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ABSTRACT BOOK

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Web-Based Time Series Analysis Tool: The Case of Health Expenditures and Economic Growth

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Abstract

Time series analysis provides insights into how two variables move together over a long period. Unit root tests and cointegration analysis are widely used tools in fields such as finance, economics, and health. However, applying these methods typically requires specialized software and coding skills. This study introduces a web-based tool designed to make these tests more accessible to everyone.

To demonstrate how the tool works, data from Turkey between 1975 and 2023 were used. Two variables were selected: the share of health expenditures in the country's GDP and GDP per capita. The tool was used to generate graphical representations of the data. Then, unit root tests were applied to assess whether the data were stable over time. The results indicated that both series were non-stationary. Therefore, the Johansen cointegration test was conducted to check for a long-term relationship. The test results showed that there is a long-run relationship between the variables.

The findings were compared with results from popular time series software and were found to be consistent, confirming the accuracy of the tool. This tool is beneficial for users without coding knowledge and also supports experts who seek to perform fast and clear analyses. In the future, it is planned to include additional time series methods such as VAR, VECM, and Granger causality. It is believed that this web-based tool can contribute to a wide range of research across various fields.

Keywords Web-Based Application, Time Series, Cointegration, Unit Root, Economic Growth, Health Expenditures

Bibliometric Analysis of Academic Studies on Health Expendtures

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Abstract

The aim of this study is to examine the academic studies on health expenditures by bibliometric analysis method and to provide information to researchers on the subject.

In this study, 40 publications on health expenditures in various scientific databases (dergipark, google scholar) between 2010 and 2024 were analyzed bibliometrically. The publications aim to reveal the research dynamics in the field of health expenditures by examining the most cited studies, most frequently used keywords, number of authors and collaboration networks.

According to the results of the study, research on health expenditures has increased significantly in recent years and various interdisciplinary approaches have been adopted. In particular, it has been observed that the cost of chronic diseases, the impact of aging population on health expenditures and the economic evaluation of health technologies have also attracted increasing attention, and health expenditures and access to health services in developing countries have also attracted increasing attention.

Keywords: Health, Health Economics, Bibliometric Analysis, Scientific Publications

Bibliometric Analysis on The Concept of Financial Failure

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Abstract

The state of failure can be defined as the inability of businesses operating at a certain level to maintain their operations and order, in short, their inability to fulfill previous obligations. Financial failure, on the other hand, refers to the inability to meet short-term debt obligations on time or the insufficiency of cash inflows to cover such debts. This study aims to explain the conceptual framework of the terms 'failure' and 'financial failure', addressing the emergence of the term financial failure as well as its internal and external causes. Within this context, a literature review was conducted and presented through the method of bibliometric analysis. Based on the concept of financial failure in various businesses and sectors, a bibliometric analysis was carried out on 30 studies that included the term "financial failure" and were published between 2014 and 2024 — the last ten years. These articles were evaluated according to criteria such as article title, publication year, number of authors, author titles, language of the study, research method, keywords, and the order of the keywords. According to the findings, the years in which the concept of financial failure was studied more frequently, the order and frequency of its appearance as a keyword, and whether the studies were conducted collaboratively or individually were examined.

The results indicate that studies on financial failure have increased in recent years. Most of the studies were conducted collaboratively, and the term "financial failure" generally appeared among the first two keywords.

Keywords: Failure, Financial Failure, Bibliometric Analysis

Bibliometric Analysis on the Concept of Insurance and the Insurance Industry

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Abstract

Insurance is a bilateral contract made to financially protect against risks. Insurance companies are the organizations that provide this protection and manage risks. The insurance sector is an important area where risks are shared to provide financial protection and support economic development. This study discusses the conceptual definition of insurance and the insurance industry, types of insurance, the historical development of insurance, the insurance sector and its structure in Turkey, the measures that need to be taken for its development, and current developments. In this context, literature related to insurance and the insurance industry is examined using bibliometric analysis. Bibliometric analysis is the quantitative examination of academic literature. A total of 27 articles published between 2010 and 2025, containing the word "insurance" in their title, were analyzed. The articles were evaluated based on their title, publication year, number of authors, author institutions, and keywords. The purpose of this study is to comprehensively examine the research conducted in the field of insurance, evaluate the current state and development of insurance in the literature. As a result of the study, it was observed that the number of insurance–related articles has increased after 2020, with studies being conducted both individually and through joint collaborations in various fields.

