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EMERGING TRENDS IN BUSINESS ECONOMICS
Towards competitiveness, digitalization and financial innovation

EMERGING TRENDS IN BUSINESS ECONOMICS: TOWARDS COMPETITIVENESS, DIGITALIZATION AND FINANCIAL INNOVATION

BOOK OF ABSTRACTS

Editors

Isidora Ljumović
Vladimir Simović
Darko Marjanović

International scientific conference:
EMERGING TRENDS IN BUSINESS ECONOMICS:
TOWARDS COMPETITIVENESS, DIGITALIZATION AND FINANCIAL INNOVATION
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PREFACE

Dear readers,

As a result of our first virtual Annual International Scientific Conference, it is our pleasure to present this year's Book of Abstract. As we put the safety and health of our participants first, the decision had been made by the Institute of Economic Sciences from Belgrade, Serbia together with the Institute of Economics from Skopje, North Macedonia to organize the Conference event in a virtual format, due to the coronavirus outbreak.

This year's Conference focused on innovations, digitalization and competitiveness and the specific topic of the Conference was "Emerging Trends in Business Economics: Towards Competitiveness, Digitalization and Financial Innovation". Over 100 participants attended the Conference, submitting 57 papers, including authors from 9 countries.

Our intention was to bring together researchers, scholars, doctoral students and policymakers to present their ideas and work to the community at large, to receive feedback and enjoy great networking opportunities, on the following topics:

1. Competitiveness and global growth
2. Trends in the digital economy
3. Financial innovation and Fintech

The concept of economic growth and improving competitiveness has changed in the 21st century. Physical resources, machines and manpower are no longer crucial as capital, technology and human knowledge have taken over the primacy of major development factors. All things considered, it is clear that knowledge, research, innovations and technology, accelerated by the process of digitalization, form the backbone of economic development, dominant way to create surplus value and tackle social challenges. Knowledge-based economies are already forcing the commercialization of innovation and new technologies as ways to achieve faster economic growth and generate new well-paid jobs in fairer and greener societies. As concerns developing countries, there is a need to create a better business environment, develop adequate infrastructure, as well as raising and disseminating knowledge throughout all segments of the economy. Here, in this Book of

Preface

Abstracts, contributing authors present their view and possible solutions to the chosen issues.

We are grateful to all the authors who contributed to this Book of Abstracts in fulfilment of our joint goal.

Stay safe and healthy through these unusual times!

EDITORS

2.20. USING RECURRENT NEURAL NETWORK TO IMPROVE ONLINE LEARNING

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OBJECTIVES

The main objective of the paper is the application of the recurrent neural network to improve online learning. Accordingly, the application of the recurrent neural network should enable solving problems of short-term prediction in order to obtain a more rational system of online learning. Also, the objective is to increase the quality of short-term prediction using the proposed Jordan-Elman recurrent neural network model regarding online learning.

METHODOLOGY

Increased use of artificial neural networks (ANN) represents an adequate alternative approach to solving logical problems. A recurrent neural network (RNN) represents one of the classes of the ANN. Unlike multilayer neural networks, recurrent neural networks have closed feedback loops. Proposed methodology in this paper is based on the use of Jordan-Elman recurrent neural network model for improving online learning.

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RESULTS

Obtained results indicate that the application of the artificial neural network model, in our case, Jordan-Elman recurrent neural network model can support and improve online learning. The proposed type and model of RNN have successfully predicted potential problems and in that way to avoid certain expenses and processes that are time-consuming.

IMPLICATIONS

The quality of the model based on artificial neural networks mainly depends on the adequate choice of the architecture of the artificial neural network, i.e. learning algorithms, transfer functions, scope and data distribution. Accordingly, a model based on the application of a recurrent neural network was chosen for the application in the paper.

ORIGINALITY VALUE

Originality of this model is reflected to the use of Jordan-Elman (JEN) recurrent neural network model for improving online learning. The proposed JEN model allows to context units to save results while is doing the processing of operation on different entities.

CONTRIBUTION

By applying recurrent neural networks, the existing problem can be solved during online learning, and it is also possible to detect and predict possible future problems that may arise. The application of recurrent neural networks can achieve greater efficiency of models that are not as efficient or cannot perceive and solve problems. Consequently, application of the recurrent neural network could lead to savings of financial resources, time and infrastructure preservation.

KEY WORDS

Recurrent neural networks, artificial neural networks, Jordan-Elman RNN, online learning

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