

# REVIEW

**By Prof. Dr. Matilda Ivanova Alexandrova**  
University of National and World Economy – Sofia,  
Professional Field 3.7 „Administration and Management“

Of dissertation entitled: „**Technologic Entrepreneurship of Bulgarian STEM Students: The Role of University**“

Author: **Prof. Dr. Dessislava Ivanova Yordanova**

Submitted under a procedure for acquiring Scientific Degree “Doctor of Sciences” in Professional Field 3.7 „Administration and Management“

## **1. Basis for developing the review**

By Order No. RD-38-462 / 26.07.2022 of the Rector of “St. Clement Ohridski” University of Sofia, on the basis of the decision of the Faculty Council of the Faculty of Economics and Business Administration (Protocol № 13 / 18.07.2022), according to Art. 13 of the Academic Staff Development Act in the Republic of Bulgaria (ASDARB) I have been appointed as an external member of the Scientific Jury, which will conduct the defense of a dissertation authored by Desislava Ivanova Yordanova for the degree of “Doctor of Science” in the Professional Field 3.7 "Administration and Management". As a jury member I have received:

- 1) a set of documentation related to the defense procedure, including Order No. RD-38-462 / 26.07.2022 of the Rector of the Sofia University;
- 2) dissertation entitled "Technologic Entrepreneurship of Bulgarian STEM Students: The Role of University" submitted for attaining the degree of “Doctor of Science”;
- 3) the thesis abstract;
- 4) copies of publications on dissertation.

For awarding of “Doctor of Science” degree, the relevant requirements are laid down in ASDARB Art. 12: (1) *“The degree of Doctor of Science shall be obtained by a person holding PhD degree. (3) The dissertation under para.2 must contain theoretical generalizations and solutions to major scientific or applied problems that are in line with current advances and represent a significant and original contribution to*

science. (4) The dissertation under para.2 is prepared independently and cannot repeat verbatim the topic and a significant part of the content of the thesis submitted for the PhD degree”.

Prof. Dr. Desislava Ivanova Yordanova meets the requirements of Art. 12 (1) and Art. 12 (4), since she holds a PhD degree in PF 3.7 “Administration and Management”, and from the list of publications declared in the abstract of the submitted dissertation, it can be concluded that the dissertation "*does not repeat verbatim the topic and a significant part of the content*" of the PhD dissertation. The presented publications and citations show that the dissertant meets the Minimum National Requirements for the degree of “Doctor of Science” in the Scientific Area "3. Social, Economic and Law Sciences":

	Indicator	Points
A	Dissertation for the award of educational and scientific degree "Doctor of Philosophy"	50
B	Dissertation for scientific degree “Doctor of Science” Title: "Technologic Entrepreneurship of Bulgarian STEM Students: The Role of University"	100
C	Articles and conference papers published in scientific editions, refereed and indexed in world-renowned databases of scientific information	55
	Articles and conference papers published in non-refereed peer-reviewed journals or published in edited collective volumes	77
	Published chapter of a collective monograph	20
D	Citations or reviews in scientific journals refereed and indexed in world-renowned databases of scientific information or in monographs and collective volumes	3000

## 2. Brief biographical and professional information

Prof. Dr. Desislava Yordanova graduated with a Bachelor's degree in Business Management in 1998 and with a Master's degree in Strategic Management in 2000 at Sofia University “St. C. Ohridski”. From 2001 to 2004 she was a PhD student in Management at the same University. In 2009, she obtained her PhD in “Entrepreneurship, Strategy and Management”, defending her doctoral thesis at the Autonomous University of Barcelona (Spain) entitled "Gender effects on entrepreneurship-quality: empirical evidence from Bulgaria". Since 2000 she has been a visiting assistant professor at the Department of Business Management, Sofia

University "St. C. Ohridski", since 2007 she has been appointed as a full-time assistant professor, since 2014 as an associate professor, and since 2018 she has been promoted to full professor at the same department. She speaks English, Spanish and Russian.

The professional development of Prof. Dr. Desislava Yordanova has established her as a distinguished expert in the field of entrepreneurship, SME management and family businesses, and over the years she has held prestigious national and international positions: member of the international board of "ERENET PROFILE" journal; member of the international networks "Entrepreneurship Research and Education Network of Central European Universities" (ERENET), Global Entrepreneurship Network, International Virtual Community in support of research and education in international entrepreneurship (IE-Scholars.net); member of the Expert Council of the Centre for Entrepreneurship and Project Management, Faculty of Economics and Business Administration, "St. C. Ohridski" University of Sofia, Bulgaria.

### **3. Relevance and significance of the studied scientific problem**

The dissertation thesis of Prof. Dr. Desislava Yordanova is devoted to a significant and relatively unexplored problem related to the technological entrepreneurship of Bulgarian students with STEM majors and the role of the university in its promotion. The relevance and necessity of the research is justified by the premise of the important role of Bulgarian universities in stimulating student start-ups during their studies or after graduation. There is a well-founded rationale for the need for such a study, aimed at investigating the attitudes, intentions and behaviours towards the development of technological entrepreneurship among Bulgarian STEM students, identified as the object of the research.

The study builds on already identified positive entrepreneurial attitudes, targeted entrepreneurial intentions, and behaviors to endeavor technological entrepreneurship, and active internal entrepreneurship as key stages of the entrepreneurial process. The study identifies the influence of university-related factors on the attitudes, intentions and behaviours towards the development of technological entrepreneurship among Bulgarian STEM students.

