



**BULGARIAN ACADEMY OF SCIENCES
ECONOMIC RESEARCH INSTITUTE**

PEER REVIEW

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Field of higher education 3. Social, Economic and Legal Sciences, PD: 3.8. “Economics”, scientific specialties: 05.02.18 “Economics and Management”; 05.02.10 “World Economy and International Economic Relations” and in the competencies “Marketing” and “Applied Psychology”

Subject: dissertation for the award of educational and scientific degree “**Doctor**” in the **Ph.D. program “Economics and Management”**

Author of the dissertation: Svetlana Grigorova Dyankova

Dissertation topic: **Financial and Economic Evaluation of Public Investments on the Results of the Enterprises (on the example of the Working Conditions Fund)**

Grounds for submitting the review: Order of the Director of ERI at BAS and decision of the Scientific Jury

1. Relevance of the Topic of the Dissertation in Scientific and Applied Terms

The relevance of the topic has been discussed and positively assessed in department “Economics of the Firm”, as well as during the internal defense in ERI at BAS.

During the preliminary discussion, I have made a recommendation to clarify the topic, as it shows a certain disconnection of the subject with the object. Obviously, the procedure does not allow such an adjustment in the title, although it does not substantially affect the dissertation project, but, on the other hand, the Ph.D. student has complied with the other remarks to specify the relevance and the purpose, subject and contents of the dissertation.

I believe that the relevance of the topic can be specified also through the following main arguments:

- The theory concerning the policies and instruments for ensuring safe and healthy working conditions becomes more and more modern of high practical significance. This theory gives knowledge on how to effectively manage the changes affecting the working conditions at every level in today’s world of political, economic and social transformations.

- The business related to ensuring safe and healthy working conditions has been and in the foreseeable future will be the core of the society in the world.
- The modern complex processes of internationalization, globalization and digitalization, which constantly change the society and the nature, require the application of financial and economic evaluations and control, especially of the public investments, to improve the working conditions in the enterprises.
- Many publications discuss the problems of improving the working conditions. However, studying the impact of the investments in safe and healthy working conditions on the results of the enterprises remains a serious issue. This reflects, first, on the need for an objective financial and economic evaluation of the investments affecting the issue. This issue is impossible to solve without adequate methodologies for financial and economic evaluation of the impact of the investments in improving the working conditions on the activities of the enterprises. It is this fact that gives high weight to the relevance of the topic.
- Last but not least, the relevance of the topic is strengthened also by the goals and tasks set in the UN 2030 Program for Sustainable Development (aimed at transformations to achieve a world free of poverty, hunger, disease, fear, violence and ignorance. This transformation is based on three main elements for a balanced and harmonious interaction between economic prosperity, social justice and preserved environment). EU has been involved in fulfilling these goals and tasks, and in 2017 was signed the European Consensus on Development “Our World, Our Dignity, Our Future”¹. The strategic elements of the European Green Pact has been developed too. Bulgaria has developed also national development program “Bulgaria 2020” as a main strategic document, and “National Development Program BULGARIA 2030”² has been approved with decision №33 of the Council of Ministers of 20.01.2020. As it is known, the document defines three strategic goals – accelerated economic development, demographic growth, and reduction of inequalities. Their implementation is grouped in five development areas with 13 national priorities. The mentioned target values of the various indicators in the program 2030 are lower than the EU average. But even these values could not be achieved without specific methodologies and mechanisms for evaluating the investments and the development of the enterprises. That is why topics like the one of the current dissertation become increasingly relevant.

2. Degree of Acquaintance with the State of the Problem and the Literature Material

I believe that from an educational point of view, the Ph.D. student has sufficiently, with few exceptions, become thoroughly acquainted with the theoretical and methodological aspects concerning the topic and content of the Ph.D. thesis. This is obvious from the content in the first chapter, as well as from the references.

The list of references includes a total of **119** sources, of which **102** are in Cyrillic, **11** are in English, and 6 are electronic sources. These literature sources are sufficiently diverse and useful for conducting research on the topic of the dissertation. It can be concluded that the Ph.D. student is familiar enough with the Bulgarian literature in the field of the studied problem, but could in the future focus on a larger number of foreign sources.

