DOKUMENT

Meno a priezvisko	doc. Mgr. Eva Litavcová, PhD.
Typ dokumentu	Charakteristika predkladaného výstupu tvorivej činnosti
Názov vysokej školy	Katolícka univerzita v Ružomberku
Sídlo vysokej školy	Hrabovská cesta 1A, 034 01 Ružomberok
Názov fakulty	Pedagogická fakulta
Sídlo fakulty	Hrabovská cesta 1, 034 01 Ružomberok

OCA1. - Priezvisko hodnotenej osoby

Litavcová

OCA2. - Meno hodnotenej osoby

Eva

OCA3. - Tituly hodnotenej osoby

doc. Mgr., PhD.

OCA4. - Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl

https://www.portalvs.sk/regzam/detail/6549

1. hodnotený výstup

1.

OCA5.1 - Oblasť posudzovania

Učiteľstvo matematiky (a ďalšia predmetová špecializácia) (Bc., Mgr.) Teacher training in mathematics (bachelor/master degree)

OCA6.1 - Kategória výstupu tvorivej činnosti

vedecký výstup

OCA7.1 - Rok vydania výstupu tvorivej činnosti

2021

OCA8.1 - ID záznamu v CREPČ alebo CREUČ

ID = 316700

OCA9.1 - Hyperlink na záznam v CREPČ alebo CREUČ

https://app.crepc.sk/?
fn=detailBiblioFormChildY13UJM&sid=31B74E2C3D2F4979EA9AC5B881&seo=CREP%C4%8C-detail-
%C4%8Cl%C3%A1nok

Názov publikácie, na ktorú hyperlink poukazuje

Economic development, CO2 emissions and energy use nexus-evidence from the Danube region countries

OCA13.1 - Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne)

https://www.mdpi.com/1996-1073/14/11/3165

Názov publikácie, na ktorú hyperlink poukazuje

Economic development, CO2 emissions and energy use nexus-evidence from the Danube region countries

OCA14.1 - Charakteristika autorského vkladu

Autorka je zástupca vedúcej projektu VEGA 1/0508/21 Hodnotenie energetickej udržateľnosti krajín Európskej únie vo väzbe na ciele Agendy 2030 pre udržateľný rozvoj a spolupodieľala sa (50%) na spracovaní tejto publikácie./
The author is the deputy head of the project VEGA 1/0508/21 Evaluating the energy sustainability of the countries of the European Union in relation to the objectives of the Agenda 2030 for sustainable development and participated (50%) in the preparation of this publication.

OCA15.1 - Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod.

The aim of this study is to examine the empirical cointegration, long-run and short-run dynamics and causal relationships between carbon emissions, energy consumption and economic growth in 14 Danube region countries over the period of 1990–2019. The autoregressive distributed lag (ARDL) bounds testing methodology was applied for each of the examined variables as a dependent variable. Limited by the length of the time series, we excluded two countries from the analysis and obtained valid results for the others for 26 of 36 ARDL models. The ARDL bounds reliably confirmed long-run cointegration between carbon emissions, energy consumption and economic growth in Austria, Czechia, Slovakia, and Slovenia. Economic growth and energy consumption have a significant impact on carbon emissions in the long-run in all of these four countries; in the short-run, the impact of economic growth is significant in Austria. Likewise, when examining cointegration between energy consumption, carbon emissions, and economic growth in the short-run, a significant contribution of CO_2 emissions on energy consumptions for seven countries was found as a result of nine valid models. The results contribute to the information base essential for making responsible and informed decisions by policymakers and other stakeholders in individual countries. Moreover, they can serve as a platform for mutual cooperation and cohesion among countries in this region.

