

OPINION

for the thesis of **Georgi Lazarov Shahpazov** on the topic of

" INTELLIGENT TECHNIQUES FOR ANALYSING FINANCING PROCESSES OF SMALL AND MEDIUM ENTERPRISES "

for the acquisition of the educational and scientific degree PhD
in the professional field 4.6 "Informatics and Computer Science"

by Prof. Sotir Sotirov from the University "Prof. Dr. Assen Zlatarov, Burgas

Pursuant to Order No. 263 / 31.10.2019 of the Director of the Institute of Information and
Communication Technologies at the Bulgarian Academy of Sciences, I was appointed as a
member of the Scientific Jury for preparing an opinion on the dissertation work of
Georgi Lazarov Shahpazov

" INTELLIGENT TECHNIQUES FOR ANALYSING FINANCING PROCESSES OF SMALL AND MEDIUM ENTERPRISES "

for the acquisition of the educational and scientific degree "Doctor"
in the professional field 4.6 "Computer Science and Computer Science"

Description

The dissertation is presented with an introduction, three chapters, a conclusion, a summary of the results obtained, a declaration of originality and a bibliography containing 110 sources. Chapter 1 is an overview of smart methods for analyzing complex processes. Basic concepts and terms are introduced in the chosen topic. Particular attention is paid to computer intelligence systems, intelligent systems and mathematical approaches to process modeling. Basic information is given about the theory of generalized networks, intuitionistic fuzzy sets, indexed matrices, and the method of inter-criteria analysis.

Chapter 2 analyzes the financing processes of small and medium-sized enterprises. Analysis of statistics, financing methods, strategies, instruments related to the JEREMIE

financial initiative, fund focus including stage and sector, expected number of investments in companies, planned investment rate, including follow-up policy and envisaged diversification strategy of capital risk are presented, strategy for generating a flow of transactions, adding value in companies that are subject of investment, after investment strategies, investment strategies and financial instruments used and expected return.

Chapter 3 presents the experimental results of the simulation analysis. The summary models developed by the PhD candidate are presented: the methodology for creditworthiness analysis and credit risk assessment in financing small and medium-sized enterprises (SMEs); the functionality of an internal financial structural unit, further developed with a focus on financing vehicles; for credit assessment.

An approach is proposed to evaluate the SME financing mechanism through intuitionistic fuzzy evaluations and optimization procedures in the SME financing mechanism. The method of intercriteria analysis for enterprises from EU countries and the creditworthiness of SMEs is applied.

The conclusion contains a summary of the obtained results, the author's claims for scientific contributions, the list of scientific papers presented, participation in projects and publications on the dissertation, declaration of originality. The possible perspectives for the future development of the conceptual models and their software implementation are described.

Actuality

The application of modern, intelligent techniques for analyzing business finance processes that have optimal characteristics is a current scientific problem. The introduction of intelligent methods of analyzing financial instruments offered by the banking sector, and in particular suitable for small and medium-sized enterprises, in order to increase the effectiveness of the mechanisms used to finance their operations, give them a new perspective at solving existing problems.

In my opinion, the structure of the dissertation is at a good level. There are theoretical descriptions that are very well reasoned, backed up with literary sources, and reflect different points of view in the process.

The list of dissertation publications includes nine articles, of which two book chapters in the series - In: Modern Developments in Fuzzy Sets, Intuitionistic Fuzzy Sets, Generalized Nets and Related Topics, edited by K. Atanassov, M. Baczynski, J. Drewniak, J. Kacprzyk, M. Krawczak, E. Szmidt, M. Wygralak, S. Zadrozny (Eds.), Two papers in the Notes on

Intuitionistic Fuzzy Sets and five papers in international conferences. The report shows that the doctorate has 4 publications in SCOPUS.

The abstract accurately reflects the results obtained in the dissertation, but is full of technical and synthetic errors.

I accept the contributions formulated by the doctoral student.

Conclusion

In conclusion, I can say that the topic and dissertation are up-to-date and that original results have been obtained. The dissertation satisfies the requirements of ZRAS and the Regulations of IICT – BAS, I dare to confidently recommend to the Scientific Jury to vote Georgi Lazarov Shahpazov to be conferred on with PhD degree in Professional field 4.6 Informatics and Computer Science, a PhD program in Informatics.

01.12.2019

Signature:



Prof. Sotir Sotirov