¹ <http://europe.bg/bg/articles/news/2017/06/30/noviyat-evropeyski-konsensus-za-razvitie-nashiyat-svyat-nasheto-dostoyanstvo>.

² <https://www.minfin.bg/en/1394>.

3. Correspondence of the Chosen Research Methodology with the Set Objective and Tasks of the Dissertation

It is appraisable that the Ph.D. student has complied with the remarks made during the internal defense concerning specifying the objective and tasks, in order to harmonize with the content of the work. The research objective is specific: “To establish the effect of the public investments in Working Conditions Fund (WCF) on the number of accidents and to develop a methodology for financial and economic evaluation of the impact of these investments on the enterprises”.

To achieve the formulated objective, the following tasks have been set for implementation:

- To study and systematize the main policies and standards for safe and healthy working conditions in the European Union and in Bulgaria.
- To study the activity of the Working Conditions Fund for the period 2008-2018, in terms of investments in Bulgarian enterprises.
- To make a general evaluation and financial and economic analysis of the WCF investments.
- To calculate the efficiency of the WCF investments, analyzing the occurred accidents at work and the losses from them before and after the investments made by the Fund.
- To develop and appraise a methodology for financial and economic analysis and evaluation of the investments of the Working Conditions Fund on the results of the enterprises.

It is appraisable that the Ph.D. student has complied with the recommendation of the internal review and has been able to refine the tasks, including reducing them to five. It can be noted with sufficient accuracy that in this way the mentioned tasks largely correspond to the topics of the content. The first four tasks concern mainly the content in the first chapter. The implementation of the fourth task is laid down in the second and third chapters.

It is fair to note that regarding the object, the subject of research and the hypothesis, the Ph.D. student has complied with the recommendations of the internal review. They are correctly formulated and correspond to the topic of the dissertation.

Taking into account the multi-aspect and complex nature of the topic, the Ph.D. student has set the following limitations:

- “Within the Bulgarian enterprises, in order to improve the working conditions, it is possible to invest funds with a diverse source – operational programs, private funds, own funds and others. This work focuses only on the funds provided by the Working Conditions Fund (WCF).
- The second limiting condition concerns the time period. It covers the period 2008-2018. In general, the WCF has been operating since 1997, when it has been established under the Health and Safety at Work Act.
- Studied are results concerning the reduction of accidents at work, reduction of lost working days and reduction of paid benefits for temporary incapacity to work.
- Used is only theory and methodology for financial and economic evaluation concerning the public investments for healthy and safe working conditions.”

It is exactly the mentioned limitations that to a large extent compensate for some omissions in the dissertations, such as the fact that the theory of socio-economic efficiency and financial-

economic evaluation and analysis of the economic activity concerning the subject of the research has been neglected.

Still, despite the recommendations of the internal review, the Ph.D. student has not mentioned in the introduction the research methodology she has used. She has mentioned only some research methods. However, in my opinion, this does not diminish the significance of the dissertation, since in the second and third chapters the Ph.D. student states her vision for “methodology for financial and economic analysis and evaluation of Working Conditions Fund investments on the results of enterprises”. This methodology to a large extent corresponds to the set objective and tasks.

4. Specifics and Evaluation of the Dissertation

The dissertation is developed under the scientific guidance of Assoc. Prof. Dr. Veneta Hristova Mateeva. The study concerns the impact of the public investments on the results of the enterprises on the example of the Working Conditions Fund, as the candidate for the educational and scientific degree “Doctor” has declared and assumed responsibility that she has followed the rules of the scientific ethics.

The presented dissertation is in the volume of 219 standard pages and is structured in introduction, presentation in three chapters, conclusion, references and annexes. In fact, it is a standard and widespread structure for a Ph.D. dissertation.

An in-depth review of the work reveals that to a large extent the references have been analyzed and interpreted in accordance with the studied issue. Also, it should be noted that the dissertation stands out with good language editing. Many of the discussed problems in the dissertation concerning the financial and economic evaluation of the impact of the public investments on the activity of the enterprises and the possibilities for its application are debatable. However, the efforts made by the Ph.D. student to reveal some guidelines for achieving the objective of the research are applaudable.

