

REVIEW

Prepared by: Assoc. Prof. Petya Emilova Popova, PhD, scientific specialty 05.02.08 "Application of Computer Technology in Economics", *Department of Business Informatics* at the Tsenov Academy of Economics - Svishtov.

Reason for writing the review: Order No. 324/16.04.2025 of the Rector of Tsenov Academy of Economics - Svishtov, for the appointment of a scientific jury for the procedure for the defense of a dissertation.

Author of the dissertation: Abrar Ashraf - doctoral student in professional field 3.8. "Economics", doctoral program "*Application of Computing Technology in Economics*" at the *Department of Business Informatics* at the Tsenov Academy of Economics - Svishtov.

Topic of the dissertation: "THE POTENTIAL OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE TRANSITION TOWARDS A GREEN ECONOMY".

I. General presentation of the dissertation:

1. *Goal, object and research subject.* The dissertation explores the transformative role of information and communication technologies (ICT) in facilitating the transition to a green economy. The research integrates economic, technological and sustainability perspectives, with special attention to the Bulgarian context as a case study of a country undergoing significant changes in economic and environmental policy. Specifically, the subject of the research is

the transition to a green economy at the global and national levels, and the subject matter is the potential of ICT to accelerate this transition through the implementation of a comprehensive framework for the transition to a green economy.

2. *Volume.* The dissertation is in English and consists of 223 pages. The scientific problem is researched on 200 pages and illustrated in the main text with 9 figures and 33 tables. The list of references consists of a total of 194 literary sources.

3. *Structure.* The dissertation is well structured and contains an introduction, three chapters, a conclusion, list of references.

4. *References.* The list of literature used includes 194 literary sources in English.

5. *Appendices.* There are no appendices to the dissertation.

The dissertation is presented in a form and volume that meets the requirements and criteria for this type of work. Overall, the dissertation is well structured and balanced.

II. Assessment of the form and content of the dissertation

1. Assessment of the relevance of research in the dissertation scientific problem.

The dissertation is dedicated to an extremely topical scientific problem, given the global importance of sustainable development and environmental protection. The object, subject, research thesis, goal and objectives of the study are clearly formulated and logically connected. The author presents ideas and demonstrates an approach to studying how ICT can serve as a catalyst for the transition to a green economy.

2. Analysis of the degree of development of the researched issue

Chapter 1 presents the theoretical foundations of the green economy and the role of ICT for sustainability. The author presents his own definition of the green economy, emphasizing integration, collaboration, inclusion and sustainability. He comments on key challenges facing the future integration of the green economy and ICT.

Chapter 2 examines the challenges and limitations of the linear economy model and explores the potential of ICT for digital transformation within the green economy. It presents both theoretical perspectives and practical solutions to overcome the challenges posed by the linear economy.

Chapter 3 presents a practical analysis of green ICT solutions with a specific focus on their implementation in Bulgaria, compared to developed economies. The author's methodology for implementing ICT-based green economy models in Bulgaria is proposed.

The conclusion summarizes key findings and presents policy implications and recommendations.

The dissertation provides a comprehensive analysis of existing research on the green economy and ICT integration. The author engages with key debates in the field and includes his own perspective and critical analysis.

3. Opinion on the volume of the dissertation work

The volume is suitable for a doctoral dissertation in this area. Some theoretical sections (Chapter 1) could be shorter to strengthen the overall focus on the original findings of the study.

4. Opinion on the quality and quantity of the proposed illustrative material

The dissertation contains numerous diagrams, graphs, and tables that illustrate complex concepts and data. These visual elements improve clarity, but some of them require deeper integration into the text (e.g., explanations of methodology, etc.).

5. Scientific, linguistic and stylistic editing

The dissertation is generally well written, although minor repetitions and logical inconsistencies appear in places.

6. Assessment of the correctness and necessity of statistical processing of empirical data

The dissertation includes empirical data, although there is practically no statistical processing. When statistical methods are used, a precise justification of the methodology is necessary to strengthen the credibility of the findings. The work would benefit from a more robust methodological section that would justify the chosen quantitative approaches.

7. Compliance with scientific ethics

The dissertation adheres to ethical research standards. The citations are correctly cited and there are no obvious plagiarism issues. The report from the anti-plagiarism system proves this finding (4.16%).

8. Opinion on the abstract

The dissertation abstract, which is presented in English and Bulgarian, accurately and completely reflects the work.

III. Scientific and scientific-applied contributions of the dissertation work.

1. Development of existing and/or popularization of new scientific ideas and results

The dissertation has the following contributions in theoretical and practical aspects:

- Developing a conceptual framework for ICT-led transitions to a green economy
- Proposing policy recommendations tailored to the Bulgarian context

- Introducing innovative approaches to digital transformation for sustainability
 - Providing comparative analysis between developing and developed economies in ICT-enabled green transitions
2. *Evidence of resonance and recognition in specialized scientific literature*

The doctoral candidate has fulfilled the minimum national requirements for the degree of Doctor of Philosophy. He has published the results of his scientific work in 5 reports and one article. All of them are in publications with editorial board. One of the papers is co-authored with the PhD student's supervisor. All other publications are independent. The candidate has participated in 6 scientific forums as a listener or by presenting a paper relevant to the dissertation topic.

IV. Critical notes, questions and recommendations on the dissertation

Despite the overall positive assessment of the study, some *critical remarks could be made*, such as:

1. Some sections, especially in the theoretical overview, could be more concise.
2. Statistical and empirical methodologies could be more clearly defined and justified.
3. The limitation of ICT in the transition to a green economy could be studied in more depth to provide a balanced perspective.
4. Additional comparative case studies outside Bulgaria would enhance the international relevance of the findings.

Recommendations for the dissertation

1. Although the author has commented further on the methodology used in the final version of the thesis, greater specificity and justification would have been helpful.
2. Better integration of figures and tables into the text by adding more in-depth explanations.
3. A study of the long-term impact of ICT integration on specific economic sectors could be considered.
4. Defining more specific recommendations for politicians and businesses regarding the implementation of ICT in green economy initiatives.

V. Summary evaluation of the dissertation work and conclusion.

In conclusion, I believe that the dissertation presented by Abrar Ashraf is a study of a topical problem that has implications for theory and practice. The work contains the necessary scientific and applied contributions and meets all the requirements and criteria for the award of the degree “Doctor”. This justifies me to give a **positive assessment** of this procedure.

Svishtov,

07.05.2025

Prepared the review:

/Assoc. Prof. Petya Emilova, PhD/