OCA17.1 - Zoznam najviac 5 najvýznamnejších ohlasov na výstup

• Hasan, M., Eiti, H. T., Hossain, M. S., Amin, M. B., Rahaman, M. A., & Oláh, J. (2026). Evaluating the role of renewable energy and government consumption in reducing CO_2 emissions: A dynamic panel data analysis. Sustainable Horizons, 17, 100164. 2026 – Elsevier
• Al-lami, A., Alatawneh, A., & Török, Á. (2025, October). Drivers of CO_2 Emissions in Central European Transport: Intra and Inter-Country Spatial Analysis. In IEEE International Conference on Cognitive Mobility (pp. 136-150). Cham: Springer Nature Switzerland. 2025 - Springer
• Loredana, C., Rehman, A., Mirabela, F. I. M., Pinzon, S., & Cismaș, L. M. (2024). What implications do primary energy use, urban population agglomeration, and economic development rendered to Romania's environmental sustainability?. Energy Strategy Reviews, 53, 101399. 2024 - Elsevier
• Leitão, N. C., dos Santos Parente, C. C., & Lorente, D. B. (2023). The Impact of Economic Growth, International Trade, and Carbon Dioxide Emissions on Portuguese Energy Consumption. In Economic Growth and Environmental Quality in a Post-Pandemic World (pp. 61-80). Routledge. 2023 - taylorfrancis.com
• Borozan, D., & Borozan, L. (2025, July). Estimating the governance effect on carbon dioxide emissions in Croatia. In Natural Resources Forum. Oxford, UK: Blackwell Publishing Ltd. 2025 Wiley Online Library

OCA18.1 - Charakteristika dopadu výstupu na spoločensko-hospodársku prax

Výstup je súčasťou skúmania kointegračných vzťahov medzi časovými radmi ekonomického a ekologického charakteru. Je príkladom aplikácie matematickej štatistiky - ekonometrie, jej súčasných nástrojov, pri hľadaní odpovedí na otázky súvisace s globálnym otepľovaním.
The output is part of the study of cointegration relations between time series of economic and ecological character. It is an example of the application of mathematical statistics - econometrics, its current tools, in finding answers to questions related to global warming.

OCA19.1 - Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces

Výstup môže prispieť k porozumeniu vybraných techník a užitočnosti aplikácie výsledkov výskumu v modernej matematickej štatistike do bežného života.
The output can help to better understanding how contemporary in mathematical statistics results are applied in every day life.

2. hodnotený výstup

1.
OCA5.2 - Oblasť posudzovania
Učiteľstvo matematiky (a ďalšia predmetová špecializácia) (Bc., Mgr.) Teacher training in mathematics (bachelor/master degree)

OCA6.2 - Kategória výstupu tvorivej činnosti

vedecký výstup

OCA7.2 - Rok vydania výstupu tvorivej činnosti
2024

OCA8.2 - ID záznamu v CREPČ alebo CREUČ
ID: 1188842

OCA9.2 - Hyperlink na záznam v CREPČ alebo CREUČ
https://app.crepc.sk/?
fn=detailBiblioFormChildA19CIR&sid=180EDEFD59FD4297402E39A38AFB&seo=CREP%C4%8C-detail-
kapitola-/-pr%C3%ADspevok

Názov publikácie, na ktorú hyperlink poukazuje
Urbanization and CO2 emissions: panel data analysis of EU countries

OCA14.2 - Charakteristika autorského vkladu

Autorka je zástupca vedúcej projektu VEGA 1/0508/21 Hodnotenie energetickej udržateľnosti krajín Európskej únie vo väzbe na ciele Agendy 2030 pre udržateľný rozvoj a spolupodieľala sa (30%) na spracovaní tejto publikácie./
The author is the deputy head of the project VEGA 1/0508/21 Evaluating the energy sustainability of the countries of the European Union in relation to the objectives of the Agenda 2030 for sustainable development and participated (30%) in the preparation of this publication.

OCA15.2 - Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod.

Recognizing the recent pace of urbanization and carbon emissions growth, this study investigates the dependence of CO_2 emissions on the urbanization of European Union (EU) countries, economic growth, total energy consumption, the amount of energy produced from renewable sources, and nuclear energy as low-carbon energy source. The main questions addressed in this study are: (1) Are there long-term and short-term relationships between the variables examined? (2) What is the connection between carbon emissions and the independent variables at different periods? (3) Can urbanization, economic development, total energy consumption, and the share of renewable and low-carbon energy sources predict the evolution of carbon emissions and thus the achievement of the EU's carbon neutrality targets? We analyze a sample of 22 European countries for the period 1992–2019. Concerning the COVID-19 pandemic that hit Europe in early 2020, this study can be used as a comparative sample and can serve to assess the impacts of the pandemic on the evolution of greenhouse gas emissions during the pandemic as well as after the pandemic has subsided and economies have restarted. The models used in the study are as follows: threshold cross-sectional model, panel threshold models with threshold variable (urbanization of the country), Panel Models (Fixed Effects (FE), Random Effects, Least Squares Dummy Variables), Fully Modified OLS, Dynamic OLS, Panel VAR model, Pooled Mean Group Estimation, Mean Group Estimation, and Dynamic FE estimation. General moments methods (GMM) were used in the estimation of short-run relationship dynamics. The impulse response functions were used to analyze the results obtained in the GMM model. The Stata 15.1 econometric software environment was used to test unit root, variable cointegration, and to esti-mate the models. The best-fitting models were selected from the above models using statistical tests. Understanding the relationship between these variables is essen-tial for informed and evidence-based decision-making and the adoption of new or revision of existing policies and strategies promoting the carbon–neutral and green economy at the EU and national levels.