Keywords: Insurance Insurance Industry, Insurance Sector, Bibliometric Analysis

Teachers' Views on the Use of Artificial Intelligence in Education

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Abstract

The main purpose of this study is to examine how teachers use artificial intelligence tools in their educational processes and to reveal their perceptions, attitudes and opinions towards these tools in depth. With the rapid development of technology, the integration of artificial intelligence tools into the field of education has also accelerated. This situation directly affects teachers' professional practices and pedagogical approaches. In this context, this study was conducted with a mixed design research method in order to address teachers' attitudes towards artificial intelligence technologies with both quantitative and qualitative dimensions. The methodological framework of the study was constructed in a structure where qualitative and quantitative data were collected and analyzed together. Three different tools were used in the data collection process: a demographic information form, a questionnaire to measure the use of artificial intelligence, and a semi-structured interview form to analyze teachers' views in depth. Quantitative data were analyzed using frequency and percentage analysis, while qualitative data were analyzed using content analysis. Fifteen teachers participated in the study and the data obtained from these participants were carefully analyzed and presented in detail under the title of findings. According to the findings, it shows that the majority of teachers are willing to use artificial intelligence tools, but they adopt a cautious approach towards these tools. Especially the ethical dimension of artificial intelligence in education was the most frequently mentioned and emphasized theme by the teachers. A significant number of participants stated that they get information from artificial intelligence before using search engines and use these tools as a consultant in the process of generating ideas. In addition, teachers stated that AI is a useful tool, especially in providing quick feedback and generating alternative ideas. However, they emphasized that it is not possible for this technology to replace the teacher in the long run and that the teacher's guidance and human touch are indispensable for the educational process. These results show that although artificial intelligence is seen as a supportive element in teaching processes, the human factor remains important.

Keywords Artificial intelligence, ethics, education, technology integration

The Importance of Defining Actors' Income Models and Its Impact on the Professional Definition of Acting

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Abstract

This paper examines the legal and economic status of the acting profession in Turkey, focusing on how actors' income models influence the professional definition of acting. The acting profession differs from traditional forms of employment due to its diverse working conditions and income structures. The absence of a well-defined framework for actors' income models creates significant uncertainties regarding professional identity and status. In Turkey, the acting profession is not directly regulated by law but is instead addressed indirectly through certain regulations and professional associations. This situation complicates the protection of actors' economic rights and results in legal gaps in areas such as taxation, social security, and contract types. This study highlights the importance of defining actors' income models within an economic and political context and categorizes these income structures into three main types. This classification is based on the structural differences between actors' professional activities and their means of generating income. The research explores how these income models are shaped within the economic-political framework and examines their impact on the professional definition of acting. Establishing a systematic framework for actors' income models is crucial for defining the profession and ensuring legal protections. Clarifying the professional status of actors will not only strengthen their economic rights but also foster greater professionalization within the industry. In this context, determining the legal and economic status of the acting profession will enhance the effectiveness of professional organizations and unions while also improving the credibility of acting education institutions.

Keywords: Acting, Income Models, Theatre, Cinema

Emotional Literacy, Self–Understanding and Cognitive Flexibility as Predictives of Psychological Resilience in Unıversity Students

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Abstract

The aim of this study is to investigate whether emotional literacy, self–compassion, and cognitive flexibility are significant predictors of psychological resilience in university students. The research data were collected in the fall semester of the 2024–2025 Academic Year. The study group consists of 377 university students, 315 of whom are female (% 83.5) and 62 of whom are male (% 16.5). The mean age of the students is 22.08; the standard deviation of their age is 5.096. The research data were collected with the Emotional Literacy Scale, Cognitive Flexibility Inventory, Psychological resilience scale-short form, and Self–Compassion Scale. Multiple linear regression analysis was used in the analysis of the data. In order to determine whether there is multiple correlation between the independent variables, the binary correlations between the variables were examined. The normal distribution assumption of the data was examined with kurtosis and skewness coefficients. Accordingly, it can be said that the data showed a normal distribution. The Durbin–Watson coefficient (d=2.013), calculated to examine whether there is autocorrelation between the variables, shows that there is no autocorrelation between the variables. In addition, whether there is a multicollinearity problem that makes regression analysis inappropriate between the independent variables was examined with the variance magnification factor (VIF: not greater than 10). The variance magnification factor (VIF) value varies between 1.64 and 2.34. These values obtained show that the analysis does not have a multicollinearity problem. According to the findings obtained in the study, it was seen that emotional literacy, self-compassion and cognitive flexibility are important predictors of psychological resilience. This finding is important in terms of being used in studies to develop psychological resilience skills of university students.

