptual and analytical models for assessment and benchmarking, including new frameworks for static comparison and dynamic tracking, enabling continuous monitoring, assessment, and justification of management decisions (publications No. 1, 3, 9, 11, 20);

- enriching research in the field of digital transformation, Industry 4.0 and 5.0, including simulation modeling; impact of IoT and generative Artificial Intelligence on the productivity, competitiveness, and sustainable development of industrial systems, SMEs, and the tourism sector (publications No. 7, 17, 21);

- enriching the conceptualization and empirical modeling of consumer behavior and the adoption of digital technologies, including developed and empirically grounded models for analyzing attitudes, satisfaction, and mechanisms for the adoption of e-commerce and management techniques, digital payments, digitized tourism services (publications No. 12, 13, 15, 16, 17, 18);

- expanding the scope of decision-making theory to socially significant areas, including quantitative models and analytical frameworks for management decisions in education, public health, environmental sustainability, and nutritional behavior, demonstrating the broad applicability of intelligent decision support methods (publications Nos. 5, 6, 11, 18);

- methodological contributions in the field of empirical analysis in education and intelligent assessment, including the development of innovative models for early detection of students at risk; IoT-based learning environments; frameworks for AI-based assessment aimed at personalization, etc. (publications No. 2, 4, 8, 14, 19).

The main objective of the monographic work presented for the procedure is to propose a theoretical and applied field that allows for the analysis and adaptation of key models for optimization, forecasting, and decision-making in real management problems. As a result of a systematic study of contemporary quantitative methods and models applicable in economics and management, the work contributes to the enrichment of knowledge in the field of economic-mathematical modeling, helping to improve the analytical tools of management sciences. The object of study is economic processes, objects, and phenomena that can be successfully studied through mathematical modeling, and the subject matter covers the basic mathematical methods for modeling and optimization oriented toward solving specific economic problems.

The monograph presents different classes of models along with their specifics, advantages, and limitations in solving typical analytical problems. It focuses on dynamic market models, mathematical approximation techniques, linear optimization models and methods for solving them, the approach to modeling using fuzzy sets, etc. Emphasis is put on the need to apply quantitative tools, justifying the natural interconnection between theoretical approaches, modeling, and practical analytical techniques aimed at supporting management decision-making.

The citation report presented includes citations from only two of the publications submitted for the procedure (numbers 2 and 3 on the list). The verification of the candidate's citations record shows

remarkable results – for example, according to Scopus data, the total number of citations (excluding self-citations) is 488, of which 480 are after the first habilitation (2016), with a Hirsch index value of h=14. For the period 2021-2025 alone, the average annual number of citations of the candidate's works in the Scopus database is 86. Similarly, according to data from Web of Science (h=10), the total number of citations after 2016 amounts to 310, with an average annual number of 56 citations for the period 2021-2025. These results demonstrate the undisputed popularity of the candidate's works among the international scientific community with interests in the above-mentioned areas of application of quantitative analysis in management and economics.

4. Assessment of the candidate's personal contribution

Based on the above assessment, it can be concluded that the candidate has the academic training and competencies that played a significant role in the creation of the publications submitted for participation in the procedure for the academic position of "Professor." Insofar, as no evidence of ethical misconduct in the scientific and publishing activities has been detected, it can be assumed that the stated contributions are personal provided by the candidate, achieved in conditions of active interaction within interdisciplinary scientific teams.

5. Critical remarks and recommendations

I have no critical comments about the candidate. I would make one recommendation: to continue her efforts to implement up-to-date and modern research approaches and technological solutions that allow for a more successful link between the results of scientific activities and the need to update the educational content of the disciplines taught.

6. Personal impressions

I have no personal impressions of the candidate. The information obtained through the procedure provides me by ground to conclude that Assoc. Prof. Dr. Tanya Yankova is an established scholar in the field of Quantitative Methods in Management, who has demonstrated competencies for successful work and interaction with colleagues in the relevant scientific teams.

CONCLUSION

The documents and materials submitted by Assoc. Prof. Dr. Tanya Petrova Yankova-Lilova meet all the requirements of the Law on Academic Staff Development (LASD) in the Republic of Bulgaria, the Regulation on the Implementation of LASD, and the Regulation on the Academic Staff Development at Plovdiv University. The candidate has submitted a sufficient number of scientific works, other than those used for the defence of the doctoral degree and for the procedure for academic position of "Associate Professor". The candidate's publications **contain original scientific and applied contributions** that have received international recognition, with a significant portion of them published in journals and outlets issued by prestigious international academic publishers. The candidate's scientific and teaching qualifications are beyond doubt. The results achieved by Assoc. Prof. Dr. Tanya Yankova in her teaching and research activities **fully comply** with the specific requirements of the Faculty of Economic and Social Sciences, adopted in connection with the Regulations of Plovdiv University concerning the application of the Higher Education Act.

After reviewing the scientific works and other materials submitted for the procedure, as well as the scientific and applied contributions contained therein, **I consider it reasonable to give a positive assessment** of this candidacy and recommend that the Scientific Jury prepares a report-proposal to the Faculty Council of the Faculty of Economic and Social Sciences for the election of Assoc. Prof. Dr. Tanya Petrova Yankova-Lilova to the academic position of "Professor" at Plovdiv University "Paisiy Hilendarski" in the Professional Field "3.7 Administration and Management" (Quantitative Methods and Modeling in Management).

09.03.2026

Reviewer: .....
(signature)
(Prof. Dr. Matilda Alexandrova)
(academic degree, name, surname)