

A I E S A

Applied Informatics Econometrics Statistics Accounting

21st International Scientific Conference
„AIESA – BUILDING OF SOCIETY BASED ON KNOWLEDGE“

November 14 – 15, 2024 | 09:15 | Assembly Hall (Aula) of the University of Economics in Bratislava



The conference was supported by



21st International Scientific Conference „AIESA – BUILDING OF SOCIETY BASED ON KNOWLEDGE“

Conference Programme | 14th November 2024 (Thursday)

Assembly Hall (Aula) of the University of Economics in Bratislava

08:45 – 09:15 Registration of participants

09:15 – 09:25 Opening of the conference

09:25 – 12:30 Plenary Session

12:30 – 14:00 Lunch Break

7th floor, Rector's Office building (Building II), University of Economics in Bratislava

14:00 – 16:00 Parallel Sessions

Conference Room (ground floor),
Rector's Office building (Building II), University of Economics in Bratislava

16:30 – 20:00 Welcome Reception



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14th November 2024 | Assembly Hall (Aula) of the University of Economics in Bratislava

08:45 – 09:15 **Registration of participants**
09:15 – 09:25 **Opening of the conference**
Ceremonial speech of the Vice - Rector of the University of Economics in Bratislava
doc. Mgr. Boris Mattoš, PhD.
Ceremonial speech of the Dean of the Faculty of Economic Informatics
prof. Mgr. Erik Šoltés, PhD.

Plenary session I.

09:25 – 09:45 **Jakub Červeň – Erik Božík – Tomáš Horníček**
VÚB a.s., Bratislava
AI in VUB

09:45 – 10:05 **Mgr. Jakub Hollý, ACCA, CA – Ing. Filip Mihál**
Deloitte Slovensko, Bratislava
Innovative Solutions in Auditing: How Data Analytics, Automation, Artificial Intelligence and the Use of Internal Controls are Changing Audit

10:05 – 10:25 **Ing. Mária Kamenárová, PhD., FRM**
Partners poisťovňa a.s., Bratislava
Liquidity Risk management in Insurance Companies and other changes coming from Solvency II review

10:25 – 10:45 **Mgr. Michal Uherek**
Zurich Insurance Company Ltd., Bratislava
Overview of how technology impacts insurance

10:45 – 11:00 **Coffee break**

Plenary session II.

11:00 – 11:20 **Assoc. prof. Ing. Michaela Bednárová, BA (Hons) PhD.¹**
– prof. Enrique Bonsón²
¹Faculty of Economic Informatics, University of Economics in Bratislava
Pablo de Olavide University in Seville
²University of Huelva
Establishing a Disclosure Framework for Corporate Digital Responsibility (CDR): Toward Transparency, Standardization, and Sustainability

11:20 – 11:40 **Prof. PG dr hab. Małgorzata Gawrycka – Prof. Michał Bernard Pietrzak**
Gdańsk University of Technology
Economic and Social Age Aspects According to 8 Sustainable Development Goal – Selected Issues

11:40 – 12:00 **Prof. dr hab. Józef Pocięcha – Dr hab. Barbara Pawełek, prof. UEK**
Cracow University of Economics
Multidimensional Bibliometric Analysis of Publications on Statistical Learning – Based on the Scopus Database

12:00 – 12:20 **Prof. Dr. Zoltán Rajnai**
Óbuda University, Budapest
Cybersecurity at strategic level

12:30 – 14:00 **Lunch Break**



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Parallel Sessions 14:00 – 16:00

Accounting and Auditing Room A7.04

Chair: prof. Ing. Mgr. Renáta Pakšiová, PhD.

doc. Ing. Mgr. Zuzana Juhászova, PhD. – Ing. Martina Ballová, PhD. .

Reputation Risk of Auditing Companies on X, Formerly Twitter, and Advertising Decrease on Platform

Ing. Oľga Kadlečíková, PhD.

Reporting of sustainability information by financial institutions based in Slovakia in accordance with the requirements of the amendment to the Accounting Act

Ing. Veronika Kňazžková, PhD.

Increasing confidence in reported sustainability information in the context of audit

Ing. Petra Krišková, PhD. – doc. Ing. Ján Užík, PhD. –

Ing. Lenka Užíková, PhD.

Proposal of a methodological procedure related to the statutory audit in the verification of deconsolidation

Ing. Kornélia Lovciová, PhD.