In my opinion, it is not so important that the author has not examined in depth the theory of financial and economic evaluation, the systems, the models, the mechanisms and the instruments for financial investment. It is important that she makes a serious attempt by adapting two well-known models from the European practice, DALY and TYTA, to propose a methodology for evaluating the impact of the investments of the Working Conditions Fund in the enterprises and to try to approbate it. Exactly this attempt in pursuit of the set objective reveals her research potential. Despite this assessment, the review of the work reveals also some aspects that could be improved:

- Although the **introduction** of the dissertation discusses the relevance of the issue, it is not reflected as precisely as indicated on page 4 in the abstract.
- **Concerning the first chapter** – “European and Bulgarian norms, policies and institutions to ensure safe and healthy working conditions”:

The content is developed in three main topics. In general, the requirement for obtaining an educational and scientific degree “Doctor” is for the author to prove that she is sufficiently educated in the subject of the Ph.D. thesis and to prove her potential for scientific research on the topic. Once it is accepted that the subject is the financial and economic evaluation of the impact of the public investments on the working conditions, then the topics should discuss the theory related to this subject. However, it is applaudable that the main policies and norms for safe and healthy working conditions in the European Union and in Bulgaria are studied and

systematized in the chapter. The structure and functions of the Working Conditions Fund are revealed too.

It is fair to note that there are certain inaccuracies in the text, as the source does not indicate the specific page/s, etc. Also, there are references to applications in the work without detailing the specifics, which is a premise for axiomatic statements.

The author correctly points out that the International Social Security Association (ISSA) has developed a methodology for calculating the costs and benefits of investments in the field of health and safety at work in the companies, but in the overall work of the Ph.D. student it is not clear what the adaptation of this methodology is.

Also, the author rightly points out that the most important normative acts and policies, according to the degree of their comprehensiveness, are the Conventions of the International Labor Organization (ILO). However, the content in the chapter through the prism of the author's orientation would be improved if are mentioned some aspects of the UN Program 2030, EU Program 2030, Bulgaria 2030 Program (strategic goals: accelerated economic development; demographic growth; reduction of inequalities – decree № 33 of the Council of Ministers, from 20.01.2020) and from the Recovery and Development Plan (Council of Ministers, 14.10.2021) concerning the indicators for healthy and safe working conditions.

Generally, the conclusions from the first chapter should be related to the necessary theory on the topic and to the approaches, strategies and concepts that the Ph.D. student considers to be useful for her research. In my opinion, as a result of the Ph.D. student's review of normative acts and policies, the conclusions for the first chapter in the abstract are correctly stated. However, there are some additions to the conclusions in the dissertation itself, which are to some extent inaccurate and rather redundant.

Despite the mentioned remarks, the content in the first chapter, as well as part of the references, give reasons to assume that from an educational point of view to a large extent the Ph.D. student has managed with the literature concerning safe and healthy working conditions.

- **Concerning the second chapter** – “Development of a methodology for financial and economic evaluation of the investments of the Working Conditions Fund in the enterprises”:

The content is presented in three sections. The fact that the Ph.D. student has complied with the recommendations made at the internal discussion gives a good impression. However, the content of the chapter is not balanced (first section is 10 pages long, second one is 2 pages, third one is 17 pages).

In the first section, when clarifying the methodological bases, the Ph.D. student focuses on aspects of two well-known models from the European practice – DALY and TYTA. However, it is fair to say that neither of them provides a calculation of the effectiveness of the investments and their evaluation. The reason is that DALY model generally offers a methodology for calculating the severity of the diseases, and TYTA model allows to analyze and evaluate certain economic effects of the work environment. It is good to distinguish between effect and effectiveness and to know that in general the socio-economic efficiency is a function of: production and technological efficiency; social efficiency; market efficiency; financial efficiency; investment and operational efficiency.

In the second section, the methodology for the empirical research is not formulated. There are statements that do not clarify what the methodology is. An attempt to explain and apply the methodology is made in the third section, which has the highest weight in the chapter. Two

work stages are specified: General characteristics of the costs for WCF; Measuring the efficiency of the funds spent.

Figure 1 schematically represents the methodology. The scheme shows that the name of the first stage has been replaced with “Analysis of key indicators characterizing the costs of WCF”, and for both stages are specified indicators for analysis and steps of the analysis.