OCA17.2 - Zoznam najviac 5 najvýznamnejších ohlasov na výstup

Bahman, N., Naser, N., Khan, E., & Mahmood, T. (2025). Environmental science, policy, and industry nexus: Integrating Frameworks for better transport sustainability. Global Transitions, 7, 29-40. 2025 - Elsevier

• Panait, M., Gabor, M. R., Ionescu, R., & Confetto, M. G. (2026). Renewable energy-the engine of the journey to the low carbon economy. A socio-economic perspective for European Union countries. Renewable Energy, 125437. 2026 - Elsevier

• Bibi, S., & Farooq, F. (2025). Role of Environmental Governances in Shaping Environmental Performance. Pakistan Journal of Social Sciences, 45(3), 207-230.

• Tüylü, A. N. A. (2026). Investigation of Ecological Footprint Dynamics in European Countries With Causality Based on Machine Learning Analysis. In Achieving the Sustainable Development Goals Through Green Innovation (pp. 1-20). IGI Global Scientific Publishing.

OCA18.2 - Charakteristika dopadu výstupu na spoločensko-hospodársku prax

Výstup je súčasťou skúmania kointegračných vzťahov medzi časovými radmi ekonomického a ekologického charakteru. Je príkladom aplikácie matematickej štatistiky - ekonometrie, jej súčasných nástrojov, pri hľadaní odpovedí na otázky súvisace s globálnym otepľovaním.
The output is part of the study of cointegration relations between time series of economic and ecological character. It is an example of the application of mathematical statistics - econometrics, its current tools, in finding answers to questions related to global warming.

OCA19.2 - Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces

Výstup môže prispieť k porozumeniu vybraných techník a užitočnosti aplikácie výsledkov výskumu v modernej matematickej štatistike do bežného života.
The output can help to better understanding how contemporary in mathematical statistics results are applied in every day life.

3. hodnotený výstup

1.

OCA5.3 - Oblasť posudzovania

Učiteľstvo matematiky (a ďalšia predmetová špecializácia) (Bc., Mgr.) teacher training in mathematics (bachelor/master degree)

OCA6.3 - Kategória výstupu tvorivej činnosti

vedecký výstup

OCA7.3 - Rok vydania výstupu tvorivej činnosti

2020

OCA8.3 - ID záznamu v CREPČ alebo CREUČ

ID = 212650

OCA9.3 - Hyperlink na záznam v CREPČ alebo CREUČ

https://app.crepc.sk/?fn=detailBiblioForm&sid=98C1BC1B72D21E0932A70A25E5

Názov publikácie, na ktorú hyperlink poukazuje

Characteristics of soil parameters of agricultural land use types, their location and development forecast

OCA14.3 - Charakteristika autorského vkladu

Autorka sa spolupodieľala (30%) na spracovaní tejto publikácie./
The author participated (30%) in the preparation of this publication in:
methodology; software; validation; formal analysis; investigation; resources; data curation; writing—original draft preparation; writing—review and editing; visualization,

OCA15.3 - Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod.

In this paper we point out the basic soil parameters characterizing current arable land, permanent grassland, vineyards, and orchards in Slovakia. While the area of permanent land use types is more or less stable, there is a noticeable decrease in the area of arable land. In Slovakia, arable land is located mainly on the plain. The value of its production potential is 67 points (the highest quality soil has 100 points). Permanent grassland is found at higher altitudes on slopes, with a higher gravel content, and the value of their production potential is 35 points. Vineyards are predominantly located in the warm regions of southern Slovakia on the middle slopes. These soils are generally loamy, without significant gravel content, and the value of their production potential is 59 points. Most orchards are located on the plains. The soils are predominantly loamy and deep, without significant gravel content, and the value of their production potential is 63 points. Characteristics of agricultural land use types were determined using vector databases of soil parameters obtained from Soil Science and Conservation Research Institute information systems and a current vector layer for identification of agriculturally used soils, the Land Parcel Identification System, using geographic information systems. Moreover, our analysis tries to determine what developments can be expected in the use of four agricultural land use types. The modeling assumptions concern the future performance of these variables using exponential smoothing and Box-Jenkins methodology.

