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ABSTRACT BOOK



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Dear Respected Academics and Researchers,

On behalf of the Organizing Committee, we are pleased to announce that IV. International Congress On Finance, Economy And Sustainable Policies (ICOFESP) will be held in University of Prishtina from 30 October – 01 November 2025 in Prishtina, Kosovo

ICOFESP provides an ideal academic platform for researchers and professionals to discuss recent developments in economy. This event aims also to stimulate interaction in the field of finance, economy and policy developments in all these areas, and to showcase the expertise of our invited speakers and participants.

You can find more information about this event on the webpage of ICOFESP:
www.icofesp.com

All the papers are subject to rigorous peer-review by at least two members of scientific committee or additional reviewers.
We are looking forward to seeing you in Prishtina, Kosovo

With our best regards,
Organising Committee of ICOFESP

TOPICS

Climate Resilience and Sustainability

- Environmental Protection
- The role of climate change in regional development
- Climate Change and Economic Systems
- Climate Niche
- Innovative Approaches to Climate Adaptation and Mitigation.
- Rural and Urban Resilience
- Localising Climate Action and Enhancing Community Resilience.
- Climate Justice and Migration
- Nature-based Solutions and
- Ecosystem-based a Adaptation.
- Water Security, Agriculture and Food Systems
- Climate Finance
- Global Food Security
- Digital Technologies in the Fight Against Climate Change
- Just Energy Transitions
- Climate Change and Biodiversity
- One Health
- Environmental Pollutants: Sources, Impacts, and Mitigation Strategies
- Persistent Organic Pollutants (POPs): Chemistry, Toxicity, and Environmental
- Challenges Environmental Education for Sustainability: Empowering Communities to Combat Pollution
- Mathematical Biology and its applications

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FOREIGN INVESTMENTS, INSTITUTIONAL QUALITY, AND ECONOMIC GROWTH IN KOSOVO: A VECM ANALYSIS (2008-2024)

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Abstract

The aim of this study is to investigate the relationship between Foreign Direct Investment (FDI), institutional quality, and economic growth in Kosovo during the period 2008-2024. The analysis employs the Vector Error Correction Model (VECM), and the results reveal that the three variables under consideration move together in the long run and exhibit a stable equilibrium relationship. Furthermore, FDI is found to be the variable that adjusts most rapidly to restore this equilibrium. In brief, FDI responds the quickest to any disequilibria.

In the short run, the findings show that an increase in economic growth positively influences FDI. On the other hand, a decrease in the institutional quality negatively impacts FDI over time. These results suggest that, for investors, short-term economic growth and long-term institutional trust and governance quality are of significant importance.

The outcomes of this study support the view that foreign investments in developing countries are generally contingent upon both macroeconomic and institutional conditions.

Keywords: Foreign Investments, Institutional Quality, Economic Growth, Kosovo

A STUDY ON ENVIROMENTAL AWARENES AMONG TEACHERS

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Abstract

Environmental education is increasingly being embraced as a component of fostering sustainable development. The research designs encompass systematic comparative reviews, longitudinal surveys of recycling sensitivity, and mixed-method cross-sectional studies of measuring teachers' knowledge, attitudes, and practices. In this research, findings of an environmental education survey on primary, middle and high school teachers, of to assess their environmental concerns, personal conservation practices, and integrating environmental issues into pedagogy are demonstrated. Teachers, being the key learning facilitators and role models for the students, are of indispensable value in instilling environmental awareness at the formative school levels. Implications of the findings report a prevalent level of concern in which 73% respondents are very concerned regarding air pollution and 50 % are of the opinion that global warming is, very bad, but they recycled seldom, and 42% of them said they never recycle. Teachers also possessed high intention to change their lifestyle in order to reduce environmental damage. In actuality, the majority of respondents indicated they utilized their annual eco plan in class, and 65% have been involved in a like project or seminar. The analyses and our results showed the need for continuous professional development of teachers in all subjects and at every level of education. Specialized training programs and changes in curricula can strengthen the capacity of teachers to implement higher-quality environmental education

Keywords: Keywords: Ecology, Teachers, Education, Sustainability

THE IMPACT OF CLIMATE RISK ON GDP GROWTH IN EUROPEAN COUNTRIES

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Abstract

We examine the impact of CO₂ emissions on economic growth across 27 EU member states and 3 Western Balkan countries that are EU candidate countries, from 2004 to 2023, using a robust fixed-effect model. The results indicate a statistically significant positive relationship between carbon dioxide and economic growth, suggesting that the economic expansion in these countries, at least up to 2019, has been closely related to carbon-intensive industrial activities, transportation, and other factors. A complementary analysis focusing on the period before the EU Green Act from 2004 to 2019 confirms a positive association, emphasizing the dependence on heavy industries with limited environmental regulation. Our findings reveal a complex trade-off between economic development and environmental sustainability, highlighting that efforts to reduce carbon emissions may challenge traditional growth models. The study contributes to understanding the interconnection between environmental policies and economic growth. It provides valuable insights for policymakers seeking to balance these critical priorities by implementing further sustainable growth policies.

Keywords: Co₂ Emissions, Gdp Growth, European Union, Western Balkans

EFFECTS OF COUNTRIES CAD IN BANK LOANS QUALITY

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Abstract

This study investigates the impact of current account deficits on loan quality, macroeconomic conditions, and banking sector performance between 2000 and 2021 across EU and Western Balkan countries. Key macroeconomic variables were analyzed, including GDP growth, unemployment, credit growth, and inflation. The results reveal that while EU countries maintain financial stability, Western Balkan countries face persistent challenges due to structural imbalances, higher unemployment, and widening current account deficits. These vulnerabilities amplify credit risk and increase non-performing loans (NPLs), thereby constraining banking sector performance. In contrast, EU countries benefit from stronger institutional frameworks, more diversified economies, and sounder credit supervision mechanisms. The findings emphasize the importance of enhancing macro-financial resilience through improved fiscal discipline, targeted lending policies, and sustainable credit expansion. The study recommends region-specific reforms, such as strengthening credit risk management practices in the Western Balkans and maintaining labor market stability in the EU, to promote long-term financial stability and reduce systemic vulnerabilities.

Keywords: Macroeconomic Investigation, Financial Stability, Banking Sector Performance, And Economic Stability

RESILIENCE AS A FINANCIAL STRATEGY: QUANTIFYING THE CLIMATE RISK PREMIUM IN EASTERN EUROPEAN DEBT

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Abstract

This study provides robust empirical evidence that climate vulnerability significantly increases sovereign borrowing costs for Eastern European economies. Analyzing a balanced panel of ten countries from 2007 to 2023, we employ a novel, maturity-matched measure of country risk premium—the spread between domestic bank lending rates and the 12-month Euribor—constructed from open-access data. Estimating both Random- and Fixed-Effects models with Driscoll-Kraay standard errors to control cross-sectional dependence and global shocks, we find a statistically significant positive relationship between the ND-GAIN climate vulnerability index and the domestic risk premium. This result confirms that financial markets price physical climate risk, imposing a tangible "climate risk premium" on vulnerable nations. Our findings, which remain robust after considering macroeconomic fundamentals and the COVID-19 shock, underscore that building climate resilience is not merely an environmental imperative but a critical financial strategy for reducing sovereign risk and ensuring fiscal sustainability. This research provides policymakers with quantifiable evidence of the economic cost of climate vulnerability, strengthening the case for strategic investments in adaptation and green finance.

Keywords: Climate Risk Premium, Sovereign Debt, Climate Vulnerability, Eastern Europe, Panel Data

ASSESSING THE IMPACT OF FINTECH DEVELOPMENT ON THE PERFORMANCE OF MACEDONIAN BANKING SYSTEM: A CORRELATION-REGRESSION APPROACH

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Abstract

The rapid development of financial technology (FinTech) presents both significant opportunities and complex challenges for traditional financial institutions, fundamentally transforming the structure, efficiency, and competitiveness of the financial sector. FinTech innovations, ranging from digital banking and blockchain technology to mobile payments and artificial intelligence have redefined the way financial services are provided, forcing traditional institutions to rethink their strategies and adapt to an increasingly digital environment. In this context, it becomes crucial to analyze how FinTech influences the operations, performance, and long-term sustainability of financial institutions, particularly in emerging markets such as North Macedonia. The aim of this research is to explore the potential for FinTech development and to quantitatively evaluate its impact on the performance of the financial sector in North Macedonia. To achieve this goal, a correlation–regression analysis was employed to examine the relationship between selected FinTech indicators and the performance metrics of Macedonian financial institutions. The empirical findings indicate that North Macedonia provides favorable economic, technological, and regulatory conditions for the future expansion of FinTech enterprises. The results further reveal that FinTech indicators exert a measurable, though not highly significant, influence on the performance of financial institutions, suggesting that FinTech’s impact is still at an early stage of development. As one of the first comprehensive studies in this field within North Macedonia, this research expands the academic understanding of FinTech’s role in the national financial system and offers valuable insights for policymakers, regulatory bodies, and financial sector participants aiming to foster innovation and stability.

Keywords: Fintech, Financial Performance, Banking Sector, North Macedonia, Correlation–Regression Analysis, Innovation, Financial Stability

SOLITON DYNAMICS IN THE FRACTIONAL CHEN–LEE–LIU EQUATION: A BETA-DERIVATIVE APPROACH

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Abstract

In this paper, we study the fractional Chen–Lee–Liu (CLL) equation, a nonlinear evolution model that finds use in nonlinear wave propagation, fiber optics, and plasma physics. The beta derivative, which generalizes classical derivatives and enables the simulation of memory and hereditary features in intricate physical systems, is used to develop the fractional version of the CLL equation. The main goal of this work is to use the rational sine–cosine and rational sinh–cosh methods, which offer methodical ways to generate traveling wave solutions, to get exact analytical solutions of the fractional CLL problem. We provide periodic solutions described in terms of trigonometric functions by using the rational sine–cosine approach, which captures the system's oscillatory features. Similarly, hyperbolic-type solutions describing soliton-like structures are obtained using the rational sinh–cosh approach. Using 2D, 3D, and contour plots as evidence, illustrative examples show how effective these methods are. The power of fractional calculus with rational methods in nonlinear wave dynamics is demonstrated by the reduction of solutions to classical integer-order results.

Keywords: Fractional CLL Equation, Beta Derivative, Rational Sine–Cosine Method, Rational Sinh–Cosh Method

DESIGNING A TECHNOLOGY GOVERNANCE MODEL TO REDUCE IMBALANCES IN THE ENERGY SECTOR

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Abstract

The present study aims to design a technology governance model to reduce and solve the problem of energy imbalance. Considering the emergence of numerous issues and problems surrounding energy production and consumption in Iran, the main issue is the governance and macro-management method in this sector. Therefore, the lack of sufficient attention to the role of the consumer and the focus of the policy and planning system on performance and challenges, the failure to utilize the capacity of the private sector in increasing renewable energy production and implementing energy consumption management programs are among the challenges facing Natarazi. The research was conducted using a meta-synthesis approach. In the first approach, a set of studies conducted by a researcher in a specific field is examined and analyzed, and in the second approach, multiple sets of studies conducted by different researchers in a specific field are examined.

The results showed that a systemic approach should be taken to design a technology governance model to solve the problem of imbalance and improve energy consumption management. The inputs, processes, and outputs in a process plan can help develop a hybrid governance system and resolve energy imbalances. Optimizing energy consumption is a cross-sectoral and inter-sectoral issue and requires cooperation between different agencies and ministries. It is essential to create a single authority for optimizing energy consumption and eliminating imbalances by integrating existing structures in the Ministry of Petroleum and Energy and the National Transportation and Fuel Management Headquarters.

Keywords: Governance, Energy Imbalance, Consumption Management, Systems Approach, Optimization.

SUSTAINABLE DEVELOPMENT IN THE WESTERN BALKANS: ENVIRONMENTAL AND CLIMATE CHANGE POLICY

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Abstract

Research paper will be focused in the Western Balkans- North Macedonian case, the local government experiences, the challenges, handicaps or significant environmental and climate change challenges. As a member of the Council, Tetovo city in North Macedonia exemplifies the efforts of local governments to address these issues, based on my practical experience. Local governments in the Western Balkans, including Tetovo city, are taking steps to implement Sustainable Development Goal (SDG) policies. However, decentralization remains a significant challenge. Limited administrative capacities, inadequate funding, and lack of coordination between local and national authorities hinder the effective implementation of environmental and climate change policies. Despite these challenges, local governments are developing strategies to increase renewable energy production, reduce greenhouse gas emissions, and promote sustainable development ².

