REVIEW

According to a competition for filling the academic position "Professor",
professional area 5.13 General engineering,
discipline "Production Management",
announced in the State Gazette, no. 2/05/01/2024
for the needs of Technical University - Varna,
Department of Industrial Management

Candidate in the competition: Assoc. Prof. Dr Tanya Pencheva Panayotova, Eng

Reviewer: Prof. Dr. Eng. Dimitar Damianov, TU - Sofia

1. General conditions and biographical data

Prof. Dr. Eng. Tanya Panayotova was born in the city of Varna and completed her higher education in 1994. at the Technical University of Varna, majoring in "Technology of Mechanical Engineering and Metal Cutting Machines". Until 2005 works in various positions at TU-Varna. In 2005 defends a dissertation on the topic "Modeling of organizational relationships in the development of new complex project tasks in conditions of competitive engineering". In 2008 takes part in a competition and holds the position of "Docent" in organization and production management. Since 1996 until now he continues to work at the Technical University - Varna. The disciplines taught by her are mainly on production organization and management, competitive engineering, industrial company management and innovation. She was the head of the department for one term and is currently the head of the center for doctoral programs. He has accumulated extensive experience as a contractor and manager and knows how to work both independently and in a team.

2. General description of the presented materials

36 publications were submitted for review in this competition of which one monograph as a habilitation thesis, 2 scientific and publication in publications that are referenced and indexed in world-renowned databases of scientific information (Scopus) and 33 scientific publications in peer-reviewed journals or in edited collective volumes. These publications do not repeat those presented for the acquisition of "Doctor" and JSC "Docent". The arrangement of the publications and their summaries is made according to the presented list of publications on the competition and the numbering therein.

From the reviewed documents submitted for participation in the competition for the academic position of "Professor", it is clear that Assoc. Prof. Dr. Eng. Tanya Panayotova is equally a researcher, analyst, performer and teacher in several scientific fields. They, in turn, provide the opportunity to appear as a

scientist with very good skills and approaches in the complex interdependence between theory and practice.
The candidate for professor, Assoc. Prof. Dr. Tanya Panayotova participated in the competition with publications for the fulfillment of the minimum national requirements or a total number of points 2418.05 with minimum required 720 points (Table 1).

Minimum required points by groups of indicators for occupying the academic position "Professor", area 5. Technical sciences, professional direction 5.13. General engineering

Table 1

A group of indicators	Content	Professor	Total number of points of Assoc. prof. Dr. Eng. T.Panayotova
A	Indicator 1	50	50
B	Indicator 2	-	- -
IN	Indicator 3 and 4	100	100
D	Sum of indicators 5 to 11	200	436.72
D	Sum of indicators from 12 to 15	100	156
Well	Sum of indicators from 16 to 28	150	263.33
Z	Sum of indicators 29 to 41	1 2 0	1412
	Total Points:	**7 2 0**	**2418.05**

- Monographs - **1** issue on the topic "Investigating the impact of intellectual capital on the value of an industrial enterprise"
- Scientific publications (articles and reports) – **35** issues.

Scientific publications can be classified by type, value, significance, place of publication, language, number of co-authors, etc.: From the above I conclude that she works actively in modern and promising scientific directions. She has established extensive internal and international scientific contacts on the modern problems of the organization and management of production. The scientific pedagogical activity of the candidate for professor is mainly distributed in the following three directions:
1. In the field of production and operational management of industrial enterprises. (D8.1, D8.2, D8.10, D8.25)
2. In the field of engineering of industrial enterprises. (G8.18, G8.6, G8.7)
3. In the field of competitiveness of industrial enterprises. (B5.1, D8.8, D8.14, D8.15, D8.16, D9.19, D8.20, D8.29, D8.28.)

3. General characteristics of the scientific research and scientific applied activity of the candidate

Assoc. Prof. Dr. T. Panayotova carries out very intensive research work with students and doctoral students. She supervised and supervises a total of 7 doctoral students, of whom 2 defended their doctoral degrees, three of whom have a second supervisor from another professional field.

She participated and participates as a performer in 11 national and international educational projects, one of which she is the head of. He takes part in 2 international scientific research projects as a contractor.

The presented scientific output is significant for science and practice. The scientific, scientific-applied and applied conclusions and proposals contained in the works of the candidate are essential for the development and enrichment of scientific research in the field of production organization and management.

It is not documented, but there is the use in the educational process of presentations and proposals, which are the product of her scientific research. Consultations were given to business companies to improve business management processes, etc. On her initiative, a modern computer laboratory was built with electronic equipment donated from Germany.

