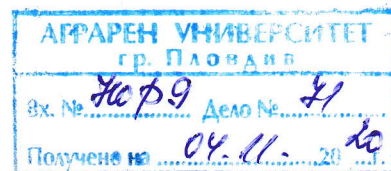


## SCIENTIFIC OPINION



on a dissertation for obtaining the educational and scientific degree "Doctor" in the field of higher education **3. Social, economic and legal sciences**, professional field **3.8 economics**, scientific specialty **Organization and management (agriculture and subsectors)**.

**Author of the dissertation:** Maria Sasha Dukoska, PhD student in self-study at the Department of Management and Marketing at the Agricultural University, Plovdiv

**Topic of the dissertation:** "Sustainable development of viticulture in Northern Macedonia"

**Reviewer:** Associate Professor Georgi Petrov Georgiev Ph.D, University of Agribusiness and Regional Development; 3. Social, economic and legal sciences, professional field 3.8 Economics, the scientific specialty "Finance, money circulation, credit and insurance", appointed as a member of the scientific jury by order № RD-16-794 / 07.10. 2020 by the Rector of AU.

### 1. Relevance of the problem.

The problem concerning sustainable development in the agricultural sector is undoubtedly a topical issue, which in recent years has increased its importance, both for individual countries and globally. Specifically, the development of viticulture in the Republic of Northern Macedonia over the past decade has developed in the spirit of harmonization with the requirements of the Common Agricultural Policy of the EU and there are clear changes related to restructuring wine production, increasing vineyards, winefication control and more. In this sense, I find the topic dissertable and relevant.

### 2. Purpose, tasks, hypotheses and research methods.

The doctoral student has formulated precisely and objectively the research goal, tasks and conceptual thesis of the dissertation.

The research methodology used in the dissertation is diverse and includes: holistic-integrated approach, SWOT analysis, systematic and graphical analysis, index method, multi-criteria expert evaluations, focus group method, survey, statistical techniques and others. It is fully consistent with the possibilities for proof of the formulated thesis.

### 3. Visualization and presentation of the obtained results.

In structural terms, the presented scientific work consists of an introduction, three chapters, a conclusion, a list of references and appendices. The dissertation is developed in a volume of 139 pages, of which 126 are the main text. The study is illustrated with 34 figures (32 of which were developed by the author and the rest are cited), 13 tables in the exposition and a significant number of unnumbered in the appendix.

### 4. Discussion of the results and used literature.

The main result of the study is the development of a holistically integrated system of indicators, allowing to assess the quantitative sustainable development of viticulture in the

Republic of Northern Macedonia. The application of the integrated methodology assesses the impact of production and management activities of farms on the environment, social relations, economic indicators and institutional conditions, but also reveals regional differences, features existing between farms, differentiated by legal status and size.

The presented dissertation is a complete, in-depth monographic study of the possibilities for sustainable development of viticulture in the Republic of Northern Macedonia. For this purpose, the doctoral student has performed a significant bibliographic review of theoretical and research publications. A total of 106 publications in English are listed in the list of used literature sources.

## **5. Scientific Contributions.**

At the end of the abstract, doctoral student Maria Dukoska has attached a reference in which she synthesizes the results of her dissertation to five findings with the nature of scientific and scientific - applied contributions.

### **Scientific contributions**

- A conceptual framework has been developed to assess the main factors determining the sustainable development of viticulture in Northern Macedonia.

### **Scientific and applied contributions**

- The sustainability of the wine sector is analyzed and assessed by its individual components (pillars);
- The needs of the vineyards regarding their sustainable development in the future have been identified;
- The opportunities for sustainable development of the sector in the future have been identified.

I accept the contributions referred to above as reliable, real and proven in the dissertation.

## **6. Critical remarks and questions.**

It is incorrectly written in table 9 of the abstract "multiple regression" instead of "correlation coefficients", also incorrectly is used "Correlation coefficient  $R^2$ " instead of "Coefficients of determination  $R^2$ ".

The names of the coefficients for asymmetry and kurtosis are incorrectly named as „изтегленост“ and "къртосис" in the abstract for all tables (Tables 4, 5, 6, 7 and 8) containing indicators of descriptive statistics.

The names of mode, kurtosis and rank are wrong written in the dissertation in English for all tables (tables 4, 5, 6, 7 and 8) containing indicators of descriptive statistics. Instead of mode (the statistical concept of value with the highest empirical frequency) is used fashion, which means fashion as style, instead of rank (rank, scope of variation) is used wrong coverage, etc.

On the page 23 of the abstract, the calculated values of the coefficients of determination  $R^2$  in Table 9 (Results of the factor correlation analysis for the individual pillars of stability) are quite low (varying between 0.10 and 0.20).

Are these results statistically significant and can they be used for reliable conclusions?

What is the economic meaning of the indicator "adapted  $R^2$ " used in Table 9?

## **7. Published articles and citations.**

A total of 9 publications for the period 2014 - 2019 were presented. Seven of them were published in the Republic of Northern Macedonia, and the other two at scientific forums in the



Republic of Bulgaria and Serbia.

From the submitted documentation for the competition it is evident that the doctoral student M. Dukoska meets the minimum national requirements for acquiring the scientific degree "Doctor" (with a required minimum of 80 points the author scores 93 points.)

The presented abstract objectively reflects the structure and content of the dissertation.

### CONCLUSION:

Based on the learned and applied by the doctoral student, different research methods, correctly performed experiments, summaries and conclusions, I believe that the presented dissertation meets the requirements of 3PACPE and the Rules of the Agricultural University for its application, which gives me reason to evaluate it **POSITIVE**.

I allow myself to suggest to the honorable scientific jury to vote positively and award Maria Sasha Dukoska the educational and scientific degree "**Doctor**" in the scientific specialty "Organization and Management" (agriculture and sub-sectors).

Date: 30.10.2020  
Plovdiv

Reviewer:   
(Assoc. Prof. G. Georgiev Ph.D)