In North Macedonia, the Green Cities Action Plan (GCAP) and the Resilient Skopje project demonstrate the government's commitment to addressing environmental and climate change challenges. The GCAP aims to identify, prioritize, and address the city's most pressing environmental challenges, including public building energy efficiency, urban transport, water, and wastewater management. Tetovo city, as a member of the Council, can learn from these initiatives and adapt them to its specific needs and challenges.

To overcome the challenges of decentralization, local governments in the Western Balkans need increased support and capacity building. Tetovo city and other local governments in the region can inform policy decisions and support the development of effective strategies for sustainable development ^{1 2}.

Keywords: Key Words: Sustainability, Local Governance, Decentralization, Climate Change, Challenges!

ASSESSING THE GREEN ECONOMY IN THE WESTERN BALKANS: A PANEL DATA ANALYSIS USING FIXED AND RANDOM EFFECTS

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Abstract

In recent decades, the Western Balkans have faced the simultaneous difficulties of pursuing economic development and addressing increased environmental pressures. Concerns regarding the sustainability of current growth patterns have been raised by the rapid industrialization, rising energy demand, and slow green transition progress. This study uses panel data estimation techniques using both Fixed Effect (FE) and Random Effect (RE) models to examine the relationship between economic growth and carbon dioxide (CO₂) emissions in the Western Balkan countries from 2000 to 2024. Key macroeconomic and environmental variables are covered by the empirical analysis, which is based on yearly data from the World Bank's World Development Indicators. The findings show a positive and statistically significant correlation between GDP growth and CO₂ emissions, suggesting that greater rates of economic growth are linked to worsening environmental conditions in the area. The hypothesis that the Western Balkans' current growth pattern is still primarily carbon-intensive and not yet in line with low-emission or sustainable pathways is supported by this finding. Furthermore, by highlighting the structural and policy elements unique to each nation that affect emission dynamics, the Hausman test validates the Fixed Effect model's applicability. According to the study's significant policy implications, the Western Balkans must strategically move toward eco-innovation, renewable energy use, and more robust institutional frameworks for the green transition if they are to meet the Sustainable Development Goals.

Keywords: Co₂ Emissions, Economic Growth, Western Balkans, Fixed Effect, Random Effect, Panel Data, Sustainability, World Bank

**DIFFERENCES IN ALIGNMENT WITHIN SUSTAINABILITY AND
ENVIRONMENTAL POLICIES:
A COMPARATIVE ANALYSIS OF TURKEY AND THE EUROPEAN UNION**

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ABSTRACT

This study comparatively examines the sustainability and environmental policies of Turkey and the European Union within the framework of a two-case model. The research evaluates the policy approaches, governance structures, and implementation levels of both cases through document analysis. The findings reveal that Turkey's sustainability policies primarily focus on raising awareness, enhancing stakeholder participation, and strengthening transformation capacity. In contrast, the European Union adopts a comprehensive strategy aligned with the "Fit for 55" and "Net Zero 2050" targets, encompassing energy efficiency, financial reporting, and enforcement mechanisms. The EU's institutional framework enables environmental performance to become measurable and accountable through instruments such as sustainable lending criteria, CSRD standards, and citizen awareness initiatives. The results indicate that, for Turkey to effectively align with the European Green Deal, it is necessary to strengthen institutional coordination, improve financial reporting standards, and establish systematic policy monitoring mechanisms. Overall, the study underscores the structural and governance-related gaps that must be addressed for Turkey to achieve full alignment with EU sustainability governance and to advance its own sustainable development objectives.

SUSTAINABILITY AND CLIMATE FLEXIBILITY IN HIGHER EDUCATION MANAGEMENT: TRANSFORMING UNIVERSITIES INTO CLIMATE-RESPONSIVE INSTITUTIONS

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Abstract

Higher education institutions (HEIs) play a crucial role in shaping the future of climate action, sustainability awareness, and community resilience. This study examines how university management can integrate sustainability principles into institutional governance, operations, and academic programs to foster climate-resilient education systems.

A Climate-Responsive University Management Model is proposed, focusing on three interconnected domains: (1) strategic governance for sustainability, (2) innovation and digital transformation in university operations, and (3) engagement with local communities and industries for climate adaptation. This framework positions HEIs not just as knowledge centers but as active agents of sustainable societal transformation.

The research adopts a qualitative, desk-based methodology based on secondary data sources, including institutional sustainability reports, policy frameworks, international rankings, academic publications, and official documents from European and Balkan universities. By conducting a comparative analysis of these secondary materials, the study identifies emerging trends, institutional best practices, and key governance models that have successfully embedded climate resilience within higher education management. The use of secondary data enables a broad and evidence-based understanding of how HEIs operationalize sustainability across strategic, academic, and infrastructural dimensions.

The findings offer actionable insights for university leaders and policymakers, aligning higher education management with global sustainable development goals (SDGs), particularly SDG 4 (Quality Education), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals).

Keywords: University Management, Climate Resilience, Sustainable Education, Institutional Governance, Higher Education Transformation

SUSTAINABLE TOURISM UNDER CLIMATE CRISIS: A K-NN REGRESSION APPROACH TO PREDICT TTDI SCORES IN OECD COUNTRIES

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Abstract

Tourism is one of the sectors most severely affected by climate change, facing issues such as extreme weather, higher temperatures, and limited resources. To stay competitive, countries need to comprehend better how to manage tourism in these challenging conditions.

The Travel and Tourism Development Index, developed by the World Economic Forum, provides a multidimensional framework for assessing tourism performance across various pillars, including sustainability, infrastructure, natural and cultural resources, and enabling environment. Building on this framework, the present study employs a k-Nearest Neighbors regression model to predict TTDI scores for OECD member countries by incorporating both climate-related and socio-economic indicators.

This study aims to predict TTDI scores for OECD member countries by employing a k-Nearest Neighbors regression model that incorporates both climate-related and socio-economic indicators. The empirical analysis relies on variables including per capita CO₂ emissions, renewable energy consumption, GDP per capita, and tourism revenues as explanatory factors. Data preprocessing involved normalization and cross-validation procedures to determine the optimal k values and distance metrics, while model performance was evaluated against conventional regression benchmarks.

This study uses machine-learning and sustainability data to add to the growing research on sustainable tourism. The findings offer practical insights for policymakers and industry leaders facing climate challenges.

The results underscore that sustainability-related variables-particularly the adoption of renewable energy and climate vulnerability among the strongest predictors of TTDI scores. These findings suggest that low-carbon strategies and coherent climate policies are crucial for enhancing resilience and safeguarding the long-term growth of the tourism sector within OECD economies.

Keywords: Travel And Tourism Development Index, Oecd, K-Nn Regression

Determinants of Willingness to Pay Environmental Taxes in Transitional Economies

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Abstract

This study examines how individuals' perceptions of climate change, their trust in institutions, and their financial situation influence their attitudes towards environmental taxes. Using data from the Life in Transition Survey IV (LiTS IV), conducted by the European Bank for Reconstruction and Development (EBRD) and the World Bank, the characteristics of individuals who support increasing taxes to protect the environment were analyzed. To this end, logistic regression models were applied to predict the likelihood of respondents answering 'agree' or 'strongly agree' to environmental taxes. The analysis used environmental awareness, belief in the anthropogenic nature of climate change, the perceived severity of climate impacts on individuals and children, trust in institutions, and household financial security as key explanatory variables; income group, education, gender, age, settlement type, and country effects were controlled for. The results show that individuals who are financially secure, trust institutions, and believe in human-induced climate change are significantly more likely to support environmental taxes. In contrast, low-income and financially vulnerable households are less supportive. The findings emphasize that strengthening institutional trust and environmental awareness is crucial for increasing public support for green taxation.

Keywords: Environmental Taxation, Climate Change Perception, Institutional Trust, Financial Security, Tax Ethics.

THE DYNAMIC RELATIONSHIP BETWEEN ENERGY CONSUMPTION, ECONOMIC GROWTH, AND FOREIGN DIRECT INVESTMENTS IN KOSOVO: AN ARDL BOUND TESTING APPROACH

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Abstract

Sustainable development goals have become the central focus of countries in contemporary times. In this context, the relationship between economic growth and energy consumption plays a critical role. This study examines the impact of economic growth and foreign direct investments (FDI) on energy consumption in Kosovo over the period from Q1 2010 to Q4 2021. The study employs the Autoregressive Distributed Lag (ARDL) bound testing approach to analyze both the short- and long-term dynamic relationships among the variables under consideration. The results of the bound test strongly indicate the presence of a long-run cointegration relationship among the variables. According to the long-term estimation results, economic growth has a statistically significant and positive effect on energy consumption. However, no significant impact of foreign direct investments on energy consumption was found. The ineffectiveness of FDI can be attributed to the fact that these investments are concentrated in service sectors or areas with low energy consumption, rather than energy-intensive industries.

Keywords: Energy Consumption, Economic Growth, Foreign Direct Investments, ARDL Bound Test

MACROECONOMIC RESILIENCE OR FRAGILITY? THE WESTERN BALKANS' GROWTH AND INFLATION LANDSCAPE BEFORE COVID-19

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Abstract

Examining the relationship between inflation, economic growth, and associated macro-indicators, this study looks at the structural vulnerabilities and macroeconomic resilience of Western Balkan economies from 2000 to 2020, before the COVID-19 pandemic. The analysis examines the long-term dynamics of price stability and growth performance in light of post-transition reforms, fiscal adjustments, and external shocks using panel data for six Western Balkan nations. The findings show that the region's growth paths were diverse, with moderate GDP growth frequently coexisting with steady inflationary pressures. This indicates a partial convergence toward EU standards but enduring structural vulnerabilities. The study emphasizes how, rather than productivity increases or diversification, remittances, domestic consumption, and outside funding were the main drivers of macroeconomic stability in the ten years prior to the pandemic. In addition to highlighting the significance of structural change, fiscal restraint, and monetary coordination for a sustainable recovery and EU integration, these findings provide policy insights into the region's limited resilience to global disruptions. In order to improve future crisis preparedness, the analysis also emphasizes the necessity of strong macroeconomic governance and revitalized regional cooperation. Western Balkan economies can progress toward a more resilient and inclusive development path by diversifying their growth sources and bolstering their institutional capacity.

Keywords: Western Balkans, Economic Growth, Inflation, Resilience, Macroeconomic Stability, Panel Data, Pre-Covid Period

CLIMATE CHANGE AND SUSTAINABLE GROWTH: AN EVALUATION ON TURKIYE

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Abstract

Uncontrolled increases in temperature resulting from economic activities, as well as natural greenhouse gas emissions, lead to climate change. Adverse weather events, droughts, natural disasters, and the destruction of natural resources threaten the world's future. This situation also makes it impossible to achieve sustainable economic growth. In recent years, global initiatives have aimed to control global warming and its resulting effects. Global negotiations, agreements, protocols, and the establishment of international collaborations, as well as action plans developed by countries at the national level, support a common struggle. While measures are being developed in many areas such as production and energy to ensure the continuity of life and the sustainability of growth, it is crucial to design every aspect of the necessary transformation. This study investigated the relationship between temperature change and economic growth in Turkey during the 1980-2023 period using cointegration and causality tests. Consequently, a causality relationship from economic growth to temperature increase was found. Based on this result, policy recommendations were made to reduce emissions from production.