4. Evaluation of the pedagogical preparation and activity of the candidate

Educational and pedagogical activity (work with students and doctoral students)

Table 1.

School year	Auditory learning activity (AUD) for OKS Bachelor					IAUD	Total UD
	Lectures	Laboratory exercises	Seminar exercises	KP/KR	Total		
2022-2023	510.8				510.8	83.1	593.9
2021-2022	400	34.6		37	471.6	92.2	563.8
2020-2021	434	46.4	15	23	518.4	102.5	620.9
TOTAL	**1344.8**	**81**	**15**	**60**	**1500.8**	**277.8**	**1778.6**

The planned and reported educational activity for the Bachelor (BL) and English language education (AL) for the last three academic years is presented in table 2.

Table 2.

A YEAR	BL		AL	
	PLAN	REPORT	PLAN	REPORT
2022/2023	689.4	593.9	0	-
2021/2022	571.6	563.8	5.5	5.5
2020/2021	728.6	620.9	36.7	33.7
Total	**1989.6**	**1778.6**	**42.2**	**39.2**

Table 3 presents the planned and reported educational activity in “Master” BL and AL.

Table 3.

YEAR	BL		AL	
	PLAN	REPORT	PLAN	REPORT
2020/2021	191.4	190.9	10.5	10.5
2021/2022	425.9	419.2	18.8	18.8
2022/2023	234.0	218.00	-	

According to the information provided in the references for participation in the competition, the candidate Assoc. Prof. Tania Panayotova fulfills the standard for academic employment at TU-Varna. The fulfillment of the standard for education and employment is ensured by the education of students in OKS "Bachelor" - full-time and part-time forms of education, more than 7 disciplines

During the same period, she led classes for foreign students on international exchange under the Erasmus + Program, incoming mobility.

For the last three academic years, she has supervised successfully graduated students in bachelor's or master's programs.

She participated and participates as a performer in 11 national and international educational programs.

5. Basic scientific and scientifically applied contributions

I accept all contributions presented in Prof. Panayotova's reference. They boil down to: Hypothesis, scientific, scientific-applied and applied, with which new aspects of already existing scientific tasks and problems have been proven. The contributions contained in the publications submitted for participation in the competition for professor can be grouped into the following main groups; Hypothesis - 1 piece, scientific contributions - 8 pieces, scientific and applied - 14 pieces, applied contributions - 5 pieces. and educational methodical contributions - 3 pcs. I accept all contributions, the most important of which are:

A. HYPOTHESIS

Based on an in-depth analytical study and the experience gained so far, the technical-economic and methodological essence of the scope of Competitive Engineering (CI) was analyzed. As a result, it has been theoretically proven and practically verified that CI organizational forms can adapt conventional engineering components in the process of their development, as hybrid solutions, but with increased efficiency. This hybridity essentially manifests itself as a constant flexible impact or regularity in all stages of CI development. There are conditions for the formation and manifestation of a new organizational-methodological component in the development of CI, which can be considered as "**Hybrid Flexibility".** The conducted studies prove the manifestation and presence of this methodological component in the

development stages of CI. (**Publications: D 8.1, D 8.6, D 8.7, D 8.18, D 8.22, D 8.32, E.24.2)**

The contributions contained in the publications submitted for participation in the competition for professor can be grouped into the following main groups:

In 1. Scientific contributions

1.1. Based on an in-depth analysis of the main characteristics of the market environment, the need for a new, advanced concept for the construction and operation of the production subsystem has been established with a view to increasing the competitiveness of the enterprise and the challenges facing the Industry 4.0 era. **(Publication: D.7.1., D.8.1, D.8.4., D.8.10)**

1.2. As a result of studies and analysis, it has been theoretically proven that the production capacity is a key parameter of the enterprise and its effective planning and management is the basis of the success and competitiveness of any production organization. This gives rise to the need to identify, analyze and evaluate those key factors that have a strong influence on the processes of planning and management of production capacity, their interrelationship and potential consequences. On this basis, the Interpretive Structural Modeling (ISM), Structural Interaction Matrix (SSIM) and Analytical Hierarchy methods are considered to investigate the relationship between factors and their impact on production capacity planning and management. (**Publication: D.7.2, D.8.1**)

1.3. It has been found that one of the most dynamically developing areas of knowledge is that of project management (PM) - both in the field of business and in the field of public administration. New concepts and approaches are proposed and theoretically justified , which ensure increasing participation of customers in the creation of added value. Among them are: "Mass Customization", "Co-Creation", "Customer Order Decoupling Point/ CODP", "Prosumer 7" and others, thanks to which the competitiveness of business organizations increases significantly. The CODP concept has been proven to be a useful project management (PM) tool for planning and executing individual customer orders, and according to the CODP position, the customer is "allowed to walk in" through the operational process using various selection options within the CODP itself (**Publication: D.8.21, D.8.23)**