OCA17.3 - Zoznam najviac 5 najvýznamnejších ohlasov na výstup

- Chitra Devi, A., Maragatham, S., Santhi, R., Srivastava, S., Dey, P., & Barathkumar, S. (2025). Multivariate Time Series Models for Soil Nutrient and Yield Prediction in Site Specific Integrated Nutrient Management. Communications in Soil Science and Plant Analysis, 56(12), 1889-1907. 2025 - Taylor & Francis
- Rodrigo-Comino, J., Keshavarzi, A., & Senciales-González, J. M. (2023). Evaluating soil quality status of fluvisols at the regional scale: A multidisciplinary approach crossing multiple variables. River Research and Applications, 39(7), 1367-1381. 2023 - Wiley Online Library
- Cerda, A., Novara, A., & Moradi, E. (2021). Long-term non-sustainable soil erosion rates and soil compaction in drip-irrigated citrus plantation in Eastern Iberian Peninsula. Science of the Total Environment, 787, 147549. 2021 – Elsevier
- Marín-Sanleandro, P., Gómez-García, A. M., Blanco-Bernardeau, A., Gil-Vázquez, J. M., & Alías-Linares, M. A. (2023). Influence of the type and use of soil on the distribution of organic carbon and other soil properties in a sustainable and resilient agropolitan system. Forests, 14(6), 1085. 2023 - mdpi.com
- Matei, I., Pacurar, I., Rosca, S., Bilasco, S., Sestras, P., Rusu, T., ... & Tăut, F. D. (2020). Land use favourability assessment based on soil characteristics and anthropic pollution. Case study Somesul Mic Valley Corridor, Romania. Agronomy, 10(9), 1245. 2020 - mdpi.com

OCA18.3 - Charakteristika dopadu výstupu na spoločensko-hospodársku prax

Výstup je aplikáciou analýzy časových radov pri odhadovaní ďalšieho vývoja skúmaných veličín v poľnohospodárstve. Je príkladom aplikácie matematickej štatistiky pri hľadaní odpovedí na otázky súvisace s obrábaním pôdy.
The output is the application of time series analysis in estimating the further development of the studied variables in agriculture. It is an example of the application of mathematical statistics in finding answers to tillage questions.

OCA19.3 - Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces

Výstup môže prispieť k porozumeniu vybraných techník a užitočnosti aplikácie výsledkov výskumu v modernej matematickej štatistike do bežného života.
The output can help to better understanding how contemporary in mathematical statistics results are applied in every day life.

4. hodnotený výstup

1.

OCA5.4 - Oblasť posudzovania

Učiteľstvo matematiky (a ďalšia predmetová špecializácia) (Bc., Mgr.) teacher training in mathematics (bachelor/master degree)

OCA6.4 - Kategória výstupu tvorivej činnosti

vedecký výstup

OCA7.4 - Rok vydania výstupu tvorivej činnosti
2021

OCA8.4 - ID záznamu v CREPČ alebo CREUČ
ID = 453229

OCA9.4 - Hyperlink na záznam v CREPČ alebo CREUČ
https://app.crepc.sk/?fn=detailBiblioForm&sid=31BC15BB5BB6EDAD9457585006

Názov publikácie, na ktorú hyperlink poukazuje
Matematika pre manažérov

OCA14.4 - Charakteristika autorského vkladu

Autorka sa spolupodieľala (25%) na spracovaní tejto publikácie./
The author participated (25%) in the preparation of this publication.

OCA15.4 - Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod.

The output is a textbook of the basics of mathematics for future managers.
When writing text, the system definition, sentence, note, example, task was chosen. The theorems are given wihout proofs. We expect students to make sufficient efforts to understand them to the extent that they are able to solve tasks in the field on their own.
The aim was also to show that with the help of linear algebra, derivatives and integrals it is possible to model situations arising in practice, and thus to give a partial answer to the question about the meaning of mathematics in the education of economists and managers.

OCA18.4 - Charakteristika dopadu výstupu na spoločensko-hospodársku prax

Jedná sa o študijný materiál základov matematiky pre študentov manažmentu za podmienok malej hodinovej dotácie.
It is a study material of the basics of mathematics for students of management under the conditions of a small hourly allowance.