Keywords: Küresel Isınma, İklim Değişikliği, Sürdürülebilir Büyüme

A BIBLIOMETRIC ANALYSIS ON SUSTAINABLE BRAND MANAGEMENT

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Abstract

Sustainability has become important for both institutions and consumers with the increase in environmental and socio-economic problems, making it necessary for brands to shape their strategies accordingly and engage in sustainability-focused communication activities. Although there is an increase in successful practices and academic studies on sustainable brand management, the literature review reveals that there are still significant gaps in this area. The aim of this study is to determine the bibliometric properties of articles published on sustainable brand management in the Web of Science (WOS) database between 2000 and 2025, within the framework of various parameters, using the VOSviewer program. The fact that the number of studies conducted tends to increase over the years indicates that it may be useful to address the study topic from different aspects both currently and in the future. In the distribution of articles by country, the United States ranked first, followed by the United Kingdom, China and Australia, respectively. The most frequently used keywords on this subject were revealed to be sustainability, sustainable brands, brand image, sustainable branding, sustainable marketing. The most cited authors in the field are Peter Dauvergne, Jane Lister and Yuri Seo. In addition, as a result of the analyses, it is expected that the study will shed light on future research on sustainable brand management by providing information and suggestions on the direction in which the studies in the literature have evolved and the aspects of the subject that have not been studied before.

Keywords: Sustainability, Sustainable Marketing, Sustainable Brand, Sustainable Brand Management, Bibliometric Analysis.

SUSTAINABILITY TRANSITIONS AND ECONOMIC VIABILITY: COMPARATIVE INSIGHTS FROM NORWAY, CHINA AND THE EU

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Abstract

This study examines how diverse policy frameworks shape the economic viability of sustainability transitions through a comparative analysis of Norway, China, and the European Union (EU). Using a mixed-method approach that combines comparative policy analysis with statistical data, the research evaluates indicators such as electric vehicle adoption, renewable energy costs, and carbon pricing outcomes. Each case represents a distinct institutional and strategic pathway: Norway's demand-side incentives stimulated consumer-driven diffusion; China's production-oriented industrial coordination achieved scale-driven cost reductions; and the EU combined regulatory reforms with carbon markets and infrastructure investment.

Grounded in Schumpeter's theory of creative destruction, the analysis conceptualizes sustainability transitions as processes of structural economic transformation in which innovation disrupts existing systems and redefines growth dynamics. The findings show that fiscal, regulatory, and infrastructural measures must interact coherently to make sustainable technologies profitable, credible, and scalable. Cost reductions and market maturity are shown to result not from spontaneous competition, but from deliberate institutional design and coordinated state action. Thus, the study situates sustainability transitions within a broader evolutionary economic framework, illustrating how innovation, policy coherence, and public trust together enable long-term structural transformation toward sustainability.

Keywords: Sustainability Transitions, Economic Viability, Policy Analysis, Creative Destruction, Innovation

TEMPORAL AND SPATIAL ANALYSIS OF SURFACE RUNOFF WATER IN THE CONTEXT OF CLIMATE SCENARIOS: THE CASE OF THE MERİÇ–ERGENE BASIN

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Abstract

Global climate change directly or indirectly influences the functioning of natural systems. In addition to the degradation of natural areas under the pressures of increasing population and urbanization, recent rises in temperature and alterations in precipitation regimes have affected many ecosystem services provided by nature. At this point, the amount and spatial distribution of surface runoff water, one of the fundamental components of the hydrological cycle that significantly contributes to ecosystem services, are also being influenced. Changes in surface runoff have important implications for the sustainable management of water resources, flood risk, agricultural productivity, and soil erosion control. In this context, the present study aims to analyze the temporal and spatial variations of surface runoff water within the boundaries of the Meriç–Ergene Basin for both current and future conditions. For this purpose, surface runoff amounts were calculated using the Soil Conservation Service Curve Number (SCS-CN) method for present and future periods. Future assessments were carried out using CMIP6 global climate model outputs (scenarios SSP2-4.5 and SSP5-8.5) and future land use/land cover data generated by the FLUS Model to perform analyses and mapping for the year 2050. The results reveal that changes in precipitation patterns and land use/land cover classes significantly affect the amount of surface runoff water. Based on these findings, recommendations were proposed to address these impacts, and the outcomes are expected to contribute to future studies on sustainable water resource management in the region.

Keywords: Surface runoff, Climate scenarios, Spatio-temporal analysis, SCS-CN.

NATURE-BASED CLIMATE-RESILIENT SCENARIOS IN PUBLIC SPACES: THE CASE OF KIRKLARELİ

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Abstract

Contemporary urban areas, where the majority of the world's population resides, are characterized by dense built-up zones and impervious surfaces that are largely disconnected from nature. This situation increases the vulnerability of cities to the adverse impacts of climate change. In particular, rising temperatures and alterations in precipitation regimes have led to numerous environmental challenges in urban areas, including flood events and the urban heat island effect. In this context, the present study aims to identify the streets in the Central District of Kırklareli that are most exposed to flood risk and high land surface temperature (LST), and to develop corresponding nature-based recommendations. To achieve this goal, land surface temperature analysis was first conducted using satellite imagery. Subsequently, regions susceptible to flooding under conditions of maximum precipitation were determined based on rainfall data. According to the analytical results, areas where flood risk zones intersect with high surface temperature regions were identified as the most vulnerable areas to climate change impacts. The findings indicate that certain streets within the study area are exposed to flood risk and that land surface temperatures have increased compared to previous years. Based on the spatial outcomes, nature-based solution proposals were developed, aiming to reduce flood risk and lower surface temperatures through the use of vegetative structures that provide shade. The results of this study demonstrate that nature-based approaches make significant contributions to the development of climate-resilient urban environments.

Keywords: Flood risk, Land Surface Temperature (LST), Nature-based solutions, Climate adaptation, Spatial analysis.

THE “INHERENT VICE” DEFENSE IN THE AGE OF CLIMATE CHANGE: THE MONTREAL CONVENTION AND THE EXPANDING LIABILITY OF CARRIERS

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Abstract

Climate change and rising global temperatures are reshaping the legal understanding of carrier liability for the air transport of perishable goods under the Montreal Convention. Article 18(2)(a) allows carriers to avoid liability when loss results from the “inherent vice” of the goods, but as heat conditions become more foreseeable and manageable, this defense has narrowed. This study examines the carrier’s duty of care within the Montreal Convention and IATA Perishable Cargo Regulations (PCR), focusing on the 2025 case *Wealmoor Ltd v. KLM*. The English High Court ruled that the deterioration of fresh asparagus shipped from Peru to London, caused by a deactivated cooling system and an open cargo door, constituted an “event” within the carrier’s control and rejected KLM’s “inherent vice” defense. Although the judgment did not explicitly mention climate change, it implicitly acknowledged that high temperatures are now normal operational conditions, expanding the carrier’s responsibility to prevent foreseeable damage. The findings show that environmental heat is no longer treated as an unforeseeable or external factor but as a background condition that raises the required standard of care. Consequently, climate change does not introduce a new causal element but redefines the diligence expected from carriers, limiting the “inherent vice” exception and imposing stricter duties to preserve cold chain integrity, minimize ground delays, and manage temperature-sensitive cargo. This development highlights the need for international air cargo law to adapt its liability framework to the operational realities of a warming climate.

Keywords: Cargo, Perishable Goods, Carrier, Liability

THE POLITICAL ECONOMY OF DIGITAL AUTHORITARIANISM: GEOPOLITICAL AND ECONOMIC IMPLICATIONS

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Abstract

The digital age has transformed political power, surveillance, and global competition. Advanced technologies such as artificial intelligence, big data, and cyber infrastructure allow states to extend their influence beyond territories and economies into information flows and social behavior. This evolution has fostered a new governance model known as "digital dictatorship," where political control is exercised through algorithmic regulation, real-time surveillance, and information manipulation rather than overt force.

The geopolitical impact is significant. While Western democracies prioritize digital freedom and privacy, emerging powers like China and Russia employ technology for both domestic control and international leverage. Thus, global power now hinges on digital sovereignty—the capacity to govern data ecosystems and technological infrastructure.

From a political economy perspective, digital dictatorships enhance state capacities affecting economic governance, market control, and wealth distribution. Control over digital domains enables states to influence economic incentives, regulate financial flows, and monitor labor markets through data-driven policies. This concentration of digital economic power consolidates political hierarchies and exacerbates inequalities, intertwining economic strategies with authoritarian stability and competitive geopolitics.

For middle powers such as Turkey, managing digital integration and dependence is crucial. Digital infrastructure shapes political authority, cybersecurity, and public discourse, compelling a redefinition of sovereignty and diplomacy. Understanding this intersection requires new frameworks that explain state accumulation of digital power and legitimacy amid constant connectivity.

This paper investigates digital authoritarianism within global geopolitical and political economy shifts, analyzing how digitalization intensifies authoritarianism, alters international alignments, affects economic governance, and challenges the liberal world order.

Keywords: Digital Dictatorship, Political Economy, Geopolitical Transformations, Digital Sovereignty, Economic Governance

THE EU'S SUSTAINABLE GREEN ENERGY AGREEMENT AND THE WESTERN BALKANS

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Abstract

The European Union (EU) Green Energy Deal is a comprehensive policy initiative aimed at achieving net-zero greenhouse gas emissions by 2050. Central to this strategy is the transformation of energy production and consumption through a shift from fossil fuels to renewable sources, thereby reducing the carbon footprint of the energy sector. The "Clean, Secure and Affordable Energy" component emphasizes the development of sustainable, competitive, and environmentally friendly energy systems while ensuring energy security. Beyond environmental objectives, the Green Deal incorporates broader socio-economic goals, including economic growth, job creation, and the mitigation of energy poverty. Energy policy thus becomes a key instrument in advancing the EU's climate neutrality agenda and facilitating structural transformation through the integration of energy markets across member states. The Western Balkans hold strategic importance in the external dimension of the Green Deal. With the 2020 Sofia Declaration, the region committed to the EU's carbon neutrality objective and began aligning its climate and energy policies accordingly. However, several structural challenges—such as heavy reliance on coal, insufficient renewable energy infrastructure, and limited institutional capacity—impede progress. Despite ongoing support from the EU through financial instruments and technical assistance, the successful integration of the Western Balkans into the Green Deal framework requires sustained reforms and enhanced regional cooperation. This study investigates the extent to which the EU Green Energy Deal is being implemented across the Western Balkan countries and explores the opportunities and constraints shaping this transition.

Keywords: Eu, European Green Deal, Western Balkans.

TRANSLATING THE PLANET: LANGUAGE MEDIATION AND CLIMATE COMMUNICATION IN NGO AND MEDIA CONTEXTS

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Abstract

As the climate crisis intensifies, effective communication across languages and cultures becomes essential for mobilising collective action. Yet the role of translators and interpreters in shaping climate narratives and sustainability discourse remains underexplored. This study investigates how environmental communication is mediated in NGO and media contexts, focusing on translated and localised materials produced by international organisations such as Greenpeace, WWF, and UNDP. Drawing on the framework of ecological translation studies and critical discourse analysis, it examines how key concepts such as climate justice, resilience, and sustainability are adapted across languages and cultural settings. The analysis highlights how translators and interpreters act as cultural negotiators, recontextualising environmental messages to make them accessible, persuasive, and locally relevant. Findings reveal that linguistic mediation not only transfers information but also reconstructs values and priorities within sustainability narratives, shaping how communities perceive their role in climate action. By foregrounding the translational dimension of environmental communication, this paper argues that translation and interpreting are vital components of climate resilience, contributing to awareness, inclusion, and behavioural change in the face of global environmental challenges.

Keywords: Ecological Translation Studies, Environmental Communication, Sustainability Discourse

DESIGNING A MODEL OF CULTURAL RESISTANCE AGAINST ECONOMIC SANCTIONS IN THE ISLAMIC REPUBLIC OF IRAN

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Abstract

This study aims to design a model of cultural resistance against economic sanctions in the Islamic Republic of Iran. Methodologically, the research is applied, qualitative, and exploratory–explanatory, conducted through expert interviews using a snowball sampling technique. The statistical population includes cultural managers and policymakers at different levels. Sampling continued until theoretical saturation was reached.

Data analysis followed the Grounded Theory approach, classifying findings into causal, contextual, intervening, strategic, and consequential categories, with cultural resistance (cultural–economic resilience) as the core concept. The results indicate that cultural resistance is not merely a defensive reaction to external threats but an active and multidimensional strategy to preserve national identity, independence, and vitality amid global challenges.

This resistance emerges through complex interactions among various factors and functions as a living and adaptive system. Key strategies identified for fostering resilience include:

Promoting the resistance economy in public culture,

Producing content focused on hope and resilience,

Teaching resilient lifestyles and responsible consumption,

Supporting domestic cultural products and creative industries, and

Strengthening social capital through community networking.