1.4. The use of methods and techniques such as the project structure matrix (DSM) is proposed with improvements made in the approach regarding the interpretation of the types of tasks in the development of a model that helps determine the places in the project implementation process to be realized together with the customer. The model makes recommendations for determining the boundaries of client intervention based on interdependencies between project activities during the study of project processes. (**Publication: D.8.21)**

1.5. It has been proven that CODP positioning options have a direct impact on the definition of the enterprise's operational strategy, and, in addition, on the organization and management of production processes in its units. As a result of summarizing the various approaches and existing methods for solving the

problem, the Analytic Hierarchy Method (AHP) is proposed in solving such a problem. Examples are presented of selecting criteria to determine the reasons for and against during the CODP position decision-making process. The proposed approach requires the decision to be made in two stages: (1) to build a complete system of decision criteria regarding the CODP position and (2) to use AHP as a method/toolkit from which the decision will be based on a large number of criteria and sub-criteria **(Publication: D. 7.1)**

1.6. The development of Competitive Engineering (CI) has been tracked and its development guidelines have been systematized as a complete complex integrated process. It was established that CI is characterized not only by the general features of the complex digitization of design and production activities in the industrial enterprise, but also by the specific features related to the engineering essence of the problem. The place of CI at the stage of the general digitalization of design and production activities in an industrial enterprise has been clarified and determined. Special attention is paid to new software products and their compatibility with the requirements of modern production realities, such as digitization, artificial intelligence and virtual reality. **(Publication: D.8.9., D.8.32).** An overview of the development of the organizational forms used in the virtual design of industrial products is made. Variant solutions for different situational product behaviors are presented . The modern toolkit for virtual design is reviewed, as well as the trends in the development of this problem. Particular attention is paid to the organizational forms used in the various stages of functioning of the system for virtual design of industrial products **(Publication: D.8.22).**

1.7. Based on an in-depth analysis of theoretical positions and world experience, it has been proven that the company, as a center of interests, must satisfy the requirements of multiple groups of interested persons and, from this point of view, balance between short-term and long-term goals. The assessment of value is essential not only for the development of the individual enterprise, but also for the directions and growth rates of each industry and the economy as a whole. The main components to be managed are growth and return on invested capital. (**Publication: Q. 3.1.)**

1.8. The value approach in enterprise management is proposed and theoretically justified. The possible situations and determination of the necessary degree of value creation were analyzed, taking into account the influence of intellectual capital. On this basis, a conceptual model of the interaction between the Economic Value Added (EVA) and the Value Added by Intellectual Capital (VAIC) models is proposed. **(Publication: C. 3.1, D.8.3.)**

2. Scientific and applied contributions

1. In the field of production and operational management of industrial enterprises - 4 pcs.
2. In the field of engineering of industrial enterprises -3 pcs .

3. In the field of competitiveness of industrial enterprises - 7.

3. Applied contributions - 5 pieces.

There are citations in scientific publications, referenced and indexed in world-renowned databases of scientific information (WoS/Scopus). Citations are in reports and articles.

6. Significance of contributions for science and practice

My assessment is that the contributions are the personal work of the candidate and are significant for theory and practice. There are separate documents for works that are co-authored. I believe that in terms of volume and quality, the scientific-teaching, scientific-research and scientific-applied activities of Assoc. Dr. Eng. Panayotova fully satisfy the requirements for occupying the academic position of "Professor".

7. Critical notes

I have no significant critical remarks with which to dispute the main scientific, scientific-applied and applied contributions of the candidate. I have noticed minor technical errors that need to be fixed.

I recommend the candidate in the future to focus her efforts on the latest forms of manifestation of digitization and use of innovation models for practical application of scientific contributions from developments.

8. Personal impressions

I personally know Associate Professor Tanya Panayotova, Ph.D. Eng. and my assessment is that she is a well-established scientist in the field of organization and management. Hard-working, correct and proactive, she knows how to deal with quite complex tasks from educational and research management. It is large-scale in the implementation of innovative forms of work in its organizational activity. Able to work in a dynamic environment.

CONCLUSION

I propose Assoc. Dr. Eng. Tanya Pencheva Panayotova **to be selected for the academic position "Professor"** in a professional direction 5.13 General engineering, discipline "Production management".

25/05/2024

Revie
/Pro

Damianov/

Заличена информация
по Регламент (ЕС)
2016/679