TRAKIA UNIVERSITY – STARA ZAGORA

FACULTY OF ECONOMICS

REVIEW

From Prof. Dr. Nadka Stefanova Kostadinova, scientific specialty Economics and Management /agriculture, veterinary-medical activity, management accounting/, Department of Management at the Faculty of Economics of Trakia University – Stara Zagora.

The review was prepared on the basis of: Order No. 681/10.07.2023 of the Rector of the Academy of Economics "D. A. Tsenov" - Svishtov and decision of the Scientific Jury, made at the first meeting, held on 11.07.2023.

Author of the dissertation: Elena Dimitrova Tashkova, Department of "Agrarian Economics", SA "D. A. Tsenov", Svishtov for the acquisition of the educational and scientific degree "Doctor" in the scientific specialty Economics and management /agrarian economics/, professional direction 3.8 Economics.

Dissertation topic: "OPPORTUNITIES FOR APPLICATION OF DIGITAL TECHNOLOGIES IN THE AGRICULTURAL SECTOR"

I.   Brief information about the PhD program and the PhD student

The PhD program is part-time and was opened by the Department of "Agrarian Economics" at the Academy of Economics "D. A. Tsenov", Svishtov. The dissertation is discussed and directed for defense by the same department.

PhD student Elena Dimitrova Tashkova is a computer engineer, graduated with a bachelor's degree in "Computer Systems and Technologies" at Southwestern University "Neofit Rilski" - Blagoevgrad in 2002, then a master's degree in

"Computer Systems and Technologies" in 2013 and in 2019. MA in "National Security" at the same university.

From 01.06.2023 - until now he has been working in the State Fund "Agriculture", Payment Agency, Agricultural Market Mechanisms as Chief Expert.

He speaks excellent English, Italian, Russian and French at a very good level. Has excellent communication and computer skills.

II.   General characteristics of the dissertation

The subject of the scientific research is the possibilities of applying digital technologies in the agricultural sector.

Volume - the dissertation submitted for review has a total size of 185 standard pages and consists of an introduction, three chapters, a conclusion, literature and appendices. The material is visualized by 22 pcs. figures and 31 pcs. tables.

The structure (title page, table of contents, introduction, presentation, conclusion and bibliography) and content of the dissertation are in accordance with the requirements of Art. 27, para. 2 of the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

Cited literature – the bibliographic list includes 111 literary information sources, of which 85 Bulgarian, 26 English, including 6 internet sites. There are 3 appendices to the dissertation.

III.   Assessment of the form and content of the dissertation

Relevance of the research – The presented dissertation examines a current and significant problem for the agrarian sector. Some of the more important arguments justifying the need for digital transformations are the challenges of implementing innovative tools in the agricultural sector. The doctoral student focuses on presenting theoretical statements and formulations related to the digitization of agriculture and trends in their practical application.

The object of research was correctly selected – digital technologies, which are expected to increase the efficiency of processes, to create new products and services in the economy, including and in agriculture.

The subject of the scientific research is the possibilities of applying digital technologies in the agricultural sector.

The research thesis and a logical consequence of the topic of the dissertation work – it is necessary to use digital technologies to develop sustainable solutions for current and future challenges in the agricultural sector.

The purpose and tasks of the dissertation work are precisely and clearly formulated, adequate to the object of research, tracking and analyzing the application of digital technologies in the agricultural sector.

The research methodology used, covering different methods and approaches, is suitable for the purpose and tasks of the research, and has been applied correctly.

I believe that the restrictive conditions of the research are correctly set in the dissertation work, namely the research period is limited from 2014 to 2020, as it creates conditions for basing the research on accessible public data, allowing the author's interpretation and making it possible to the state of digitization in the agrarian sector was followed after the measures implemented in this seven-year program period.

The exposition of the dissertation work is presented in three chapters, with a good balance being achieved in terms of their volumes and also of their individual paragraphs. A classic approach of structuring a dissertation with distinguishable and logically linked theoretical, methodological-analytical and project parts is adopted, which in their totality represent a self-completed study.

Chapter one provides an in-depth review of the theoretical aspects of digital technologies. The role of the state in the development of digital technologies in the economy is presented. Existing principle models for the introduction of digital technologies in the agricultural sector have been examined. The doctoral student rightly notes that our country lacks in-depth analyzes of the state and development of

digitization in agriculture and rural areas of Bulgaria, regardless of their great theoretical and practical significance.

Chapter two is dedicated to digital technologies as a tool for digital transformation of the agricultural sector. It sets the conceptual framework for digital transformation in the economy, including in the agricultural sector. The role of the institutions in this process is precisely systematized by presenting the European and national policy for digital transformation of the agricultural sector. Based on general models for the implementation of the so-called fourth industrial revolution the doctoral student is developing a model that is expected to generate economic benefits for agricultural holdings.

In the third chapter, the author's model for digitization in the agricultural sector in the period 2014-2020 is tested. The factors influencing the introduction of digital technologies in agriculture are thoroughly investigated. The PhD student is tracking the successful application of the ONDO Smart Farming digital system in agriculture, for which 6 farms have been studied, one of which shares foreign experience of implementing digital technology, as a result of which the model has been partially approved. The author's recommendations for increasing the benefits of digital technologies in the agricultural sector are precisely and clearly presented.

Each chapter of the dissertation ends with adequately summarized conclusions.

In the **conclusion** of the dissertation, the PhD student presents generalized theoretical propositions, results achieved during the study, formulates main conclusions that prove the thesis and hypotheses of the dissertation.

I believe that the dissertation work is an original and in-depth scientific study, a personal work of the author. The PhD student complied with the rules of scientific ethics by correctly citing the used literary sources. The calculation procedures and the statistical processing of the empirical data were performed correctly. The dissertation work is very well illustrated.

The author's abstract is presented in a form that meets the requirements, reflecting in a volume of 38 pages the content of the dissertation and the main

scientific and applied results achieved. The contribution report correctly reflects the results achieved by the author, which I fully accept.

The dissertation submitted to me for review proves that the PhD student has acquired in-depth theoretical knowledge of the studied issue and has the ability to conduct independent scientific research.

The PhD student has published 3 independent publications on the subject of her dissertation, one of which is in the proceedings of an international scientific-practical conference and two in the annual almanac "Scientific research of PhD students", Svishtov.

IV. Questions, recommendations and notes

I have questions and a recommendation for the PhD student:

In which sub-sectors of the agricultural sector are digital technologies most widely used?

What knowledge, skills and abilities need to be acquired to help create digital operating models applicable in the agricultural sector?

I recommend the PhD student in her future scientific activity to publish her research in specialized, refereed and indexed scientific journals.

V. Conclusion

The dissertation work of PhD student Elena Dimitrova Tashkova on the topic: "Possibilities for applying digital technologies in the agricultural sector" is a completed independent scientific study dedicated to a current economic problem. The set goals and tasks of the research have been successfully fulfilled.

I believe that the dissertation meets the requirements of the RSARB and the Regulations for its application. With conviction, I will vote for awarding an

educational and scientific "Doctor" to Elena Dimitrova Tashkova in the scientific specialty "Economics and Management" /agrarian economics/.

31.08.2023

Stara Zagora

/

Reviewer:

/ Prof. Dr. N. Kostadinova