OPINION

by Prof. Dr. Angel Angelov Marchev Sofia University "St. Kliment Ohridski"

of a dissertation for awarding the educational and scientific degree **" doctor "**

by: field of higher education 3. Social, economic and legal sciences

professional direction 3.8. Economics

PhD program Finance and Accounting

Author : Georgi Petrov Kaloferov

Topic : Success Factors for Starting enterprises

Scientific supervisor: Prof. Dr. Stanimir Ivanov Kabaivanov

1. General presentation of the procedure and the doctoral student

The opinion is prepared in accordance with the order of the Rector No. RD-21-669 of 24.03.2023. The set of materials presented by the doctoral student in paper format is in accordance with Art. 36 (1) of the Regulations for the Development of the Academic Staff of the PU

The doctoral student was trained in a doctoral program at a department at Plovdiv Unversity in the the professional direction 3.8. Economics. Judging by the fact that the PhD student is admitted to public doctoral defense, he has successfully passed all of his doctoral examinations and fully completed his individual plan on time.

2. Relevance of the topic

The subject matter addressed in the dissertation is substantial and deals with current challenges and trends in the financial field. Standard approaches to an investment task do not apply well to startups. Accordingly, the dissertation addresses contemporary problems and interests in the scientific community of a methodological and applied nature.

3. Knowing the problem

The PhD student demonstrates a clear understanding of the state of the problem and demonstrates a broad knowledge of the literature related to the field. The creative understanding of the problem and its analytical research stand out in the dissertation work, which shows high expert competence.

4. Research methodology

The chosen research methodology is well-founded and suitable for achieving the goal set in the dissertation work. The methodology is systematic, tailored to the specific requirements of the problem and the tasks under consideration. The dissertation work demonstrates high precision and reliability in the use of methodological approaches and tools that provide adequate answers to the tasks set.

5. Characterization and evaluation of the dissertation work and contributions

The dissertation has a volume of 202 pages and consists of an introduction, three chapters, three appendices and a list of the literature used. Lists of the tables, figures and abbreviations included in the exposition are also attached.

Introduction (8 pages), in which the topicality of the topic, object, subject of the research, as well as necessary methodological clarifications, are successively discussed. An excellent impression is made by the structuring and exposition of the main concept already here.

The Theoretical Chapter (61 pages) contains basic aspects regarding the theory, methodology and practice of valuation of start-up companies (essentially concerning the subject of research). In the second part of the chapter, a literature review is made on the topic of the dissertation.

A methodological chapter (developed on 40 pages) sequentially presents the stages of building a model for evaluating start-ups, including the use of various statistical methods. Among the tools presented, the XGBoost and Multi-layer perceptron methods are of interest. The models described are comprehensive and represent the greatest merit of the dissertation.

The third chapter is written in 38 pages. The main actions and the results of the analyzes are presented, following the methodology described in the previous chapter. At the end of the chapter, summarizing and concluding parts of the text are placed, in which there is a certain confusion of conclusions about the empirical part and about the whole study. In fact, the conclusion should be considered a general summary of the topic, not a specific conclusion of what was learned from an individual chapter. Parts of subsection 4, 5, 7 and 8 de facto represent the conclusion of the dissertation, but the fulfillment of the objectives, tasks and hypotheses of the introduction is not clearly reported. Writing a separate conclusion, in which the completion of each task is confirmed with the most important points of the presentation, would improve the work. At the same time, practically everything contained in the three applications should find a place, together with the corresponding analyzes in the empirical part.

The presented bibliography contains about 10 pages of unnumbered sources. They are diverse in their nature and many are with foreign authors. It shows the great degree of deepening in the subject and the high awareness of the doctoral student.

In general, a positive impression is made by the practical orientation of the work during the overall analysis. In my opinion, one of the most essential merits of the dissertation is its applicability. Considering the achievements of the dissertation, the object of research and the subject matter are well defined.

Of the presented six claims for scientific contributions, the first two are of a theoretical nature, two are of a methodological nature (third and fifth) and the remaining two are of an applied nature. In general, their style of description is clear and acceptable.

From the proposals for scientific contributions of the dissertation written in this way, the claims of theoretical contribution cannot be accepted, since performing a critical analysis and systematization of known modeling approaches cannot be considered as such. I accept all other proposed contributions as achieved in the dissertation.

6. Evaluation of the publications and personal contribution of the doctoral student

In the list of the author's publications on the topic of the dissertation, the doctoral student has included three published articles, two of which are independent. The texts of the publications reflect the most important moments of the theoretical part and of the empirical research of the dissertation. It makes a positive impression that the articles are in prestigious international editions.

The presented publications, dissertation and other materials leave no doubt about the authorship of the scientific work and individual scientific contributions. The developed methodology is original and original, based on good ideas from various sources, but also built (and later implemented) entirely by the author.

The main remarks are related to the structuring of the text. In particular, I pay attention to the lack of a separate section for the conclusion of the entire dissertation, where the most important conclusions from the three chapters are brought out in one place. There is currently a similar part, but it is not independent of empirical research.

Accordingly, only the empirical results and their conclusions should remain in the third chapter. In this regard, it would be good if the claims of scientific contributions are made in an explicit part of the thesis, so that it is clear that the contributions are valid for the whole thesis, not just for a separate part of it. The declaration of authorship is a separate (administratively ill-conceived) document from the dissertation and it is now accepted to be bound at the end.

The table of contents numbering of the first subsections of each chapter is missing, giving the false impression that the title of the first section is the title of the chapter. And in general, the numbering of subsections, as well as their logical sequence, is subject to major editing.

Although I am aware of the difficulty of such an undertaking, given the huge terminological tangle in emerging branches of science, I recommend that work be done on the translations of established concepts such as "confusion matrix" or "random trees", "gradient amplification" and so on. Part of the job of a dissertation is to communicate ideas in an appropriate way, so whenever there is a set of complex and new terminology it is good to start with a reasoned definition of the main concepts.

7. Abstract

The abstract reflects all the essential ideas of the dissertation and is sufficiently representative of the scientific work performed in the study.

8. Recommendations for future use of dissertation contributions and results

I mainly recommend that the PhD student publish (in an application) or online all data from the study, and all program codes in the spirit of good modern scientific practice for research repeatability

CONCLUSION

The dissertation contains scientific, scientific-applied and applied results that represent an original contribution to science. The dissertation meets all the requirements of the RSARB and the Regulations for its implementation.

I give my positive assessment of the conducted research, represented by a dissertation work, abstract, achieved results and contributions, and I propose to the scientific jury to awarded the educational and scientific degree "doctor" to Georgi Petrov Kaloferov, area of higher education 3. Social, economic and legal sciences, professional direction 3.8. Economics, PhD program Finance and Accounting

12.05.2023   ....

Assoc. Dr. Angel Marchev, Jr.