Through open, axial, and selective coding, the study proposes a contextual model of cultural resistance, emphasizing its role as a proactive mechanism for maintaining societal sustainability under economic pressure

Keywords: Model Design, Cultural Resistance, Economic Sanctions

INTERNATIONAL CLIMATE FINANCE WITHIN THE FRAMEWORK OF SUSTAINABLE ECONOMY

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Abstract

The purpose of the paper is to review the climate finance from the standpoint of sustainable economy. The importance of this study stems from the fact that it is a key component of the global climate governance architecture, it is emphasized within the frameworks of the United Nations Framework Convention on Climate Change and the Paris Agreement. The scope of this study: It covers international climate finance. As a method, descriptive analysis is employed by examining recent global figures. Findings indicate that climate finance public-private split has increased in favor of private sector throughout the time, the households/individuals take the highest amount for private sector, while the national development finance institutions receive the largest amount for the public, climate finance instruments were not equally distributed among each other. The paper concludes that climate-oriented projects as part of sustainability in economy and finance is becoming key and pivotal issue in global and local finance funds, and more funds have been directed to 'climate finance' in international loan markets by local and international financial institutions with the rise of the notion of sustainability.

Keywords: Climate Finance, Sustainability, Economy

ECO-ANXIETY AND RELIGIOUS COPING: PATHWAYS TO PSYCHOLOGICAL RESILIENCE IN THE CLIMATE CRISIS – THE CASE OF KIRKLARELI UNIVERSITY STUDENTS

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Abstract

Environmental threats and natural disasters caused by climate change are increasingly leading individuals to experience eco-anxiety, fear, guilt, and feelings of hopelessness. This condition profoundly affects not only individual psychological well-being but also social solidarity, environmental behaviors, and perceptions of the future. In this psychologically challenging process, religion and spirituality emerge as significant sources of coping that provide individuals with meaning, hope, and endurance.

This study aims to examine the eco-anxiety arising from the climate crisis from the perspective of the psychology of religion. Conducted on a sample of students from Kırklareli University, the research analyzes the role of religious coping strategies—such as prayer, worship, engagement with sacred texts, community support, and perceiving nature as a divine trust—in enhancing individuals' psychological resilience in the face of climate change. Furthermore, spiritual and ritual-based coping mechanisms developed within different religious and cultural contexts are comparatively evaluated.

In conclusion, the study emphasizes that in discussions of climate change adaptation and mitigation, attention should be given not only to technical and economic solutions but also to faith-based psychosocial resources. Within this framework, the research seeks to highlight the contributions of the psychology of religion in addressing the challenges posed by the climate crisis.

Keywords: eco-anxiety, climate crisis, psychological resilience, religious coping, community support.

DYNAMIC BEHAVIOR OF REVERSIBLE REACTIONS UNDER THE M-FRACTIONAL DERIVATIVE FRAMEWORK

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Abstract

In this study, the reversible reaction system in chemical kinetics is analyzed under the M-fractional derivative approach. The M-derivative allows a more realistic representation of memory and hereditary effects that are often neglected in classical integer-order models. The governing equations are analytically solved by applying the Laplace transform and its inverse formulated for the M-fractional derivative. The obtained solutions for different fractional orders are compared with those of the classical first-order model to examine the influence of the fractional parameter on the system dynamics.

Graphical analyses demonstrate that as the fractional order decreases, the reaction dynamics slow down, the concentration transitions become smoother, and the system exhibits a noticeable memory effect. These findings indicate that the M-fractional derivative model provides a more flexible and realistic description of nonlocal temporal effects in reversible reactions compared to the classical approach. Overall, the study highlights the contribution of fractional calculus-based methods to a deeper understanding of reaction kinetics and complex chemical systems.

Keywords: M-Fractional Derivative, Reversible Reaction, Laplace Transform

CAPUTO FRACTIONAL DERIVATIVE APPLIED TO TRANSMISSION DYNAMICS OF MONKEYPOX VIRUS

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Abstract

This study develops and analyzes a fractional-order mathematical model for the transmission dynamics of monkeypox (mpox) virus in Nigeria using the Caputo fractional derivative. Unlike classical integer-order epidemic models, fractional calculus enables incorporation of memory and hereditary properties in disease dynamics, thereby capturing long-range temporal correlations that are inherent in real-world epidemic processes. We extended a previously established integer-order compartmental model of mpox by reformulating it in the Caputo sense and applied a corrected fractional Adams–Bashforth–Moulton predictor–corrector integrator to obtain numerical solutions. Weekly confirmed case data from Nigeria, spanning May 29, 2022 to May 21, 2023, were employed for model calibration and parameter estimation. Using nonlinear least squares fitting, we simultaneously estimated the effective transmission rate, reporting factor, and the fractional order of differentiation. The results yielded an optimal fractional order of $\alpha \approx 0.215$, indicating strong memory effects in mpox spread. The fractional model showed superior agreement with the observed epidemic trajectory compared to the classical model. Sensitivity analysis further demonstrated the influence of vaccination and quarantine rates on the basic reproduction number R_0 and its components. Our findings highlight the importance of fractional-order modeling in accurately capturing epidemic persistence and provide a framework for improved forecasting and control strategies against mpox and similar emerging diseases.

Keywords: Monkeypox Virüs, Caputo Fractional Derivative, Fractional-Order Model, Numerical Simulation, Transmission Dynamics, Parameter Estimation

SEABED SUSTAINABILITY: UN SGD 14 AND THE INTERNATIONAL LAWS OF THE SEAS

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Abstract

Deep-sea mining is fast becoming a major resource extraction trend amongst the advanced economies of the world. The CAGR projections for the industry state +33.8% for the period between 2023-2032. This reflects a jump from USD2.3 billion in 2023 to USD41.3 billion in 2032. The International Union for Conservation of Nature (IUCN) was founded in 1948 under the auspices of the United Nations (UN). IUCN is the world's largest environmental network of over 1300 organizations and over 10,000 environmental experts in all fields. UN Sustainable Development Goals (UN SDGs), SDG-14 addresses conservation and sustainability for using the oceans, seas, and marine resources in compliance with international law. Marine life below the depths of two hundred meters is the largest natural habitat in the world. 95% of all life forms on this planet live in this unique ecosystem. The present technological advancements for seabed extraction allow collection and excavations up to the depths of 6000 meters. The 1982 UN Convention on the Law of the Sea (UNCLOS) is the codified international law of the seas, along with other customary international laws. The scarcity of empirical data on the impact of deep seabed mining makes it difficult to regulate and navigate its impact on the 95% of life living on the seabed. This paper provides an overview of UNCLOS and some of the challenges facing the sustainable use of the world's oceans and seas.

Keywords: Sustainability, Un Sdg-14, Un, Unclos, Deep Sea Mining

THE ROLE OF RENEWABLE ENERGY POLICIES IN REDUCING CARBON EMISSIONS

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Abstract

This article emphasizes the importance of renewable energy sources at both global and local levels, thoroughly addressing investments and policies in this field. The limited availability of energy resources and the environmental damage caused by fossil fuels have made sustainable energy use a necessity. Renewable sources such as solar, wind, hydroelectric, biomass, and geothermal energy have the potential to minimize environmental impacts while contributing to economic development. The article examines international developments and those specific to Turkey in the renewable energy sector, highlighting energy incentives and investment models in this context. Additionally, it discusses the critical role of renewable energy in addressing issues like climate change and global warming. Analyses of Turkey's energy policies include significant topics such as carbon taxation and international cooperation. In conclusion, the transition to renewable energy is noted to provide not only environmental benefits but also economic and social opportunities. In this context, innovative and sustainable strategies are recommended for policymakers and the private sector.

Keywords: Renewable Energy, Sustainability, Energy Policies, Climate Change, Energy Investments

PM10 CONCENTRATIONS DURING A SAHARA DUST TRANSPORT EVENT IN ÇANAKKALE, TÜRKİYE

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Abstract

Dust transport, a widespread natural event, induces substantial elevations in particulate matter (PM) concentrations. Türkiye is notably impacted by dust episodes, particularly those originating from the Sahara Desert. This study examines PM10 concentrations associated with a Sahara dust event that occurred on February 01, 2015, to assess its influence on air quality in the urban center of Çanakkale province, situated in the Marmara Region of northwestern Türkiye. This study investigates a desert dust transport event that to highest level on February 01, 2015, by examining seven days from January 29 to February 04, 2015, covering the event's precursor and dispersion stages. During this time period, Aerosol Optical Depth (AOD) and Angstrom Exponent (AE) values, obtained from the Moderate Resolution Imaging Spectroradiometer (MODIS) instrument aboard NASA's Aqua and Terra satellites, have been subjected to a comparative analysis with particulate matter (PM10) concentration data measured air quality monitoring station (AQMS) located in the urban center of Çanakkale province.

Keywords: Sahara Dust, Çanakkale, Particulate Matter (PM), Aerosol Optical Depth (AOD), Angstrom Exponent (AE).

ADAPTIVE SOCIAL PROTECTION IN THE FACE OF NATURAL DISASTERS

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Abstract

Adaptive social protection emerges from the increasing needs of societies and economies to grapple with the compounding effects of climate change, pandemics, conflicts, and economic vulnerabilities. They present interconnected and recurring shocks, rather than isolated events, and require a well-coordinated response. This response should be in place to automatically activate once a shock is present. Adaptive social protection is the system that integrates social protection, disaster-risk management, and climate-change into a coherent system that can prepare for, cope with, and adapt to crisis (Bowen et al., 2020). Adaptive social protection is a shift in the paradigm of social protection from temporary relief to systemic resilience. It is built upon four interconnected building blocks: programs, data and information systems, finance, and institutions and partnerships. To make this new paradigm operational, the delivery chain has four phases: assess, enroll, provide, and manage. Western Balkan countries, which have become increasingly prone to risks from demographic shifts, natural disasters, and climate change, stand to benefit from adopting adaptive social protection. This may be done by developing integrated registries that merge social-protection and disaster-risk data; embedding contingency finance within fiscal frameworks; strengthening coordination between local government, social-protection system, and national emergency institutions; and fostering regional cooperation to exchange data, modeling tools, and early-warning systems.

INDIVIDUALS' APPROACH TO TAXATION FOR THE PROTECTION OF BIODIVERSITY IN TRANSITION ECONOMIES

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Abstract

Biodiversity loss is one of the most serious aspects of the global environmental crisis. While policies aimed at protecting biodiversity through taxation are an effective tool for preserving ecosystems, the social acceptance of such policies remains uncertain. This study examines the socioeconomic and perceptual factors influencing individuals' willingness to support tax increases for biodiversity conservation in transitioning economies. The study uses microdata from the Life in Transition Survey, which was conducted by the European Bank for Reconstruction and Development (EBRD) and the World Bank. The dependent variable is the level of "participation in increasing taxes to protect biodiversity". The explanatory variables include environmental sensitivity, belief in climate change and its human causes, institutional trust, tax ethics, financial security, and basic demographic characteristics. The results show that individuals with high environmental sensitivity who believe in human-induced climate change and view its impacts as serious are significantly more likely to support biodiversity taxes. Institutional trust and tax ethics strengthen support, and individuals with high financial security have a more positive attitude toward taxes. Support is higher in Central Asian and Caucasian countries and lower in some EU Central and Eastern European countries. The success of biodiversity-focused fiscal policies hinges not only on environmental awareness, but also on reliable governance and fair cost-sharing.

Keywords: Biodiversity Taxation, Tax Ethics, Financial Security, Climate Perception, Transition Economies.

AUTOMATING FAITHFUL FINANCE: AN AI FRAMEWORK FOR SHARIAH-COMPLIANT DISCLOSURE IN THE MIDDLE EAST

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Abstract

The Middle East's Islamic banking sector faces complex regulatory and ethical challenges, which traditional financial tools struggle to address due to the nuanced requirements of Shariah law. This article presents an AI-driven framework designed to analyze financial disclosures from Islamic banks using natural language processing (NLP), machine learning (ML), and a Shariah-compliance ontology. The system automates data extraction, classification, and risk assessment while ensuring adherence to Islamic principles. Trials in GCC countries show improved compliance monitoring, transparency, and investor trust.