Transformations of business companies and cooperatives in Slovakia

doc. Ing. Jitka Meluchová, PhD. – Ing. Ján Vlčko

The impact of IFRS 17 on financial reporting of insurance companies

Ing. Renáta Stanley, PhD.

Changes in the tax bonus for children in the Slovak Republic

Applied Informatics Room E8.18

Chair: doc. Ing. Martin Mišút, PhD.

Lect. Dr. Samo Bozic PhD. – Prof. Ana Starešinič – Rhea Nina Klansek Bozic

Engagement by Design: How Gamification Transforms Rural Heritage into a Digital Hub

Ing. Daniel Dudek

Utilisation of AI model-based software tools in research paper production process

Ing. Pavol Jurík, PhD. – Bc. Natália Babjaková

A detailed comparison of selected applications to support team communication usable in a business environment

Ing. Igor Košťál, PhD.

Execution Efficiency of a Parallelization of a Word Frequency Analysis in text files in a C# Application

Ing. Richard Martinus

Allocation of investment assets by fuzzy logic

Ing. Pavol Sojka, PhD.

A tool for applying models generated by means of automatic machine learning implemented as a web application

Quantitative Methods in Economics Room A7.12

Chair: doc. Ing. Karol Szomolányi, PhD.

Ing. Ádám Csápai, PhD.

A How well do machine learning methods forecast inflation in Slovakia?

Dr Anna Denkowska, Dr hab. Stanisław Wanat, prof. UEK

Measuring systemic risk in the context of climate risk

Ing. Peter Peťko, MBA

Project management as a tool for increasing the efficiency of company management

Mgr. Krystian Szczęsny

Risk Aggregation in Insurance in the context of Solvency II Regulations: A Machine Learning-Based Approach

Ing. Silvia Zelinová, PhD.

Analysis of the Contractual Service Margin in life insurance products

Ing. Michal Bogár – Peter Knížat MSc. – doc. Ing. Andrea Furková, PhD.

Enhancing Portfolio Optimization Stability: The Impact of Stein-Type Shrinkage Estimators on Covariance Matrix Estimation



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Room A7.04, Accounting and Auditing, Chair: prof. Ing. Mgr. Renáta Pakšiová, PhD.

Technical support: Ing. Branislav Parajka, PhD.

doc. Ing. Miriama Blahušiaková, PhD.

Impact of ESG Reporting and CSR on Company's Reputation

Ing. Renáta Hornická, PhD.

Reporting of non-financial information or sustainability of groups of the accounting entities after the amendment of Act No. 431/2002 Coll. on Accounting, as amended, in the Slovak Republic

Ing. Alena Kordošová, PhD.

Revenues and costs in the accounting of public administration entities

Ing. Anton Marci, PhD. – Ing. Miroslava Vašeková, PhD.

Evaluation of the Potential Impact of Increasing the Taxable Income Threshold for Business Accounting Entities Applicable to the 15% Corporate Income Tax Rate on Tax Collection

Ing. Martina Mateášová, PhD.

The onset of electromobility and its obstacles in Slovakia

Ing. Daša Mokošová, PhD.

Sustainable performance as a result of the sustainability reporting in the EU

Ing. Lucia Ondrušová, PhD.

Institute of companies in crisis in connection with a simply joint-stock company

prof. Ing. Mgr. Renáta Pakšiová, PhD.

Strengthening Competencies in the Area of Sustainability in the Education of Future Accountants and Auditors

Ing. Martina Podmanická, PhD.

Legislative regulations of mergers in the Slovak Republic

prof. Ing. Miloš Tumpach, PhD.

Application of paragraph 190 of act No. 200 /2005 Col. of Laws (Criminal Code) for corporate and public sector practice



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Room E8.18, Applied Informatics, Chair: doc. Ing. Martin Mišút, PhD.

Technical support: Ing. Pavol Jurík, PhD.

Aigul Baimakhanova Bekmoldaevna, mag. – doc. Ing. Jaroslav Kultán, PhD.

Table editor application options for analysis of patients' condition

Ing. Nina Barčáková – doc. Dr. Ing. Miroslav Hudec

Flexible quantifiers in aggregation

Ing. Andrej Bednařík

Enhancing the accuracy of decision trees using bagging

Ing. Peter Procházka, PhD.

Deep Fake Technologies in Computer Graphics

RNDr. Eva Rakovská, PhD. – Ing. Veronika Horniaková, PhD.

