Review

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Regarding: dissertation entitled "Challenges to e-commerce pricing in our country under pandemic conditions"

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Doctoral programme: "Finance, money circulation, credit and insurance"

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Purpose of the review: evaluation of the qualities of the dissertation the acquisition of the educational and scientific degree "doctor"

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I. Fulfilment assessment of the formal, structural and technical criteria according to Art. 27 para. 2 of the Implementing Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria

The reviewed scientific study has a total volume of 206 pages. It is prepared in compliance with the standard formal-technical and structural framework of a dissertation study and includes: title page; content; introduction; main text of three chapters; conclusion; bibliography and one appendix. The dissertation includes 49 figures, 23 tables and 7 equations. The bibliography includes 148 literature and internet sources. All of the above stated facts lead to the conclusion that from the point of view of Art. 27 para. 2 of the Implementing Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the reviewed scientific study meets the formal, structural and technical criteria to be defined as a dissertation.

II. Fulfilment assessment of the scientific characteristics of the dissertation according to Art. 27 para. 1 of the Implementing Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria

2.1. Assessment of the relevance, object, subject, purpose, tasks, thesis and content

The topic of pricing as part of financial management in e-commerce is undoubtedly very relevant under the changed micro- and macroeconomic conditions during and after the COVID-19 pandemic. This is due to the fact that the novel coronavirus pandemic has disrupted many supply chains, but created conditions for the development of e-commerce. Moreover, the importance and significance of pricing processes in the conditions of rapid development of e-commerce at the

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global level is further strengthened by the entry of technologies based on the application of big data and artificial intelligence. Due to the stated reasons, the topic of the reviewed dissertation can be classified as relevant, and its content can be defined as interesting for economic experts and analysts.

The object of research in the dissertation is e-commerce pricing in Bulgaria in the context of the COVID-19 pandemic, and its subject is the pricing models for products and services in the e-commerce sector. The purpose of the dissertation is to evaluate the applicable models for pricing products and services used by Bulgarian companies in the field of electronic commerce and to look for opportunities to optimize the pricing process considering the new economic realities. To achieve the purpose, six research tasks have been formulated. On this basis, the thesis of the dissertation is that "the application of adaptive pricing models, taking into account the specifics of electronic commerce and consumer behavior, can lead to the maximization of sales in the conditions of dynamic economic processes caused by external shocks such as the COVID-19 pandemic. The specifics of e-commerce form characteristic business models that also require a special look at pricing."

The content of the dissertation is structured in an introduction, three main chapters and a conclusion. The introduction of the dissertation presents the investigated problem. It contains the main scientific requisites of the dissertation - object, subject, thesis, goals, tasks. It also outlines the methodology used, the applicability of the achieved results and the scope of the dissertation study. The first chapter of the evaluated scientific study is devoted to the characterization of the nature, functions, factors, elements and structure of prices, stages and methods of pricing and the price policy of the company as part of its financial management. In the second chapter of the dissertation, various aspects of the development of e-commerce and business models for generating revenue in e-commerce are presented. The third chapter of the study contains an analysis of the impact of the COVID-19 pandemic on the economy, consumer behavior, e-commerce in Bulgaria, and implementation of a dynamic pricing system using big data and artificial intelligence. In the conclusion, the work that have been done in the dissertation is systematized and the main conclusions from are formulated. Against this background, it can be concluded that the evaluated scientific study has characteristics of research on an important, relevant and interesting financial and economic problem with a high degree of significance not only for the Bulgarian economy, but also for the global economy. On the other hand, the scientific requisites of the dissertation study are formulated correctly, which implies conducting adequate and in-depth research on the topic of the dissertation.

2.2. Scientific contributions in the dissertation work

Doctoral student Georgi Stoilov Anev points out seven main scientific contributions in his dissertation, as follows:

First. Based on an in-depth review of the scientific literature on the related topic, the author offers a complex systematization of the theoretical aspects in the field of pricing and his own view of the importance of pricing policy and pricing strategy in the overall price management process in the company.

Second. Through a theoretical and practical analysis, the author defines the place and role of modern e-commerce, methodologically evaluates applicable

business models and approaches for generating revenues by companies in the field of e-commerce, and distinguishes the specifics of the pricing process of their products and services based on key indicators.

Third. It is proposed an author's definition of the term e-commerce as a process of buying and selling goods and services (physical or digital) between economic agents (companies, individuals, state institutions, organizations, etc.), as this process or part of it is mediated through public open communication networks (Internet) and is related to the transfer of digital information (commercial, financial, etc.) between the participants in the transaction.

Fourth. Based on a survey conducted on the state and trends in the e-commerce sector in Bulgaria, it was found that among the main problems and challenges in our country, the problems with deliveries, the drop in consumer demand, the shortage of qualified personnel and inventory management, which contrasts with the problems of online merchants in the US and Europe, which mainly suffer from disruptions in supply chains and the ability to meet increased demand for products.

