

OPINION

By Prof. Galina Georgieva Kurteva, PhD, High Education Area “Social, Economic and Legal Sciences”, Professional Field 3.7. Administration and Management, Scientific Specialty Social: Management, Bourgas Free University

Subject: *Dissertation for the award of the scientific degree "Doctor of Science" in the professional field 3.7 Administration and Management (Business Administration) at Sofia University "St. Kliment Ohridski", Sofia.*

Author of the dissertation: *Prof. Desislava Ivanova Yordanova, PhD.*

Dissertation Topic: TECHNOLOGY ENTREPRENEURSHIP AMONG BULGARIAN STEM STUDENTS: THE ROLE OF UNIVERSITY

Reason for submitting the review: participation in the composition of the scientific jury for the defense of the dissertation according to the Order No RD 38-462/26.07.2022r. of the Rector of Sofia University "St. Kliment Ohridski" Prof. Dr.Sc. Anastas Gerdzhirov and the decision of the first meeting of the Scientific Jury dated 01.08.2022.

The opinion was prepared in accordance with the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Regulations for its Implementation and the Internal Rules for Academic Staff Development at Sofia University "St. K. Ohridski".

1. Information about the dissertant

Desislava Yordanova is a full-time lecturer at the Department of Business Administration, Faculty of Economics and Business Administration of Sofia University "St. Kliment Ohridski" since 2007. She holds the academic position "Professor" in PH 3.7. Administration and Management /Management of SMEs and Family Business and Entrepreneurship/ since 2018.

Desislava Yordanova has a PhD in Entrepreneurship, Strategy and Management since 2009. The defense of her dissertation in the Autonomous University of Barcelona is entitled "Gender effects on entrepreneurship: empirical evidence from Bulgaria".

The report presented by Prof. Dr. Desislava Yordanova on compliance with the minimum national requirements shows that the total compulsory amount of points required for the award of the degree of Doctor of Science has been significantly exceeded.

2. General characteristics of the presented dissertation

The presented dissertation is devoted to a topical issue for the economic progress related to technological entrepreneurship. The author focuses on the attitudes, intentions and behaviours for the development of technological entrepreneurship among Bulgarian STEM students and the subject of her research is the influence of university-related factors on the attitudes, intentions and behaviours for the development of technological entrepreneurship among Bulgarian STEM students. It should be stressed that despite the importance of the issue, it is only partially developed in the contemporary scientific literature. This strengthens the

contributions of the development to overcome the theoretical deficits in the field of technological entrepreneurship.

Prof. Dr. Desislava Yordanova has justified the relevance of the issues she discusses with the role of Bulgarian higher education institutions in promoting entrepreneurship and stimulating student start-ups during their studies or after graduation. The development also sounds relevant in terms of the importance of the issue for talent creation and enriching the experience of individuals in terms of technological entrepreneurship.

The dissertation has a clearly outlined purpose, object and scope of the research, correctly set tasks for the realization of the goal, correctly defined the main thesis and the limiting conditions for its proof.

The total volume of the dissertation of Prof. Dr. Desislava Yordanova is 342 pages. The main text is supported by 54 tables and 22 figures. There are also two appendices presenting the content of the questionnaire used in conducting the research and visualizing part of the results of this research. The volume of the dissertation is more than satisfactory.

The content of the dissertation is structured in an introduction, four chapters, conclusion, list of information sources. Overall, it is logically sound and well balanced by chapters and paragraphs.

The dissertation is based on the study, analysis and systematization of a lot of scientific publications, literature and information sources in the researched thematic area. The presented list contains a total of 470 sources (in English, Spanish, Bulgarian), which shows the author's good literary knowledge. Literature sources are correctly used according to the accepted requirements for citation in scientific publications. This is a testament to the author's ethics. The ability of Prof. Dr. Desislava Yordanova to make a scientific selection and to be critical of others' opinions and concepts when structuring her opinion to prove the main thesis of her dissertation should be highly appreciated.

It makes a good impression that based on the research conducted, the author has identified opportunities to further develop the ideas advocated in the dissertation, which she believes will provide a better understanding of the impact of various educational variables related to entrepreneurship education, such as teaching methods, learning outcomes, teacher beliefs, etc., on STEM students' attitudes, intentions, and behaviors in the area of technopreneurship.

3. Evaluation of the obtained scientific and scientific-applied results

The author's in-depth review of the theory of technological entrepreneurship allows her to present her conception of the problem and to propose her own model of university determinants of attitudes and target intentions for the development and implementation of technological entrepreneurship among STEM students. The overall presentation is logically well-constructed and confirms the author's main thesis that university-related factors influence the attitudes, intentions and behaviours for developing technological entrepreneurship among Bulgarian STEM students. The scientific accuracy of the author in defining the main concepts used in the dissertation should also be emphasized.