However, implementation faces hurdles, including language limitations—particularly in processing regional dialects—and the evolving nature of Shariah jurisprudence, which demands frequent updates. These issues call for strong human oversight and collaboration among scholars, regulators, and developers. Future enhancements may include blockchain integration, real-time digital audits, and AI-driven compliance indices. Key challenges remain: data privacy, explainability, inconsistent disclosure standards, and limited Arabic NLP resources. Despite these barriers, the framework has transformative potential, paving the way for AI-as-a-Service tools, smart contracts, and fatwa databases—ultimately fostering a more ethical, transparent, and efficient Islamic financial system rooted in cultural and theological integrity.

Keywords: Islamic Finance, Financial Analysis, Disclosure Analysis, Artificial Intelligence

FINANCIAL INTERMEDIATION, ECONOMIC PERFORMANCE AND ENVIRONMENTAL RESPONSIBILITY: A WORLDWIDE ASSESSMENT

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Abstract

This study evaluates how the structure of financial intermediation influences the links between economic activity and environmental outcomes across almost all countries and territories, during more than six decades. The analysis focuses on whether credit to the private sector and overall financial sector lending alter the relationship between investment dynamics and carbon emissions, as well as between emissions and broader measures of economic performance. The results indicate that higher levels of credit availability significantly condition the environmental impact of capital formation, implying that financing mechanisms can either intensify or cushion the ecological consequences of investment. Moreover, financial depth is shown to reshape the association between emissions and economic output—measured through indicators such as GDP per capita and gross value added—highlighting the nuanced role of credit systems in the sustainability-growth trade-off. These findings point to financial development not merely as a catalyst for economic expansion, but as a key determinant of whether such expansion aligns with environmental responsibility. The study offers empirical guidance for policymakers and financial regulators seeking to leverage credit allocation as a tool for advancing both prosperity and sustainability.

Keywords: Financial Intermediation, Environmental Sustainability, Economic Growth Dynamics

GOVERNMENT EXPENDITURE AND INFLATION'S EFFECTS ON ECONOMIC GROWTH: A CASE STUDY OF THE WESTERN BALKANS

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Abstract

Abstract

This study examines the impact of government expenditure and inflation on economic growth over the period 2000–2020. The central objective is to explore whether rising prices and public spending slow down economic performance in both the short and long term. The research questions focus on whether inflation reduces productivity and investment incentives, and whether excessive government expenditure weakens fiscal stability. The hypothesis states that higher inflation and increased public spending have a detrimental effect on economic growth. To verify this, several econometric techniques are applied, including Ordinary Least Squares (OLS), fixed and random effects models, and the Hausman–Taylor instrumental variable method. The results indicate that both inflation and government expenditure exert a negative and statistically significant impact on economic growth. These findings emphasize the importance of maintaining fiscal responsibility, promoting efficient government spending, and ensuring price stability. The study concludes that sustainable economic growth requires balanced macroeconomic policies that control inflation while encouraging productive investment and public efficiency.

Keywords: Inflation, Government Spending, Growth, Hausman Taylor.

DOES FDI TRIGGERS GROWTH IN DEVELOPING ECONOMIES? EVIDENCE FROM WESTERN BALKAN COUNTRIES

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Abstract

Having into consideration the crucial effect that FDI has on the economic growth in developed and developing countries, as well as the evidence of mixed results in the developing economies, this paper tries to investigate the impact of Foreign Direct Investment (FDI) on the economic growth in the Western Balkan countries analyzing the time period 2001–2023. By utilizing a panel data analysis, the study explores empirical findings on whether FDI inflows contribute to the economic growth enhancement in a region which is characterized by post-transition economies and structural challenges.

Moreover, the findings from the OLS and Fixed and Random effects model suggest a significant and positive correlation between FDI and economic growth, while the nexus between FDI and unemployment is more complex and varies across these countries. The empirical results highlight the urgent need for targeted policy reforms which will be used to attract productive investment which will foster inclusive growth and sustainable employment. Finally, this paper will add a significant contribution to the existing literature by providing empirical evidence from a less-analyzed region, emphasizing the role of FDI as a driver of economic transformation in the Western Balkan countries.

Keywords: Foreign Direct Investment, T, Economic Growth, Western Balkans, Panel Data Analysis, Developing Economies.

EFFECTS OF CO₂ AND RENEWABLE ENERGY ON ECONOMIC GROWTH: EVIDENCE FROM WESTERN BALKAN COUNTRIES

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Abstract

Having into consideration the global challenge of the green transition, aimed at achieving net-zero emissions, which is expected to reshape the global economy and society significantly, we have been witnessing both economic and redistributive challenges, with a particular concern for this paper to investigate the impact of carbon emissions and renewable energy on the economic growth in the Western Balkan countries analyzing the time period 2001–2023. By utilizing a panel data analysis, the study explores empirical findings on whether CO₂ reduction positively contribute to the economic growth enhancement in a region which is characterized by post-transition economies and structural challenges.

Moreover, the findings from the OLS and Fixed and Random effects model suggest a significant and positive correlation between renewable energy and economic growth, while the nexus between CO₂ and economic growth is more complex and varies across these countries. The empirical results highlight the urgent need for targeted policy reforms which will be used to attract foster inclusive growth and sustainable development, as well as the increasing usage of renewable energies and reduction of CO₂ emissions. Finally, this paper will add a significant contribution to the existing literature by providing empirical evidence from a less-analyzed region, emphasizing the role of renewable energies as an innovative driver of economic transformation in the Western Balkan countries.

Keywords: Co₂ Emissions, Renewable Energy, Economic Growth, Western Balkans, Panel Data Analysis.

DETERMINANTS OF AGRICULTURAL CO₂ EMISSIONS: AN ECONOMETRIC ANALYSIS FOR SOUTH EAST EUROPEAN COUNTRIES

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Abstract

Today, the world is facing major challenges regarding climate change. CO₂ emissions from various sectors, including the agricultural sector, contribute significantly to these changes. Thus, the aim of this paper is to provide empirical evidence on the key economic, structural, and technological factors influencing agricultural CO₂ emissions in Southeast European (SEE) countries and to assess whether the region is on a path toward sustainable and low-carbon agricultural development. The econometric analysis consists of panel regression techniques covering the period 2000-2023. Agricultural CO₂ emission is modelled on agricultural value added, fertilizer consumption, renewable energy consumption, GDP per capita and other potential determinants. Also, a test for the Environmental Kuznets Curve (EKC) by including a squared term for agricultural value added is performed. Empirical results reveal that efficient fertilizer management and renewable energy use significantly decrease the agricultural CO₂ emissions. Regarding the Environmental Kuznets Curve (EKC) hypothesis, the findings provide partial support. The study concludes that transitioning toward sustainable agricultural practices, improving resource efficiency, and using renewable energy are critical for achieving low-carbon agricultural development.

Keywords: Agricultural Co₂ Emissions, Sustainable Development, See, Panel Regression, Environmental Kuznets Curve (Ekc).

STRATEGIES FOR COMMUNICATING THE ECONOMIC VALUE OF ECOSYSTEM SERVICES

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Abstract

This study examines the economic valuation of ecosystem services, which globally generates an estimated \$125 billion in annual benefits, underscoring the foundational role of natural capital in sustainability. Despite this immense value, the exclusion of ecosystem services from economic decision-making contributes to more than \$33 billion in annual losses from environmental degradation. The study integrates knowledge from key frameworks, including the Millennium Ecosystem Assessment (MEA), the Common International Classification of Ecosystem Services (CICES), The Economics of Ecosystems and Biodiversity (TEEB), and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). It applies them to Mexican cases such as the Payments for Environmental Services and Carbon Capture, Biodiversity, and Agroforestry programs in Chiapas and mangrove valuation in Nayarit.

An analysis of policy instruments like Payments for Environmental Services (PES) demonstrates their measurable impact: the PSA-CABSA program, which compensates roughly \$24 per hectare annually, has reduced deforestation by 40%. The study further quantifies externalities, showing that deforestation in the Mexican Amazon incurs a social cost of \$410 per hectare annually from lost carbon sequestration, of which only 12% is internalized. To bridge the communication gap between economic valuation and public understanding, the research introduces pedagogical tools like analogies and locally relevant cases like the agave-bat interdependence, where bat population decline caused a 58% reduction in agave productivity, enhancing public comprehension by up to 60%. The study concludes by proposing a quantitative educational framework that translates ecological-economic data into accessible knowledge, facilitating the internalization of natural capital's value and supporting sustainable decision-making.

Keywords: Environmental Economic Valuation, Education For Sustainability, Economic-Environmental Literacy.

“ALBANIAN EMIGRATION TO GREAT BRITAIN. IMPACT ON BILATERAL DIPLOMATIC RELATIONS”

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Abstract

Most have left their countries in search of work, often leaving situations where decent work simply does not exist or where social, economic and political conditions have greatly deteriorated. Migration patterns are very complex, with temporary or circular migration as well as permanent migration, and reflect a pattern of international labor movement. Migration remains a natural and inevitable phenomenon, but the road to regular migration for employment reasons is not easy. Abuse and exploitation, irregular movements, lack of integration, and violation of standards and stability along with human trafficking, migrant smuggling and corruption are some of its dangers. International migration or crossings across borders can only be effectively managed through international cooperation. Designing fair and sustainable employment migration policies and practices requires dialogue between governments at all levels and should include other key actors, mainly social partners and civil society organizations.

This study deals with the choices of Albanian immigrants to settle in Great Britain and the analysis of the impact on bilateral diplomatic relations. The main question is why do they migrate from Albania and why do they choose to enter the United Kingdom instead of other European countries? Socio-economic and political conditions in Albania were the main factor that pushed migrants to migrate. The United Kingdom has been chosen as a migration destination because of the country's overall outlook in terms of economic prospects and quality of life. Social networks were an essential determinant in the destination selection decision, shaping the image of the destination country.

Keywords: Emigration, Albanian, Great Britain, Diplomatic Relations, Impact.

MATHEMATICAL MODEL TO UNDERSTAND THE DYNAMICS OF MULTIPLE SCLEROSIS: A FRACTIONAL ORDER APPROACH

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Abstract

Multiple sclerosis is a chronic disease of the central nervous system that occurs due to the immune system damaging the nerve fibers. This damage to nerve fibers disturbs the communication of the brain to the body and its cellular functionality. The precise cause and diagnosis of multiple sclerosis are not fully understood to date. Here, in this paper, we propose and analyze the Multiple Sclerosis model with Mittag-Leffler Law, which is commonly used in the modeling of real-life problems. The qualitative properties, basic equilibria, and stability of the proposed Multiple Sclerosis model are examined to point out that the model is well-defined. In this analysis, the Rough-Hurwitz criteria have been performed. Also, the existence and uniqueness of the model are derived using fixed-point criteria. Finally, numerical results and biological interpretations are presented to validate our theoretical findings and examine the impact of influence parameters and fractional operators on healthy and disease conditions.

Keywords: Multiple Sclerosis, Nerve Fibers, Fractional-Order Derivative, Existence And Uniqueness, Numerical Results

FOOTBALL, ECONOMICS, AND ENVIRONMENTAL SUSTAINABILITY: THE COMMUNICATIVE POWER OF PROFESSIONAL FOOTBALL IN PORTUGAL

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Abstract

Sport is increasingly recognised as a major economic and social force, with football standing out as the most commercially influential and globally followed sport. In Portugal, football occupies a central position in national life, generating significant economic value while shaping cultural identity and social cohesion. Its contribution extends beyond stadiums, influencing employment, media, tourism, and urban development, while its symbolic and communicative power offers a platform for promoting social awareness and collective responsibility. This dual role - economic and cultural - places football in a privileged position to influence behaviours and attitudes towards pressing global challenges, including sustainability.

This paper aims to describe the economic relevance of Portuguese professional football, whose business model relies predominantly on the development and transfer of players, and to discuss how, given its strong cultural and social influence, it can serve as a vehicle for promoting sustainable behaviours and environmental awareness. The study draws on secondary data from five consecutive seasons (2016–2021), including financial and operational reports from EY and Liga Portugal, as well as institutional documents and sustainability initiatives.