For the first and second stage each the author has specified 3 indicators for analysis with 5 steps of the analysis. In my opinion, some of the indicators for analysis need to be clarified in more details. For example, in the first stage of the indicator “number of risk factors for elimination”, it is not clear which are the main risk factors for health and safety at work.

In the second stage “Measuring the efficiency of the funds spent”, such a measurement is not actually made. Rather, provided is an opportunity to measure the impact of the public investments of WCF by reducing the accidents at work in the enterprises and reducing lost calendar days, as well as by saving funds from the hospital days for the temporary incapacity of the affected workers. I.e. in the title of the second stage “efficiency” should be replaced by “effect”. Other recommendations concerning the terms of efficiency and effect have been given during the internal discussion.

There are certain discrepancies in the conclusions in the abstract and in the dissertation for the second chapter. Having all this in mind, in my opinion, only the main conclusion indicated in the abstract is correct.

- **Concerning the third chapter** – “Results from the application of the methodology for evaluation of the efficiency of the direct investments of the Working Conditions Fund in the enterprises”:

The content is presented in two sections.

The first section makes an overview of the enterprises financed by WCF. Here the author specifies the amounts granted by WCF for all years of the studied period and for each year separately; the number of workers covered by the improved working conditions; the number of risk factors that have been eliminated. Mentioned are the investments of WCF through the indicators accident at work and lost calendar days. Outlined is the positive trend between the amounts granted by WCF and the amounts paid by the NSSI for short-term benefits, i.e. the larger the amounts from WCF, the smaller the amounts granted by the NSSI for lost calendar days. Studied are the enterprises financed by the Working Conditions Fund in the period 2008-2018.

The second section characterizes the financing of WCF and the effect of the funds spent. In my opinion, the results are not a direct consequence of the methodology proposed in the second chapter. Rather, the methodology could be recommended for improving the results.

- **Concerning the conclusion:**

I believe that the sentence “The current study is extremely relevant, given the spending of public funds and the growing public interest related to the results of the made investments of these funds in the working conditions in individual companies” should not be in the conclusion. I would assume that the conclusion in the abstract is to a large extent correct. This could be the conclusion of the dissertation.

5. Contributions of the Dissertation

The research efforts of the Ph.D. student are outlined in areas that reflect and justify the following scientific and applied contributions:

- Systematized are the main policies and norms for safe and healthy working conditions in the European Union and in Bulgaria.
- Developed is a methodology for **evaluating the impact** of WCF investments on the number of accidents and reasoned are the general requirements for applying the methodology in Bulgarian enterprises.
- Studied is the effect of the impact of the public investments in 322 enterprises on the territory of the country, which in the period 2008-2018 have received investments from the Working Conditions Fund for their projects for safe and healthy working conditions.

In my opinion, the mentioned contributions lead to a useful increase in the knowledge on the studied issues. The increase is expressed in dependencies and interventions that could lead to a positive change in the activities of the studied enterprises.

6. Evaluation of the Dissertation Publications

The candidate for the educational and scientific degree “Doctor” participates with three publications, the titles of which correspond to the dissertation.

- Dyankova, Sv. (2018). Standards for Occupational Health and Safety. – In: Collective Scientific Book of Faculty of Economics, “St. Cyril and St. Methodius” University of Veliko Tarnovo Annual Conference “Development of the Bulgarian and European economies – challenges and opportunities”, dedicated to the 25th anniversary of the Faculty establishment, held on 28-29.09.2017 in Arbanassi, Veliko Tarnovo, Vol. 1, Veliko Tarnovo: University Publishing House, pp. 226-230, ISSN 2603-4093.
- Dyankova, Sv. (2020). Usloviyata na trud – upravlenski i ikonomicheski faktor v predpriyatiyata. – Sotsialno-ikonomicheski analizi, Vol. 12, N 1, p. 113-121, ISSN: 2367-9379 [Дянкoвa, Св. Услoвиятa нa труд – управленски и икономически фактoр в предприятията. – Социално-икономически анализи, т. 12, N 1, с. 113-121, ISSN: 2367-9379].
- Dyankova, Sv. (2021). Analysis and Evaluation of Best Practices in the European Union and Bulgaria on Health and Safety Labor Conditions. – Mezhdunarodnyy nauchnyy zhurnal “Nauchnyye gorizonty” [Международный научный журнал “Научные горизонты”], N 3(43), pp. 23-32, ISSN 2587-618X.

