



OPINION

**for Chief Assistant Professor Neli Todorova Keranova-Ivanova, PhD
by competition for the academic position "Associate Professor"
in the Faculty of Economics at the Agricultural University - Plovdiv
The statement was prepared by: Prof. Dr. Nikolay Veselinov Kyurkchiev**

By order No. RD-16-405 of 20.03.2024 of the Rector of the Agricultural University - Plovdiv, I have been designated as a member of the Scientific Jury in connection with the announced in SG, no. 7/23.01.2024 competition for the academic position of "Associate Professor" at the Agricultural University - Plovdiv in: field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.5. Mathematics (Mathematical modeling and application of mathematics).

To participate in the announced competition for "Associate Professor" he submitted documents Chief Assistant Professor Neli Todorova Keranova-Ivanova from the Department of Mathematics and Informatics at the Faculty of Economics at the Agrarian University - Plovdiv.

I have received the following documents:

1. Application for admission to competition;
2. Copy of the advertisement in the "State Gazette";
3. Autobiography;
4. Higher education diploma - original and a copy certified by the receiving official;
5. Diploma for the educational and scientific degree "doctor" - original and a copy certified by the receiving official;
6. Order of the rector (director) of a higher school or scientific organization to confirm the selection for employment of JSC "principal assistant";
7. General list of publications;
8. List of publications after the defense of a doctoral dissertation and a copy of them;
9. Summaries of works after the defense of a doctoral dissertation;
10. List of citations;
11. Information on impact - factor;
12. Reference to contributions in scientific works (including separation protocols of all publications with co-authors);
13. References to:
 - 13.1. teaching experience;
 - 13.2. study employment;
 - 13.3. participation in projects;
 - 13.4. published textbook;
14. Reference – declaration of fulfillment of the minimum national requirements under Art. 2b, para. 2 and 3 of the ZRASRB;
15. Declaration of originality and authenticity

The required documents for participation in the competition have been submitted in an orderly form.

The candidate – Chief Assistant Professor Neli Todorova Keranova-Ivanova, presented herself in the competition for "Associate Professor" with 10 scientific publications and Monographic study: Application of mathematical and statistical methods in agrobiological research, Academic Publishing House of the Agrarian University, Plovdiv, 2022

The works presented were published as follows: 1 (Q3); 6 articles (Q4) - based on the Web of Science database, and 3 articles in peer-reviewed journals.

The presented publications are articles published after acquiring the academic position, "Chief Assistant" by the candidate, which satisfies the requirements in the sense of the ZRASRB, the Regulations for the implementation of the ZRASRB and the Rules of the Agricultural University for the implementation of the ZRASRB.

Main scientific and applied results of the candidate:

The scientific works of the candidate, presented in the competition, can be grouped into several conditional thematic directions, as follows:

- Dispersion analysis, as a tool for scientific research in agronomy;
- Application of cluster analysis in agricultural studies
- Correlation analysis as a tool for research in agronomy;
- Application of regression analysis in viticulture, fruit growing and poultry farming;
- Factor analysis and application of model building methods.

I will not dwell here on the specific contributions in each of the articles for participation in the contest.

I will only note that the mathematical processing and data analysis carried out contribute to:

- modeling the impact between specific indicators through regression models and determining the credibility of the established impact, which opens up an opportunity for researchers from the agrarian field for future studies;
- correct analysis of the results of the mathematical and statistical processing and understanding of the degree of influence and significance of the factors in the course of agrobiological processes, grouping/selection of signs, etc.;
- reliable information for scientists and researchers regarding the improvement and optimization of the indicators of the studied lines/forms (for example, the optimality of the studied tobacco lines and the degree of effectiveness of their selection activity);
- a meaningful choice of clustering procedures, with the possibility of logical separation/grouping of varieties according to similarity/difference by certain indicators;
- correct logical separation, grouping, filtering of data characteristic of a given agrobiological process by applying correlation and factor analysis.

Obviously, the provided wide range of examples of the application of mathematical and statistical methods in agrobiological research can be used in master's and doctoral programs of the Agrarian University-Plovdiv, for example "Statistical methods and software for data processing in agricultural science and practice".

It is my opinion that extensive research has been done in the above tentative directions.

This gives me the reason to give a very high rating to the works submitted for participation in the competition.

From the presented impressive reference of scientific publications of the candidate, which do not repeat those presented for the ONS "doctor", it can be concluded that Dr. Keranova is a well-established specialist in the field of statistical analysis.

I will explicitly note that all the publications presented in the contest are joint.

Allocation protocols between co-authors are attached.

Some notes and recommendations:

I will explicitly note that article 1 (from the list of publications) is a contribution in general to the field of "growth theory".

In this regard, when analyzing reaction-kinetic schemes, the candidate can also use other approximation models (besides the classic logistic model), for example, modifications of the Gompertz, Log-logistic, etc. models, which can lead to a better approximation of specific classes of experimental data.

The degree of "saturation" can be measured not only in terms of the classical Minkowski distance, but also in terms of other metrics, for example the Hausdorff metric.

Of course, these are only recommended guidelines for the candidate's future research in the field of mathematical modeling.

As an immediate scientific task for the candidate, it should be the strengthening of independent scientific research.

I have not detected any "plagiarism" in the candidate's works in the sense of ZRAS in the Republic of Bulgaria.

The works presented have wide national and international recognition.

For participation in the competition, the candidate submitted 8 independent citations, of which 5 in Scopus or WoS.

In general, the minimum national requirements for the required points by groups of indicators for acquiring the academic position "associate professor" have been met.

The additional requirements of the Faculty of Economics at the Agrarian University - Plovdiv for the acquisition of the academic position "Associate Professor" have also been fulfilled.

It is clear from the official note issued by the NPD division at the PU that Chief Assistance Professor Keranova-Ivanova participated in 3 research projects.

CONCLUSION.

From everything that has been said so far about the candidate's works presented in the competition, it is clear that they have received sufficient scientific contributions in terms of quantity and quality.

Taking into account the very good teaching and learning activity, I am fully convinced that Chief Assistant Professor Neli Keranova-Ivanova, meets the requirements of the ZRASRB, the Regulations for the Implementation of the ZRASRB, the Rules of the Agricultural University for the Implementation of the ZRASRB for the occupation of the academic position "Associate Professor".

Therefore, my conclusion for filling the academic position "Associate Professor" announced by the competition from Chief Assistant Professor Dr. Neli Todorova Keranova-Ivanova is POSITIVE.

I propose to the honorable scientific jury to unanimously propose to the FS of the Faculty of Economics at the Agrarian University - Plovdiv to choose the candidate Chief Assistant Professor Dr. Neli Todorova Keranova-Ivanova for the academic position "Associate Professor" in: field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.5. Mathematics (Mathematical modeling and application of mathematics).

29.04.2024

Signature:

/Prof. Dr. Nikolay Kyurkchiev/