Findings reveal that Portuguese clubs depend heavily on player transfers as their main revenue source, unlike major European leagues that rely on broadcasting, ticketing, and sponsorships. This dependence increases exposure to market volatility and player-related risks, highlighting the need for sustainability-oriented management. Moreover, initiatives by the Portugal League, such as National Water Day, Final Four – Sustainability on the Pitch, illustrate how football can foster ecological awareness and collective action, aligning competitiveness with social responsibility.

Keywords: Portuguese Professional Football, Sustainability Strategy, Social Responsibility.

STRATEGIC PLANNING AND SUSTAINABILITY IN ENTERPRISES: AN EVALUATION OF THE CURRENT SITUATION THROUGH SWOT ANALYSIS

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Abstract

This study evaluates the current situation of a manufacturing enterprise from a strategic planning perspective and aims to contribute to its future decision-making processes. The SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis method was applied to systematically assess the company's internal capacity and external environment. SWOT analysis not only reveals the organization's resources and limitations but also identifies external opportunities and threats, enabling a comprehensive evaluation of its strategic position. For businesses to remain competitive and achieve sustainable growth amid rapidly changing economic conditions, technological developments, and increasing market pressures, strategic planning and effective management practices are essential. In this context, SWOT analysis serves as a key instrument for reinforcing strengths, improving weaknesses, leveraging opportunities, and developing measures against potential threats.

The study focuses on a fertilizer manufacturing enterprise, evaluating its internal and external factors from a holistic perspective and proposing strategic options to enhance its competitive advantage. Findings indicate that logistical advantages, efficient quality control processes, and brand recognition constitute the company's main strengths. Conversely, slow decision-making processes, deficiencies in technological infrastructure, and limited human resource development represent key weaknesses. Increasing demand for sustainable fertilizers, government-supported agricultural projects, and green transformation policies are identified as major opportunities, while exchange rate fluctuations, rising energy costs, and contraction in the agricultural sector pose significant threats. The results provide insights valuable for both academic research and practical strategic management applications.

Keywords: Swot Analysis, Fertilizer Production, Strategic Management, Quantitative Research, Employee Perceptions

ENVIRONMENTAL EFFECTS AND CLIMATE CHANGE ON ECOTOURISM ACTIVITIES IN REMOTE AND PROTECTED AREAS OF ALBANIA

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Abstract

Introduction: Ecotourism is becoming the most accepted and suitable form of tourism for many developing countries. The environment is a key component of ecotourism, and the beauty of nature offers a variety of attractions for visitors. Ecotourism provides an option for sustainable development. The natural landscape of Albania offers various activities in protected areas, accompanied by warm hospitality, a unique way of life, opportunities to connect with locals, delicious cuisine, and hiking trails that provide scenic beauty. These are the main competitive advantages that visitors identify when exploring the protected areas. The purpose of this study is to explore how the development of ecotourism can be an effective way to preserve biodiversity in protected areas. The methodology used in this paper is based on the completed questionnaire and extensive literature from Albanian and foreign authors. In our study, we addressed the following research questions: What is the impact of climate change on ecotourism activities, especially in remote and protected areas, on the sustainable development of ecotourism? How is the local community involved in decision-making for the development of ecotourism in the protected areas? Ecotourism development represents an economic opportunity to use biodiversity while guaranteeing its sustainability. **Conclusion.** Additionally, the paper highlights the need for future studies to explore possibilities for ecotourism development. As researchers, we focus on building bridges of cooperation between institutions and stakeholders in achieving biodiversity conservation

Keywords: Biodiversity, Ecotourism, Climate Change

BRANDING AND VISUAL IDENTITY: A COMPARATIVE ANALYSIS OF ELECTRIC VEHICLE CHARGING STATION LOGOS

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Abstract

The adoption of electric vehicles (EVs) depends not only on advances in vehicle technology but also on the availability of a reliable, accessible, and user-friendly charging infrastructure. Charging stations are considered strategic touchpoints that go beyond being technical refueling spots; they convey brand trust, user experience, and a vision of sustainability. The aim of this paper is to address the visual identity dimension of branding strategies in the electric vehicle charging station sector and to present a comparative analysis of selected logos from Türkiye and around the world.

In the study, the visual identity elements of brand logos from Türkiye and abroad were examined. The criteria of analysis include color usage, typography choices, symbolic elements, and design approaches. The findings reveal that while logos in Türkiye tend to emphasize corporateness, trust, and functionality, international logos focus on positioning through messages of eco-friendly energy, technological innovation, and sustainability.

In conclusion, electric vehicle charging station logos are not merely aesthetic components; they are multi-layered communication tools that convey brand promise, enable sectoral differentiation, and influence customer loyalty. By adding a visual identity and meaning-construction perspective to the predominantly technical-infrastructure-oriented literature, this study contributes to academia while also offering sectoral brands an opportunity to rethink their visual identity strategies.

Keywords: Electric Vehicle, Charging Station, Branding, Visual Identity, Logo Analysis, Brand Positioning, Sustainability

EVALUATING INNOVATION, QUALITY OF LIFE AND SUSTAINABILITY IN OECD COUNTRIES: A VIKOR APPROACH

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Abstract

Innovation, quality of life, and sustainability are now seen as closely linked foundations of socio-economic development. For OECD countries, which have advanced economies and varied policies, understanding how these factors connect is crucial for creating sustainable growth strategies. Multi-criteria decision-making methods help evaluate these complex and sometimes conflicting indicators. This study aims to evaluate the performance of OECD member countries in terms of innovation, quality of life, and sustainability by applying the VIKOR method, a compromise-ranking approach widely used in MCDM analysis. The analysis incorporates the Global Innovation Index (GII) to represent innovation capacity, the Quality-of-Life Index (QoL) as a proxy for social well-being, and the Environmental Performance Index (EPI) to capture sustainability outcomes. After constructing a decision matrix, data normalization and weighting procedures were applied, with criteria weights determined both through equal allocation and sensitivity testing. VIKOR scores were then calculated to identify compromise solutions and to reveal the relative positions of OECD countries across the selected dimensions.

The results indicate that countries with higher innovation capacity tend also to achieve superior outcomes in sustainability and quality of life, although certain cases highlight trade-offs between environmental performance and economic innovation intensity. The findings provide empirical evidence that balanced policy frameworks are necessary to align innovation-driven growth with social well-being and ecological sustainability.

By integrating innovation, social, and environmental indicators into a unified evaluation, this study contributes to the literature on sustainable development measurement and offers actionable insights for policymakers in OECD economies.

Keywords: Innovation, Vikor, Oecd, Global Innovation Index.

CLIMATE CHANGE AND ENERGY BALANCE IN AZERBAIJAN: CHALLENGES AND PROSPECTS FOR SUSTAINABLE DEVELOPMENT

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Abstract

Climate change poses unprecedented challenges to the energy systems in the world, and Azerbaijan is no exception. As a resource-based economy, Azerbaijan's existence has traditionally relied on exporting oil and natural gas; yet, recent years witness increasing interest in diversifying its energy balance and improving environmental sustainability. This study addresses the relationship between climate change and the energy sector of Azerbaijan through examination of official statistical data on energy production, consumption, and emission. The report argues that hydrocarbons remain the dominant energy source, but marginal shifts in favor of renewables and increasing levels of efficiency are starting to have an impact. Meanwhile, fossil fuel structural dependence still offers vulnerabilities, and atmospheric emissions highlight the environmental burden of the current blend of energy. Despite all of this, there are potentialities within the scale-up of the green projects, reducing energy losses, and national climate policy development. The research argues that maintaining the balance between energy security, economic growth, and ecologic responsibilities is not only a priority but also a strategic opportunity for Azerbaijan's future sustainable development.

Keywords: Climate Change, Energy Balance, Sustainable Development, Energy Transition

EXAMINING THE EU'S NORMATIVE POWER THROUGH CLIMATE FUNDING IN CANDIDATE AND NEIGHBORING COUNTRIES

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Abstract

The European Union (EU), often described as a normative power and soft power actor, asserts influence across multiple policy areas, including climate and environmental governance. This study investigates the extent to which the EU's normative power claim is reflected in its climate-related funding practices, focusing on the previous Multiannual Financial Framework (2014–2020) and programs such as Horizon 2020, LIFE, and the Instrument for Pre-Accession Assistance (IPA).

The research examines funding allocation, program objectives, and documented implementation patterns. It explores potential gaps between the EU's normative discourse and practical outcomes in candidate and neighboring countries, emphasizing how climate-related funding may align with or diverge from the EU's stated normative ambitions.

By concentrating on the previous budget period, the study provides a focused assessment, while acknowledging that current programs under the 2021–2027 framework continue to expand both the scale and strategic orientation of climate funding. This approach highlights the dual role of EU funds as technical tools and as instruments of normative influence, offering a structured way to investigate the relationship between rhetoric and practice.

The study contributes to understanding how EU climate funding operationalizes its normative power claims and provides a structured approach to exploring the alignment between EU discourse and implementation in global climate governance.

Keywords: Climate Governance, Climate Funding, Normative Power, Rhetoric–Practice Gap, Candidate And Neighboring Countries

THE IMPACT OF SUSTAINABILITY AND CORPORATE GOVERNANCE INDICES ON THE RELATIONSHIP BETWEEN FINANCIAL INDICATORS AND TAX LIABILITIES: A PANEL DATA ANALYSIS ON THE BIST SUSTAINABILITY 25 INDEX

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Abstract

Given today's globalized economic order, the success of firms cannot be evaluated solely on the basis of financial profitability indicators. The determinants of market value and competitive advantage incorporate multidimensional criteria extending beyond economic performance, including environmental sensitivity, social responsibility, compliance with corporate governance principles, transparency, and accountability.

The Corporate Governance Index, assessing the maturity level of firms' organizational structures, has emerged as an important tool reflecting not only corporate fairness but also social responsibility, transparency, and accountability. This index aims to provide investors with reliable information not merely through short-term financial returns but also by evaluating corporate governance quality, the degree of responsibility toward stakeholders, and the long-term sustainability potential. Thus, the Corporate Governance Index functions as a strategic performance indicator transcending financial metrics, supporting sustainable market stability, investor confidence, and corporate reputation.

Firms that demonstrate high performance in line with corporate governance principles enjoy a stronger position in terms of consumer trust, which in turn contributes to increases in sales revenues. Similarly, environmentally friendly investments and practices aiming to improve energy efficiency strengthen firms' total assets and enhance asset productivity. These advantages minimize operational costs, raise firms' market value through investor confidence, stimulate sales and investments through consumer trust, and increase tax liabilities, an essential element of both corporate profitability and social responsibility.

The present study aims to examine, through panel data analysis, the impact of the corporate governance performance of firms included in the BIST Sustainability 25 Index on their accrued corporate tax liabilities and total assets.

Keywords: Sustainability Index, Corporate Governance, Corporate Tax

THE EFFECT OF WAGE REDUCTION AND PRIVATIZATION ON THE PERFORMANCE AND THE SUSTAINABILITY OF THE POSTAL SERVICE OF THE REPUBLIC OF NORTH MACEDONIA

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Abstract

The Post of North Macedonia, a state-owned enterprise, has been struggling with deep financial and operational inefficiencies over the past decade. Continuous losses, outdated logistics and technological systems, and low employee productivity have weakened its competitiveness in an increasingly digital and liberalized postal market. These persistent challenges indicate a structural inability to modernize and meet the standards of efficiency, reliability, and customer satisfaction that characterize successful postal operators across Europe.

This project explores two strategic reform scenarios aimed at revitalizing the institution. The first focuses on reducing wage expenses and optimizing human resources as a way to control operational costs and improve financial sustainability. The second considers privatization as a more comprehensive solution, potentially introducing private capital, new technology, and professional management that could accelerate modernization and digital transformation.

The analysis is grounded in data from the State Statistical Office, the Audit Office, and the IDEA Institute, which together provide a detailed overview of the Post's economic performance and governance issues. By comparing the financial and social implications of both reform paths, the study aims to determine which approach can secure long-term efficiency, transparency, and service quality. Ultimately, it questions whether privatization is a necessary precondition for transformation or if a well-structured internal reform could achieve similar results while preserving public ownership and social responsibility.