I cannot evaluate the content of the mentioned publications, since I have not received them. The candidate’s ability to work independently on the topic is obvious, but it would be good to develop her skills to work in a team as well.

7. Educational and Teaching Activity of the Ph.D. Student

I was not provided with information about such activity of the Ph.D. student.

8. Evaluation on the Abstract

The content of the abstract gives a main idea of the scientific value of the dissertation. Perhaps it is an overdose of the evaluative nature of the dissertation. The remarks on the abstract are similar to those on the dissertation. Some other remarks could be made concerning the more precise correspondence of its content with that of the dissertation.

The abstract is developed in a volume of 42 pages, which is in accordance with the requirements.

9. Opinions, Recommendations and Notes

The candidate for the educational and scientific degree “Doctor” studies extremely complex and multi-aspect issues concerning the evaluation of the impact of the investments for health and safety conditions on the activities of the enterprises, and naturally for every young scientist this leads to some inaccuracies and omissions. Studying the possibilities for the formation and application of a methodology for evaluating the effectiveness of the direct investments and its approbation can make it difficult for even the most prominent scientists in this field. Especially considering that today the world is in a state of serious attempts to transform in conditions of economic, spiritual and health crises. In this regard, in addition to the mentioned remarks, in view of the future work of the Ph.D. student, I have the following recommendations and critical remarks:

- The structure of the dissertation could follow more precisely the implementation of the tasks related to achieving the objective and proving the hypothesis. Also, the methodology of the research in section 2.1. should be clearer and more specific.
- I recommend more in-depth knowledge related to the theory of finance and specifically to the systems and models for financial and economic evaluation and their management.
- For future research related to the topic, it will be useful to reveal in more depth the algorithms and the process innovations concerning the improvement of the working conditions and the achievement of balanced benefits in the relation “business – society – nature”.

The future research would benefit if the efforts to form and implement a specific methodology for improving the working conditions take into account the *innovation-oriented market economy* based on the entry of artificial intelligence, business globalization, more dynamic development of the international competition, telecommunications, internet, and of the bigger complexity, uncertainty and dynamics of the socio-economic environment.

The new era determines the necessity to rethink the views concerning quality management of health and safety at work. This affects changes in the entrepreneurial and innovation structures, the inputs, the transformation processes, the development and use of artificial intelligence, Industry 4.0, the circular economy, the modern standards such as GS1, and serious changes in the working conditions in logistics and trade processes.

I recommend that during the defense the candidate for the educational and scientific degree “Doctor” answers the following questions:

- What are the main premises and risk factors concerning the improving of the working conditions in the enterprises?
- What are the indicators for improving the quality of the working conditions?

- What are the main problems and barriers to the effective implementation of the public investments in the Bulgarian enterprises?
- How are evaluated the possibilities for applying the proposed methodology in the dissertation into the studied enterprises on a scale from 1 to 10, where 1 is the lowest grade? What is the general evaluation of the possibilities for applying this methodology?
- Since the enterprises differ in their subject of activity, their entrepreneurial, innovative and financial potential, is it possible to develop a unified methodology and technology for evaluating the impact of the public investments on their activity?

10. Conclusion

The dissertation is dedicated to an important problem for the economic and management theory and practice and has scientific contributions. Regardless of the made remarks and recommendations, the dissertation has the character of a scientific-applied research. The statements, mentioned in this review, and the research potential of the Ph.D. student give me reason to recommend to the esteemed Scientific Jury, in accordance with the requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations for application of the Act on Development of the Academic Staff in the Republic of Bulgaria, and the Regulations of ERI at BAS, with successful defense of the dissertation with correct answers to the questions, to award Svetlana Georgieva the educational and scientific degree "Doctor" in the Ph.D. program "Economics and Management" in scientific field 3. Social, economic and legal sciences, professional direction 3.8. "Economics".

Date: 10.11.2021

Peer reviewer:

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