Fifth. Based on a survey, it was found that the changed business environment also caused a number of changes in the strategic vision for the business, mostly related to the digitalization of the business, including by improving the used software products and online marketing campaigns, also including processes to improve customer experience and satisfaction. It is found that although the surveyed online merchants work with an e-commerce platform tailored and customized to their needs, some of them are also rely on the emerging artificial intelligence, especially in the area of improving personalization, forecasting, marketing and sales, and also by improving the efficiency of pricing methods.

Sixth. A proprietary model for dynamic pricing has been developed using big data and artificial intelligence, based on a recurrent neural network - Long Short-Term Memory and implemented through specialized software for intelligent and automated price determination for each product, where the merchant will have the maximum profit. The model has been tested and implemented in an international online store for auto parts offering its products in 15 countries with no local pricing policy implemented for each individual market, and its performance and applicability has been tested on the leading European and American markets with real data in the fourth quarter of 2022.

Seventh. The results of the conducted tests unequivocally show the absence of a direct positive relationship between the low prices of the product, the sales volume and the generated profit from sales. Differences in the consumer behavior of the studied markets are also noted: European customers tend to associate high price with high quality, while in the USA and Great Britain they prefer to search for a good "price/quality" ratio.

The above-mentioned contributions are of sufficient number and quality for a dissertation, which has as its object pricing in e-trade and has the goal of evaluating the pricing models for products and services used by Bulgarian companies in the field of e-trade and to look for opportunities to optimize the pricing process considering the new economic realities. Although some of them are formulated vaguely, the indicated scientific contributions correctly reflect what was done in the dissertation and its content. I believe that the number of contributions and their wording could be shortened. For example, the first and second contribu-

tions can actually be combined into one. In the same way, the fourth and fifth, as well as the sixth and seventh offerings can also be combined. However, this fact does not reduce the significance of the scientific contributions formulated by the author. On the contrary, I believe that the last two scientific contributions form a direction for a significant change in pricing not only in Bulgaria, but also on a global level. That is why this part of the dissertation deserves admiration.

2.3. Shortcomings of the dissertation

The dissertation presented for review has some technical and scientific shortcomings, which can be formulated as follows:

First. The first part of the introduction of the dissertation is too short. Therefore, the relevance of the dissertation is not adequately justified. The reviewed dissertation is relevant, but this is not implied by introduction or by the author's argumentation.

Second. The second sentence of the defended thesis in the dissertation is practically redundant.

Third. In certain parts of the first and second chapters, the content of the dissertation is mostly descriptive. This is also valid for the titles of some points.

Fourth. In the content of the dissertation, the author uses numerous enumerations, which can be shaped as analysis or comments.

Fifth. There is simultaneous use of English and Bulgarian language when denoting the same thing. It is appropriate that the conceptual apparatus in a dissertation to be unified in terms of language.

Sixth. The characteristics of the innovative methodology applied in the third point of the third chapter of the dissertation is too short.

Seventh. There are inaccuracies of a technical, stylistic and punctuational nature in the dissertation. It is recommended that they must be removed when submitting the dissertation to the National Information and Documentation Center.

Eighth. The dissertation does not include a signed declaration of originality, as required by Art. 27, para. 2 of the Implementing Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria. It is desirable that this shortcoming must be removed when the dissertation is submitted to the National Center for Information and Documentation.

However, the above-mentioned shortcomings do not reduce the scientific value of the dissertation and the achieved results.

III. Assessment of the author's summary and the publications

The presented author's summary has a total volume of 53 pages. Its review shows that it reflects the main points of the dissertation. For the defence of his dissertation, doctoral student Georgi Stoilov Anev presents a list of 5 publications, of which 4 articles and 1 report. All publications are on the topic of the dissertation or reflect the main points of its content. The presented publications also cover the minimum national requirements for acquiring the educational and scientific degree "doctor".

IV. Questions during the defence of the dissertation

Based on the content of the dissertation, the following questions can be addressed to PhD student Georgi Stoilov Anev:

First. Are there any disadvantages of pricing using big data and artificial intelligence for the companies that apply it or for customers? What are they, if any, or what might appear in the future?

Second. Does the current dominance of certain online merchants such as Amazon and Alibaba threaten to monopolize e-commerce? What negative effects for the global economy and trade could result from this?

Third. Do Bulgarian online merchants have the financial and technological potential to compete effectively with their foreign competitors? If they do not have such potential, what prevents them from successful development?

V. Overall conclusion

The dissertation entitled "Challenges to e-commerce pricing in our country under pandemic conditions" with author PhD student Georgi Stoilov Anev is a study on a relevant and interesting financial and economic problem affecting pricing and e-commerce. The study meets the minimum requirements of Art. 6, para. 3 of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the requirements of Art. 27, para. 1 and para. 2 of the Implementing Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria. Therefore, in spite of the detected minor shortcomings, I give an overall positive assessment for the presented dissertation. On this basis, my recommendation to the scientific jury is to give the educational and scientific degree "doctor" in the doctoral program "Finance, money circulation, credit and insurance (finance)" to PhD student Georgi Stoilov Anev.

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