Keywords: Wage Reduction, Privatization, Public Sector Reform, Organizational Performance, Post Of North Macedonia

EVALUATION OF PUBLIC SPACES AFTER RESTORATION FROM THE PERSPECTIVE OF CLIMATE JUSTICE: THE CASE OF YAYLA PARK, KIRKLARELI, TURKIYE.

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Abstract

Public spaces are crucial components of urban life where the impacts of climate change are most visible. Extreme weather events such as heatwaves, heavy rainfall, and drought disproportionately affect vulnerable groups, including the elderly, children, and low-income residents. This study evaluates Yayla Park, located in the city center of Kırklareli, through the lens of climate justice following its recent restoration.

Although the renovation improved the park's aesthetics and accessibility, it failed to adequately address environmental and social vulnerabilities related to climate change. The limited availability of shaded areas during heatwaves, impermeable surfaces that hinder stormwater management, and unequal access to cooling opportunities highlight significant deficiencies in the design process.

Based on these findings, the study proposes strategies for climate-resilient and socially inclusive public space design. These include the use of permeable surfaces, drought-tolerant native vegetation, shaded seating areas, and rain gardens to enhance cooling and accessibility. In conclusion, Yayla Park's restoration demonstrates aesthetic progress but falls short in promoting environmental equity. Reconsidering such public spaces from a climate justice perspective is essential for building more adaptive, inclusive, and sustainable urban environments.

Keywords: Yayla Park, Restoration, Public Space, Climate Justice, Climate Change Adaptation.

CLIMATE-RESPONSIVE RESTORATION AND LANDSCAPE INTEGRATION: THE CASE OF KIRKLARELI RAILWAY STATION BUILDING IN TURKIYE

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Abstract

The accelerating impacts of climate change require new methods in the conservation of cultural heritage and its surrounding landscapes. Extreme climatic events such as heavy rain, drought, and heatwaves not only threaten the physical integrity of historic buildings but also disrupt ecological and social dynamics in adjacent open spaces.

This study analyzes the Kırklareli Railway Station Building and its surroundings within the context of climate adaptation. The evaluation focuses on both architectural and landscape dimensions: material selection, natural ventilation, and waterproofing at the building scale; and permeable pavements, native drought-resistant plants, shading trees, and rain gardens at the landscape scale.

Findings reveal that the existing restoration has improved the structure aesthetically but lacks sufficient measures for climate resilience. The research proposes integrated approaches that combine architectural conservation with green infrastructure and adaptive landscape strategies. These recommendations aim to strengthen the building's resilience to climate risks while preserving its historical value. Overall, the study suggests a replicable model for climate-responsive restoration practices across Türkiye heritage sites.

Keywords: Climate Change, Kırklareli Railway Station, Restoration Assessment, Landscape Integration.

THE DYNAMIC RELATIONSHIP BETWEEN ENERGY CONSUMPTION, ECONOMIC GROWTH, AND FOREIGN DIRECT INVESTMENTS IN KOSOVO: AN ARDL BOUND TESTING APPROACH

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Abstract

Sustainable development goals have become the central focus of countries in contemporary times. In this context, the relationship between economic growth and energy consumption plays a critical role. This study examines the impact of economic growth and foreign direct investments (FDI) on energy consumption in Kosovo over the period from Q1 2010 to Q4 2021. The study employs the Autoregressive Distributed Lag (ARDL) bound testing approach to analyze both the short- and long-term dynamic relationships among the variables under consideration. The results of the bound test strongly indicate the presence of a long-run cointegration relationship among the variables. According to the long-term estimation results, economic growth has a statistically significant and positive effect on energy consumption. However, no significant impact of foreign direct investments on energy consumption was found. The ineffectiveness of FDI can be attributed to the fact that these investments are concentrated in service sectors or areas with low energy consumption, rather than energy-intensive industries.

Keywords: Energy Consumption, Economic Growth, Foreign Direct Investments, ARDL Bound Test

THE EFFECT OF TEMPERATURE CHANGE ON LABOR PRODUCTIVITY OF AGRICULTURAL FIRMS IN THE ASIAN EMERGING MARKETS

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Abstract

Today, climate change is one of the most significant issues in terms of its economic, social, and environmental dimensions. Global warming could cost approximately 20% of the world's GDP. The impact of climate change is examined from various perspectives, particularly in the existing literature. For example, there are studies suggesting that climate change will negatively affect economic development through innovation and skill channels via labor. Therefore, studies supporting climate change at the firm level are generally sectoral, regional, or single-country studies. This is because agricultural production, and thus the agricultural sector, is highly sensitive to hot weather. However, there is insufficient research in the literature on how labor productivity is affected by increased costs. This study examines the link between climate change and labor productivity in agricultural enterprises in China, India, and Malaysia during the period 1996-2018. These three countries are in a critical position, both in terms of their important roles in global agricultural production and their sensitivity to climate change. The main objective of the study is to reveal how temperature changes reduce the labor productivity of agricultural firms through increased costs. The analysis results are based on the financial and operational data of publicly traded agricultural companies. The findings indicate that rising temperatures increase costs in agricultural businesses, thereby negatively affecting labor productivity.

Keywords: Labor Productivity, Agricultural Firms, Climate Change, Emerging Markets

DIGITAL- AND AI-DRIVEN TRANSFORMATION IN KOSOVO'S HIGHER EDUCATION: INSTITUTIONAL ADAPTATION AND LABOUR-MARKET IMPLICATIONS

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Abstract

Globally, higher education systems are undergoing a significant transformation due to the swift development of digital technologies and artificial intelligence (AI). This change is having an increasing impact on Kosovo's institutional frameworks, instructional strategies, and the way that education and the changing labor market are aligned. With an emphasis on staff competencies, digital infrastructure, and innovative curricula, this study investigates how Kosovo's universities are adjusting to the digital and AI-driven era. The study looks at how much higher education institutions use AI-based tools for learning, research, and administration using a mixed-method approach that includes policy review, institutional analysis, and expert interviews. The study also looks into how these changes may affect labor market preparedness, highlighting the discrepancy between academic performance and new demands for digital skills. The results point to both opportunities and difficulties: although digitization improves teaching's accessibility, adaptability, and creativity, it also reveals gaps in institutional capabilities and technological readiness. The study concludes by stating that in order for Kosovo's higher education system to successfully close the digital divide and support a long-term, AI-powered knowledge economy, a strategic, policy-driven framework is necessary.

Keywords: : Digital Transformation, Artificial Intelligence, Higher Education, Institutional Change, Labour-Market Alignment, Kosovo

FOOD SUPPLY SECURITY IN MENA COUNTRIES: A CLIMATE RESILIENCE PERSPECTIVE

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Abstract

Food supply security in the Middle East and North Africa (MENA) region faces significant challenges due to the combined effects of climate change, water scarcity, population growth, and geopolitical instability. The region is one of the most water-stressed areas in the world, with limited arable land and heavy dependence on food imports—factors that make its food systems highly vulnerable to climate shocks. Rising temperatures, more frequent droughts, and shifting precipitation patterns are expected to further reduce agricultural productivity and increase the volatility of food prices.

From a climate resilience perspective, strengthening food supply security in MENA requires enhancing the adaptive capacity of agricultural systems, diversifying food sources, and promoting sustainable resource management. This includes investing in climate-smart agriculture, improving water-use efficiency through technologies such as drip irrigation and wastewater reuse, and fostering regional trade cooperation to buffer against local production shortfalls. Moreover, integrating early warning systems and data-driven risk assessments can support proactive responses to climate-induced disruptions.

Building climate-resilient food systems in MENA is not only a technical challenge but also a governance and policy imperative. It demands cross-sectoral coordination among governments, private actors, and international partners to design inclusive policies that address both short-term shocks and long-term structural vulnerabilities. Enhancing resilience thus means ensuring that the region's food supply chains remain stable, equitable, and sustainable despite increasing climate pressures.

Keywords: Food Supply Security, Climate Resilience, Water Scarcity, Sustainable Agriculture, Regional Cooperation

A SPEECH ON CLIMATE RESILIENCE AND SUSTAINABILITY: A REGIONAL DEVELOPMENT PERSPECTIVE

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Bearing in mind the actual context, where finance, economy, and sustainable public policies converge, therefore, this keynote examines climate resilience as a strategic driver for regional development and long-term economic stability. In fact, climate change is reshaping investment priorities, public-sector planning, and territorial competitiveness, creating both risks and unprecedented opportunities for transformation. Contextually, this speech explores how regions can leverage sustainable financing mechanisms, clean energy transitions, and integrated territorial policies to build resilience while promoting inclusive economic growth. In this regard, if we align global climate imperatives with regional planning, it's inevitable to discuss the role of innovative governance, cross-border cooperation, and local capacity-building in strengthening adaptive systems. So, examples from European frameworks illustrate how climate-responsive policies can unlock development potential, reduce systemic vulnerabilities, and support greener, fairer, and more competitive regional economies. As a final remark, this keynote defends that resilient regions (when supported by sound financial instruments and forward-looking policy design) are much better equipped to face uncertainty and drive sustainable prosperity.

Keywords: Climate finance; Climate resilience and policies; Cross-border cooperation; Energy transition; Regional economic development.

ANALYSIS OF THE IMPLEMENTATION LEVEL OF THE TSRS 2 CLIMATE-RELATED DISCLOSURE STANDARD IN BIST SUSTAINABILITY INDEX COMPANIES IN TURKEY

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Abstract

The aim of this study is to analyze the compliance level of the reports published by companies operating in the Chemical, Pharmaceutical, Petroleum, Rubber and Plastic Products and Stone and Soil Based sectors in the Borsa Istanbul (BIST) Sustainability Index with the TSRS 2 – Climate-Related Disclosure Standard. Within the scope of the research, the 2024 sustainability and/or integrated reports of 7 companies in the Chemical, Pharmaceutical, Petroleum, Rubber and Plastic Products sectors and 6 companies in the Stone and Soil Based sector were examined using the content analysis technique, one of the qualitative research methods. The analysis process considered the four core elements of TSRS 2: governance, strategy, risk management, and metrics and targets. The company's disclosures under these headings were evaluated. Sector-specific metrics were also examined within the scope of the research.

As a result of the study, it was determined that all companies except Aksa Acrylic Kimya, Tüpraş, and Akçansa Cement prepared a TSRS-Compliant Sustainability Report in 2024; that Aksa Acrylic Kimya, Tüpraş, and Akçansa Cement prepared an Integrated Activity Report that included information related to TSRS, and that the TSRS-Compliant Sustainability reports and Integrated Activity Reports of the companies examined were either highly or fully compliant with TSRS 2. The identified deficiencies were generally insufficient scenario analysis and quantitative data, in other words, some qualitative data were not supported by quantitative data.

Keywords: Tsrs 2, Sustainability Reporting, Bist Sustainability Index, Content Analysis, Chemical Industry, Cement Industry.

THE BANKING DIMENSION OF THE GREEN TRANSITION: DIVERGENCE IN CREDIT ALLOCATION BETWEEN PUBLIC AND PRIVATE BANKS

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Abstract

Our study examines how public and private banks in Türkiye responded to the European Union's Carbon Border Adjustment Mechanism (CBAM), which began its reporting phase in October 2023. Using loan-level data from the Banking Regulation and Supervision Agency (BRSA) and firm-level employment data from the Social Security Institution (SSI) for 2017–2025, we apply a difference-in-differences (DID) model to analyze credit behavior toward carbon-intensive sectors.

We find that lending to CBAM-sector firms declined after the reporting phase, especially in cash loans. Public banks reduced direct liquidity support but maintained limited non-cash lending. The tightening effect is stronger for small and medium-sized firms, indicating greater financial vulnerability. Overall, credit conditions have become more restrictive, potentially slowing smaller firms' green investments.

We recommend introducing green credit lines and CBAM-compliance loan programs to support financing access for smaller carbon-intensive firms and promote a balanced green transition.