OCA19.4 - Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces

Výstup môže poslúžiť študentom učiteľstva matematiky ako ukážka tvorby študijných materiálov základov matematiky pre nematematické odbory za podmienok malej hodinovej dotácie.
The output can be used by students of mathematics teaching as an example of the creation of study materials in the basics of mathematics for non-mathematical disciplines under the conditions of a small hourly allowance.

5. hodnotený výstup

OCA6.5 - Kategória výstupu tvorivej činnosti
vedecký výstup

OCA7.5 - Rok vydania výstupu tvorivej činnosti
2022

OCA8.5 - ID záznamu v CREPČ alebo CREUČ
ID: 1013183

OCA9.5 - Hyperlink na záznam v CREPČ alebo CREUČ
https://app.crepc.sk/?fn=detailBiblioForm&sid=3F129C059416E458998E20D71532

Názov publikácie, na ktorú hyperlink poukazuje
Impact of renewable energy sources and nuclear energy on CO2 emissions reductions-the case of the EU countries

OCA14.5 - Charakteristika autorského vkladu

OCA16.5 - Anotácia výstupu v anglickom jazyku

The aim of this work is to analyse the dependence of carbon dioxide (CO_2) emissions on total energy consumption, the energy produced from renewable sources, the energy produced in nuclear power plants and the gross domestic product (GDP) in 22 European countries, over the period 1992–2019. The fully modified ordinary least squares model (FMOLS) and dynamic OLS (DOLS) were used to estimate the long-term cointegration relationship between the variables. First differenced (FD) general moments methods (GMM) were used in the estimation of short-run relationship dynamics. The results suggest that energy produced from renewable sources causes a reduction in CO_2 emissions per capita. On the other hand, total energy consumption increases CO_2 emissions in the long run. Although the mitigation effect of nuclear power was not found to be significant across the entire block of countries studied, a closer look at countries utilising nuclear energy reveals that nuclear energy positively affects the reduction in CO_2 emissions. Economic growth also has a positive effect on the reduction in CO_2 emissions, which confirms the decoupling of economic development from environmental impacts. These findings are crucial for understanding the causality between these variables and the adoption of new or revision of existing policies and strategies promoting the carbon-neutral and green economy at the EU and national level.

OCA17.5 - Zoznam najviac 5 najvýznamnejších ohlasov na výstup

• Pata, U. K., Calcali, O., & Altiner, A. (2026). Quantile-based insights into the impact of public environmental protection expenditures and renewable energy on sustainability performance in the EU-27. International Journal of Sustainable Development & World Ecology, 1-16. 2026 - Taylor & Francis
• Otsubo, Y. (2025). Unlocking decarbonization potential: Evaluating electrification impacts of emerging technologies in the oil and gas sector. Sustainable Futures, 9, 100693. 2025 - Elsevier
• Adebayo, T. S., Ozsahin, D. U., Olanrewaju, V. O., & Uzun, B. (2025). Decoding the environmental role of nuclear and renewable energy consumption: A time-frequency perspective. Annals of Nuclear Energy, 223, 111660. 2025 – Elsevier
• Mohamad, A. H. H., & Shaari, M. S. (2025). The environmental Kuznets curve in Japan with nuclear energy and foreign direct investment using ARDL and NARDL models. Discover Environment, 3(1), 300. 2025 - Springer
• Alghamdi, F. M., Kamel, A. R., Mustafa, M. S., Bahloul, M. M., Alsolmi, M. M., & Abonazel, M. R. (2024). A statistical study for the impact of REMS and nuclear energy on carbon dioxide emissions reductions in G20 countries. Journal of Radiation Research and Applied Sciences, 17(3), 100993. 2024 - Elsevier

OCA18.5 - Charakteristika dopadu výstupu na spoločensko-hospodársku prax

Výstup je súčasťou skúmania kointegračných vzťahov medzi časovými radmi ekonomického a ekologického charakteru. Je príkladom aplikácie matematickej štatistiky - ekonometrie, jej súčasných nástrojov, pri hľadaní odpovedí na otázky súvisace s globálnym otepľovaním.
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OCA19.5 - Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces

Výstup môže prispieť k porozumeniu vybraných techník a užitočnosti aplikácie výsledkov výskumu v modernej matematickej štatistike do bežného života.
The output can help to better understanding how contemporary in mathematical statistics results are applied in every day life.