Perception of using Artificial Intelligence at the University from the IT Students' Point of View

Ing. Mgr. Peter Schmidt, PhD. – Ing. Silvia Zelinová, PhD.

Implementation of machine learning models to improve predictions for a selected type of non-life insurance

PaedDr. Zsolt Simonka, PhD.

The Use of Augmented Reality in Teaching General Mathematics Subjects at the Faculty of Economic Informatics of the University of Economics in Bratislava

PaedDr. Zsolt Simonka, PhD. – Mgr. František Slaninka, PhD.

Augmented Reality as an Innovative Tool in Teaching Economic Subjects in Engineering Education: Bridging Theory and Practice

RNDr. Anna Strešňáková, PhD. – Mgr. František Slaninka, PhD.

The Use of AR in higher education



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Room A7.12, Quantitative Methods in Economics, Chair: doc. Ing. Karol Szomolányi, PhD.

Technical support: Ing. Michal Závodný

prof. Ing. Ivan Brezina, CSc. – prof. Mgr. Juraj Pekár, PhD. – doc. Ing. Marian Reiff, PhD.

Alternative solution of travelling salesman problem in MS Excel

doc. Ing. Zuzana Čičková, PhD.

Game theory and location problem

Ing. Monika Ferencčáková

Coalition Strategies and Game Theory in Competitive Market

prof. RNDr. Ing. Petr Fiala, CSc., MBA

Modelling and Analysis of Coopetition Strategy in Business

Ing. Pavel Gežík, PhD.

Possibilities of Optimal Location for Collection Points in Regions with Sparse Infrastructure

Ing. Ľubica Hurbánková, PhD.

Comparison of European Union countries based on selected indicators of poverty and social exclusion using the scoring method

doc. Ing. Michaela Chocholatá, PhD.

Economic Growth and Environmental Degradation: A Spatial Approach

prof. Ing. Josef Jablonský, CSc.

Models for ranking of decision making units in DEA models: a comparative study

Ing. Silvia Komara, PhD. – Ing. Martina Košíková, PhD.

Analysis of Material Deprivation in Slovakia in 2022 Based on a Machine Learning Approach

doc. Ing. Brian König, PhD. – Adamu Braimah Abille, M.A.

Regional Trade Agreements and Intra-African Trade: Do Colonial Ties Matter?

Mgr. Ing. Zuzana Krátka, PhD.

Operational risks of insurance companies in Slovakia

Ing. Mgr. Ingrid Krčová, PhD.

LRC and LIC in the GMM model in the IFRS 17 standard

doc. RNDr. Viera Labudová, PhD.

Poverty and Social Exclusion in the Context of the Digital Transformation

doc. Mgr. Vladimír Mucha, PhD.

Modelling risk dependencies in insurance using MB11 copula

doc. Ing. Michal Páleš, PhD.

The structure of the virtual environment in Python language

prof. RNDr. Ľudovít Pinda, CSc.

Specifics of hedging the bond portfolio with futures contracts on the long-term interest rate

prof. RNDr. Katarína Sakálová, CSc.

Assessment of solvency and capital adequacy of insurance companies on the Slovak insurance market in 2022

Ing. Martina Slašťanová

Application of Clustering in Insurance Industry

Ing. Lenka Smažáková, PhD.

Analysis of selected option strategies

RNDr. Anna Strešňáková, PhD.

Software support in determining the solvency of an insurance company

doc. Ing. Karol Szomolányi, PhD. – prof. Ing. Martin Lukáčik, PhD. – Ing. Adriana Lukáčiková, PhD.

European Union Small Open Economies during the Pandemics

prof. Mgr. Erik Šoltés, PhD.

Comparison of changes in the risk of income poverty in Poland and Slovakia as a result of the crises after 2019

doc. Mgr. Tatiana Šoltéssová, PhD.

Analysis of the calculation of insurance contract liabilities under IFRS 17

doc. Ing. Mária Vojtková, PhD.

The influence of income poverty on household consumer behavior in the Slovak Republic

Dr hab. Stanisław Wanat, prof. UEK – Mgr Grzegorz Korbela

Longevity Risk Costs and the Clustering of Selected OECD Member Countries

Ing. Michal Závodný

Utilizing R Programming for Capital Allocation in Catastrophic Risk Coverage through Risk-Based Models