Keywords: Green finance, green transition, bank lending, public and private banks

A STUDY ON THE SEMIOTIC STRUCTURE OF TRADITIONAL TAFRESHI EMBROIDERY (DARVISH-DOZI)

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Abstract

Traditional embroidery and needlework in Iran's local regions are remarkably diverse in terms of patterns and techniques, featuring an abundance of visual motifs, symbolic expressions, and aesthetic richness. Among these, Tafreshi embroidery (Darvish-Dozi) represents a deeply cultural and spiritual art form that conveys the emotions, imagination, and beliefs of its creators. This study aims to examine the semiotic and symbolic structures embedded in Tafreshi embroidery patterns and their relationship to the worldview, cultural identity, and religious beliefs of the region's people.

Through a descriptive-analytical approach, this research explores how these artistic symbols reflect the dominant way of thinking and perception in the Tafresh region. Moreover, it investigates how traditional motifs in Tafreshi embroidery contribute to a broader understanding of aesthetic communication in traditional Iranian crafts. The study seeks to answer the following key questions: What is the symbolic meaning of Tafreshi embroidery motifs? How do these motifs reflect the collective mindset and values of the people in the region? Finally, how can Tafreshi embroidery inspire contemporary artists and open new horizons for innovation in traditional arts?

The findings reveal that Tafreshi embroidery embodies a specific local cultural code that acts as a visual language of identity, continuity, and creativity. It not only preserves traditional artistic heritage but also provides fertile ground for reinterpreting traditional forms within a modern artistic framework.

Keywords: Semiotics, Tafreshi Embroidery, Traditional Motifs, Decorative Sewing Arts.

IKLİM DEĞİŞİKLİĞİYLE MUCADELEDE DİJİTAL YÖNETİSİM VE YENİLİK YÖNETİMİ/DIGITAL GOVERNANCE AND INNOVATION MANAGEMENT IN FIGHTING CLIMATE CHANGE

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Abstract

Hızla derinleşen iklim krizi, kamu sektöründe yönetim anlayışında köklü bir değişimi zorunlu kılmakta olup, dijital dönüşüm ve yenilik yönetimi temel öncelikler olarak ön plana çıkmaktadır. Bu çalışma, dijital yönetim mekanizmaları ile teknolojik yenilik kapasitesi arasındaki karşılıklı ilişkiyi inceleyerek devletlerin iklim değişikliğine yönelik yanıtlarını etkileyen faktörleri analiz etmektedir. Sürdürülebilir yönetim kuramı ve işbirlikçi dijital yenilik çerçevesi kullanılarak, yapay zekâ, veri analitiği ve akıllı yönetim altyapılarının, kurumların uyum kapasitesini artırma, politika tutarlılığını güçlendirme ve çevresel hesap verebilirliği yükseltme işlevi incelenmektedir. Çin ve Avrupa Birliği örneklerinden elde edilen bulgular, dijital iklim yönetişiminin, anlık veri izleme, politika entegrasyonu ve çok aktörlü iş birliği yoluyla düşük karbonlu geçişleri hızlandırdığını göstermektedir. Bununla birlikte, veri etiği, dijital eşitsizlik ve kurumsal ataletle ilişkin zorluklar devam etmektedir. Kavramsal bir sentez yoluyla, çalışma, dijital teknolojilerin kamu yenilik kapasitesini güçlendirdiği yolları gösteren bir “yönetişim-yenilik etkileşimi modeli” sunmaktadır. Bu bulguların entegrasyonu, kamu yönetimi kuramına katkı sağlamakta ve teknoloji ile yenilik yönetimini, dirençli ve kanıta dayalı iklim yönetişiminin temel bileşenleri olarak konumlandırmaktadır.

Keywords: Dijital Yönetişim, Yenilik Yönetimi, İklim Politikası, Sürdürülebilir Kamu Yönetimi, Teknolojik Dönüşüm, Uyarlanabilir Yönetişim

ESTIMATION OF PLANETARY BOUNDARY LAYER BY RANDOM FOREST IN URBAN ATMOSPHERE

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Abstract

The planetary boundary layer (PBL) is an important parameter in air pollution modeling studies. It is assumed that, especially, gaseous pollutants are mixed between the ground-level and PBL. Therefore, estimation of PBL is quite crucial in correct modeling estimations. Many algorithms have been developed and employed so far. This study aims to estimate PBL by using meteorological data. Meteorological data were gathered by Davis Vantage Pro-2 weather station. Wind speed, temperature, humidity, and UV index were used input for the random forest model. The estimated PBL was compared with those achieved by the global data assimilation system (GDAS). The median PBL heights were 394 and 372 m for GDAS and train model, respectively. GDAS data had a higher standard deviation. The observed and predicted plot had a medium correlation. The R^2 was 0.83 for the test model itself. However, when train data is used R^2 reduced to 0.33. This preliminary study indicates that random forest is promising in PBL estimation; however, further improvements are needed in terms of the meteorological parameters used.

Keywords: Planetary boundary layer, random forest, meteorological observation, GDAS.

THE IMPACT OF INFLATION ON THE STANDARD OF LIVING IN NORTH MACEDONIA

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Abstract

After a long period reigning precariously low inflation in most of the countries in the world, the recent upsurge of inflation beginning with the outbreak of Covid-19, have continued increasing onwards, going beyond the usual expectations. Likewise, the continuing high inflation levels have raised a lot of concerns and delivered multiple effects in several indicators of the countries' economies and the well-being of societies across the world. Hence, one of the immediate effects of the high inflation was the erosion of the purchasing power of consumers and increase in the cost of living that eventually led to worsening the standard of living of the people. This phenomena and developments were present in most of the countries, developing and advanced economies, including North Macedonia.

The country experienced constant rise of inflation, especially in 2022, reaching levels that haven't been seen in the last 26 years which expectedly drastically increased the living expenses. Hereby, the main aim of our study is to examine and analyse the impact of inflation on the standard of living in North Macedonia. The study come out with findings that suggest an insignificant relationship between inflation and standard of living in North Macedonia, as a result of several factor that might have influenced these outcomes.

Keywords: Inflation, Standard Of Living, Gdp Per Capita, Income,

THE IMPACT OF DEMOGRAPHIC AND ECONOMIC INDICATORS ON THE FINANCIAL SUSTAINABILITY OF THE PENSION SYSTEM IN NORTH MACEDONIA

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Abstract

The financial sustainability of public pension systems has emerged as a critical issue for policymakers globally, particularly in countries undergoing substantial demographic and economic transitions. In the context of the Republic of North Macedonia, the Pension and Disability Insurance Fund is subject to increasing pressure due to evolving demographic structures and fluctuating economic conditions. The aging population, declining fertility rates, and ongoing emigration of the working-age population have collectively disrupted the equilibrium between contributors and beneficiaries, thereby undermining the long-term viability of the system. Concurrently, key economic indicators, such as unemployment rates, gross domestic product (GDP) growth, and inflation exert a direct influence on the fund's revenue streams and expenditure obligations. These interrelated demographic and economic challenges necessitate a comprehensive analysis to assess their impact on the financial sustainability of the pension system and to inform effective policy interventions. This study aims to analyse the movement of these indicators from 2000 to 2022 and assess their impact on the pension system's sustainability.

Keywords: Financial Sustainability, Pension System, Emigration, Fertility Rate, Gdp Growth, Unemployment.

GREEN CREDITS AND THEIR ROLE IN THE SUSTAINABLE PERFORMANCE OF PROCREDIT BANK

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Abstract

This study examines the impact of green credit on ProCredit Bank's sustainable performance in the context of North Macedonia. Drawing on secondary data from GEFF, EBRD, and institutional reports, the research tracks trends in green lending between 2020 and 2023 and analyses the behavioural patterns of both business and individual clients. Findings indicate that green credit actively supports environmentally conscious investments: legal entities predominantly adopt technologies such as photovoltaic systems and energy-efficient equipment, while individuals focus on home improvements including insulation and solar thermal systems. The evidence suggests that green credit not only advances national sustainability objectives but also strengthens the operational capacity and public profile of the financial institution. Furthermore, the study emphasizes the strategic importance of green financing in fostering long-term institutional resilience, promoting energy transition in developing economies, and aligning national banking practices with European sustainability standards. The study recommends broadening outreach initiatives, improving transparency of information, and fostering further product innovation

Keywords: Green Credit, Sustainable Finance, Procredit Bank, Energy Efficiency, North Macedonia, Geff, Ebrd

THE HEALTHCARE SYSTEM IN NORTH MACEDONIA: ANALYSIS OF STRUCTURE, CHALLENGES, SUSTAINABILITY AND THE ROLE OF PUBLIC AND PRIVATE INSTITUTIONS

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Abstract

In this paper, we have conducted a detailed analysis of the structure, functions, and distinctions between private and public institutions, as well as the challenges faced by the healthcare system in North Macedonia. Our main objective is to verify the quality of key services, citizens' perceptions of these services, and potential improvements. The study was conducted based on a combined methodology, where primary data was primarily collected from a questionnaire with 102 participants, and secondary data from state statistics, various reports, and media articles.

Based on the research we have concluded that most citizens in our country are dissatisfied with the quality of public services since the country faces a significant shortage of both specialists and the necessary tools for work. However, on the other hand, we also have the willingness of citizens and their trust in using public services if their quality improves.

Through the analysis of the University Clinic "Mother Teresa" and the private hospital "Zhan Mitrev," we can see the significant difference between the private and public sectors, considering the method of financing and the challenges faced by both parties. Overall, the results of this study contribute to the understanding of the need for a fair and high-quality healthcare system, which is essential for the well-being of the country's citizens.

Keywords: Healthcare System, Public And Private Institutions, Corruption

STRENGTHENING LEGAL FRAMEWORKS FOR SUSTAINABLE FINANCE AND ECONOMICS

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Abstract

At a time when the global economy is facing complex challenges, from climate crises to financial and social risks, the role of law and regulatory frameworks becomes essential to guarantee sustainable development. This study focuses on analyzing the legal bases that support green finance, economic policies of social justice and legal instruments for environmental protection.

First, the law serves as a safety mechanism to orient financial actors towards transparency, responsibility and investments that respect sustainability standards. Legal frameworks harmonized with international directives and practices, such as the European Union regulations on green taxonomy, provide a strong basis for channeling capital into sectors that create long-term value and positive social and environmental impact.

Second, at the national and regional levels, states face the challenge of creating an efficient legal system that guarantees the balance between economic growth and the protection of citizens' fundamental rights. Renewable energy laws, green public contracts, and environmental arbitration mechanisms are instruments that make the implementation of sustainable policies more effective.

In this context, Kosovo and the Balkans have great potential through legal reforms, especially in terms of strengthening the rule of law, fighting corruption, and ensuring legal certainty for investors.

Ultimately, the law is not just an external framework, but a transformative engine of society and the economy.

Key words: Role of Law, Environmental Law, Legal Framework of Green Finance, International Law and European integration, Legal Instruments of Sustainable Development

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THE ROLE OF BIOCHEMISTRY AND NUTRITION SCIENCE IN SHAPING SUSTAINABLE ECONOMIC POLICIES IN NORTH MACEDONIA: A REVIEW

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Abstract

The intersection of biochemistry, nutrition, and sustainable economic policy presents a critical opportunity for North Macedonia to address persistent challenges related to food security, public health, and environmental sustainability. This review synthesizes current scientific and policy literature to explore how biochemical and nutritional research can inform financial strategies that support a more resilient and health-oriented bioeconomy. Recent studies show that the prevalence of non-communicable diseases in North Macedonia, such as cardiovascular disorders and diabetes, is closely linked to poor dietary patterns and micronutrient deficiencies. Biochemical advancements—such as the use of local biofortified crops, enzymatic processing, and fermentation—can improve nutrient bioavailability and reduce dependence on imported, processed foods. In the agricultural sector, the application of green chemistry, including bio-based fertilizers and waste-to-nutrient conversion technologies, has shown promise in reducing environmental impacts while increasing productivity. Economically, integrating these technologies into national planning through subsidies, innovation grants, and carbon taxation can promote sustainable food systems and decrease healthcare expenditures associated with poor nutrition. The review highlights successful regional models and proposes a roadmap for cross-sectoral collaboration among biochemists, nutritionists, policymakers, and economists. A transition toward a circular and sustainable agri-food economy in North Macedonia will require not only technological innovation but also strategic policy design grounded in biochemical evidence and long-term economic planning.

Keywords: Economic Policies, Biochemistry, Nutrition



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