Chapter one presents the theoretical framework of the study in which the advantages of viewing entrepreneurship as a process are argued; the specific characteristics of technological entrepreneurship and its diverse outcomes are identified; the impact of formal and informal institutions on entrepreneurship is examined, focusing on the influence of universities; the key elements of the entrepreneurial university are outlined. The main results of the literature review in chapter two are related to the discovery of individual and university determinants of entrepreneurial attitudes, intentions and behaviours. Based on this, the author proposes four conceptual research models that represent the university-related factors influencing the stages of the technology entrepreneurship process. Along with this, she formulates her hypotheses regarding the influence of various factors on attitudes toward technology entrepreneurship development, on target intentions for technology entrepreneurship development, on intentions

to pursue technology entrepreneurship, and on the likelihood of emergent entrepreneurship among STEM students. Chapter three is methodological. The context of the study, the methods of data collection and analysis, the characteristics of the study sample, and the approach to measuring the dependent, independent, and control variables in the study are presented. The author uses a variety of quantitative and qualitative methods and tools in the realization of the set research goal. Prof. Dr. Desislava Yordanova shows the ability to apply the systematic approach, the comparative approach, the interdisciplinary approach, the methods of analysis and synthesis, inductive and deductive methods in relation to the theory in the research area and in the creation of the conceptual models of the research. To test the proposed hypotheses survey is conducted among STEM students studying in Bulgarian universities. Regression analysis was used to assess the influence of university-related factors on attitudes, intentions, and behaviors to develop technology entrepreneurship among the STEM students studied. The fourth chapter contains the results of the empirical study. The results of the dissertation research allow the author to present her conception of the role of universities for technological entrepreneurship among STEM students.

The main scientific and applied results achieved in the thesis can be summarized as follows:

- A literature review and critical analysis of concepts, theories and approaches used in the scholarly literature on entrepreneurship and the role of the university in developing entrepreneurship among students is conducted.
- Following a critical analysis of published empirical research on the role of the university in the development of entrepreneurship among students, the factors associated with the university and positively influencing entrepreneurship among students are identified.
- A conceptual model of university-related factors that influence attitudes, intentions, and behaviors to develop technology entrepreneurship among STEM students is developed.
- Guidelines and recommendations for practical use of the research results for policy makers, academics and managers in universities are proposed.

The authorship of the described results is not in doubt, and in addition to their detailed description in the dissertation, the author has described empirical results from empirical study. These results correspond fully with the set tasks in the introduction of the dissertation, which is a reason to report the successful detailed realization of the main objective of the dissertation.

4. Evaluation of the contributions in the dissertation

The dissertation is interesting and memorable for the extremely precise logical presentation of the conducted research; the author's good ability to present her attitude to the studied issues and to justify the conclusions and recommendations. The developed dissertation is of interest for the scientific and public practice with the number of propositions, ideas and suggestions contained in it, which can be evaluated as contributions of theoretical and practical-applied nature.

The following can be assessed as contributions of a theoretical nature:

- The systematization of definitions, theoretical approaches and models in the field of entrepreneurship.
- Developed conceptual models of university-related factors influencing attitudes, intentions, and behaviors to develop technology entrepreneurship among STEM students.
- The proposed comprehensive toolkit for examining attitudes, intentions, and behaviors for technology entrepreneurship development among STEM students.

The following can be assessed as contributions of a practical-applied nature:

- New knowledge about technological entrepreneurship among Bulgarian STEM

students and the role of the university in the attitudes, intentions and behaviours for developing technological entrepreneurship among Bulgarian STEM students.

- The possibility of using the results of the dissertation research both in the creation and implementation of policies and support measures to stimulate technological entrepreneurship among Bulgarian STEM students and in the entrepreneurship education of STEM students in Bulgarian universities.

In conclusion, I accept the claims of Prof. Dr. Desislava Yordanova for the contribution moments in her dissertation. I consider the contributions to be significant both for the practice and for the enrichment of the existing knowledge.

5. Evaluation of the dissertation publications

Prof. Dr. Desislava Yordanova presents 14 publications on the dissertation problems - 1 chapter of a collective monograph; 3 articles indexed in Scopus and/or Web of Science; 3 articles indexed in other databases, 7 reports.

The list of publications shows the ability of Prof. Dr. Desislava Yordanova to inform the scientific community about her research work in an appropriate way. The presented publications contain the main points of the dissertation, through them the author's research highlights are promoted.

6. Assessment of the dissertation abstract

The submitted abstract has a volume of 51 pages. The abstract is compiled in accordance with the requirements, reflecting in a synthesized form the content of the dissertation, thesis, object and methodology of the study as well as the final results obtained. The abstract presents a reference to the contributing moments in the conducted research, as well as the publications on the dissertation.

7. Critical remarks, recommendations, and questions

I have no critical comments on the ideas and claims presented in this dissertation. I recommend to Assoc. Prof. Dr. Desislava Yordanova to determine the priorities arising from the actuality topicality of the dissertation topic, and to concentrate and deepen her research on them in the future.

8. Conclusion

In her dissertation, Prof. Dr. Desislava Yordanova has demonstrated the ability to clearly outline and argue scientifically for her views the importance of universities in stimulating technological entrepreneurship among STEM students. I find the presented dissertation to be a thorough and significant independent scientific study of a topical problem for the scientific and economic community. In my opinion, the dissertation also meets the requirements of the Law on Academic Development, the Law on the Development of Academic Affairs and the Internal Rules for the Development of the Academic Staff at Sofia University "St. Kliment Ohridski ". Based on all this, I propose to the members of the Scientific Jury to award the scientific degree "Doctor of Science" in the professional field 3.7 Administration and Management (Business Administration) to Prof. Dr. DESISLAVA IVANOVA YORDANOVA for the dissertation on the topic: TECHNOLOGY ENTREPRENEURSHIP AMONG BULGARIAN STEM STUDENTS: THE ROLE OF UNIVERSITY.

29.08.2022

Signature:



/Prof. Dr Galina Kurteva/