On the basis of a detailed and critical review of the gaps in the scientific literature in the field of technological entrepreneurship, the

dissertation focuses on the aim of studying the identification of university-related factors that influence the attitudes among students to develop this type of entrepreneurship. Five research tasks are defined, the realization of which highlights the main scientific and applied contributions of the research. The main statement of the dissertation is that factors related to the university have a legitimate influence on the attitudes, intentions and behavior of Bulgarian STEM students to develop technological entrepreneurship. The methodology implemented in the dissertation is based on the application of appropriate scientific methods to achieve the aim of the study and the execution of the scientific tasks.

A systematic, comparative and interdisciplinary approach, methods of analysis and synthesis, induction and deduction were used in the review of the specialized scientific literature and the creation of the conceptual models of the study. 23 hypotheses of the study are formulated, and in order to test the proposed hypotheses, data are provided through questionnaire survey of STEM students enrolled in Bulgarian universities. Regression analysis was used to assess the influence of university-related factors on the attitudes, intentions and behaviours towards developing a technological enterprise among the surveyed students.

#### **4. Structure and content of the dissertation**

The dissertation has a traditional structure containing an introduction, four chapters, a conclusion, a list of information sources and two appendices. Structurally, the dissertation is characterized by a balanced presentation between the theoretical framework, literature review, research methodology, and empirical results. The overall content seeks a systematic and grounded answer to the question of what is the role of the university in promoting technological entrepreneurship among STEM students and what are the specific factors that determine it. It is important to note that the conceptual framework suggested for the role of the university can support the potential for initiation and progression through the stages of technological enterprise for such students. The study specifies policies and measures to support such entrepreneurship not only at the early stages (start-ups) but also during the more advanced stages of technology development by STEM students.

In order to test the survey instrument, a pilot study was conducted among 15 STEM students, followed by the actual survey and secondary

analysis of data on entrepreneurial activity and the environment for entrepreneurship development in Bulgaria from the Global Entrepreneurship Monitor, the World Bank, Eurostat, etc.

All these arguments confirm the relevance of the thesis development, which is in line with the requirements for a dissertation for the degree of “Doctor of Science”. The topic formulated fully corresponds to the main content of the dissertation, as its purpose is decomposed into appropriately framed tasks, the execution of which is systematically conducted in the thesis. Limitations of the study are correctly stated along the study and the interpretation of achieved scientific results.

## **5. Evaluation of the scientific results and contributions**

The dissertation of Prof. Dr. Desislava Yordanova contains indisputable scientific and applied contributions, which could be systematized as follows.

### **1) Scientific contributions:**

- Definitions, theoretical approaches and models in the field of entrepreneurship are systematized, with an emphasis on technological entrepreneurship;

- Four author's conceptual models for university-related factors influencing STEM students' attitudes, intentions, and behaviors towards developing technological entrepreneurship are suggested;

- Own empirical research toolkit developed to investigate STEM students' attitudes, intentions, and behaviors towards technological entrepreneurship.

### **2) Applied contributions:**

- New knowledge has been gained about technological entrepreneurship among Bulgarian STEM students, as well as about the role of the university in encouraging attitudes, intentions and behaviours for developing technological entrepreneurship among these students.

- The obtained results have applied significance for: creation and implementation of policies and measures to support and stimulate technological entrepreneurship among Bulgarian STEM-students; improving the content and didactic methods in entrepreneurship education of STEM students in Bulgarian universities.

The contributive nature of the results has implications for both scientific knowledge in the area of technological entrepreneurship, and the

role of universities in promoting such entrepreneurship among STEM students. The main scientific and applied contributions in the dissertation work are reflected in the dissertant's publication activity. A total of 14 publications (10 self-authored) have been published on the topic, all of them in English. Three publications are refereed in the world-renowned bibliographic databases Scopus and/or Web of Science.

The author's participation in obtaining the scientific and applied contributions is indisputable, as it is based on the professional experience and accumulated knowledge of the dissertant, as well as on the thorough and correct approach implemented in her research work.

## **6. Critical notes**

I have no critical remarks to the dissertation and the accompanying materials on the procedure for the defense of the degree of “Doctor of Science” by Prof. Dr. Desislava Yordanova. My main recommendation to the author is to continue her efforts in the realization of opportunities for the promotion of her research results in prestigious international journals, indexed in the world bibliographic and scientometric systems. Her experience and professional background would be useful in the analysis, justification and implementation of public policies, educational strategies and practical measures to promote technological entrepreneurship among students in Bulgarian universities.

## **7. Conclusion**

The dissertation can be distinguished by its relevance, theoretical and methodological soundness, choice of methodological tools, and the possibilities for practical implementation of the obtained results. It can be concluded that the dissertation presented by its author Prof. Dr. Desislava Yordanova meets the requirements for the degree of “Doctor of Science”.

All above statements provides me with reasons to **positively assess** the dissertation entitled "Technological Entrepreneurship among Bulgarian STEM Students: the Role of the University" by Prof. Dr. Desislava Ivanova Yordanova under the current procedure for granting the degree of “Doctor of Science” in Professional Field 3.7 "Administration and Management".

Date: 12. 09. 2022

Jury member:

/ Prof. Dr. Matilda Alexandrova /