Keywords: University students, emotional literacy, self understanding, cognitive flexibility, psychological resilience

Assessment of the Transition from Traditional to Innovative Management in the Tourism Sector: The Case of Turkey

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Abstract

This study investigates: a) The development of innovative management practices inTurkey's tourism sector b) The dynamic drivers of change (opportunities and challenges focused on Kingdom's tourism)c) Enabling this transformation, what benefit can we obtain from digital innovation? Employing a mixed method approach including case analysis and performance indicators, it provides new insights into the potential benefits of data-driven decision-making, the impact of smart tourism technologies and customer-centricity centred tourists experience. The results show considerable progress in terms of operational efficiency, customer satisfaction, and long-term sustainability. But challenges like these and others remain, including resistances to change, regulatory restrictions and skills shortages. Through this, the current study enhances the IT tourism management literature by providing practitioners and policymakers with rich detail on how to innovate and maintain global competitiveness for the long term.

In conclusion, all of the results suggest that though digitization and innovation have immensely enhanced the efficiency of service delivery and responsiveness to self-improvement, these opportunities are marred by obstacles such as resistance to change, legislation challenges and lack of skilled human resources, among others. Finally, enhancing a culture of ongoing innovation and advanced technological integration is deemed essential for the future resilience and global competitiveness of Turkey's tourism sector amid an accelerating market evolution.

Keywords: Touristic management, Innovation, Digital transformation, Smart tourism, Turkey

A Study on the Boundaries of al-Rawda al-Mutahhara

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Abstract

Al-Masjid an-Nabawi is the mosque in Medina that also contains the tomb of the Prophet Muhammad. Al-Rawda is located between the pulpit and the tomb of the Prophet Muhammad. In light of the Prophet Muhammad's declaration, "The area between my house and my pulpit is a garden from among the gardens of Paradise." this space possesses great spiritual significance for Muslims. Therefore, every Muslim who makes the Hajj and Umrah desires to visit this place. Therefore, Rawda has emerged as one of the most frequented areas for worship and prayer among Muslims. However, the limited physical space of the place, the increasing visitor density and the desire for worship sometimes lead to serious crowds and disruption of the peace of worship. The appointment system known as 'Nusuk,' which has been introduced to balance the intensity of visitation, seeks to regulate the process; however, it does not guarantee access for all pilgrims and at times results in overcrowding and contention. Indeed, even in front of the Prophet's tomb—where the verse "Do not raise your voices above the voice of the Prophet!" (al-Ḥujurāt 49:2) is inscribed—there are at times scenes that challenge the boundaries of reverence and are marked by noise and disorder.

This paper analyzes the current issues related to the boundaries of al-Rawda al-Mutahhara in light of relevant narrations and offers both scholarly and practical recommendations to address the challenges faced by pilgrims.

Keywords: Islamic history, Sīra, al-Masjid an-Nabawi, Place, Shrine

The Value of Institutions: A Comparative Study of Family and Youth Data

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Abstract

Social institutions have a fundamental role in shaping values, identities and lifestyles as the continuous aspects of social order and behavior. Among these, special importance can be attributed to family and youth, these social units represent the continuity of tradition but also the possibilities of transformation. In today's societies, characterized by rapid cultural change that emerged with the impact of globalization and digitalization, young people are more exposed to value systems different from those transmitted in their family and social circles. In the analysis of this process, which brings about the negotiation, discussion and, in some cases, redefinition of the legitimacy of existing value systems, it is important to understand the perspective of different generations on social units, and therefore to analyze the processes of social change and continuity. This study is based on the findings of three different field studies conducted in 1999, 2018 and 2023, measuring the importance levels of 46 institutional expressions determined to be important for Turkey, such as morality, constitution, soldier, flag, municipality, factory, government, industry, union, company, agriculture, country, university and homeland. In the study, the change in the importance given to institutions over approximately 25 years was analyzed through family and university youth. Institutions such as family, books, education, school, university, which were given the most importance in terms of average scores in university youth, were replaced by family and education as well as homeland, country, and flag. The general evaluation of the expressions shows that the value given to institutions has turned towards collective benefit over the years within the framework of the changes experienced, and this situation is similar to the family data.

Keywords: Social Institutions, Values, Family and Youth

Cartography as a Tool for Understanding History: Exploring Jordan's Ancient Natural and Political Boundaries

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Abstract

Starting from the Ancient World, Jordan was home to the City of Jericho in 9000BCE, saw the Ain Ghazal, Hyksos, Egyptian Pharaohs, an invasion of the Sea People, Alexander the Great, and the Roman Empire. In 718CE, Jordan was ruled by the Abbasids, then the Crusaders, Ayyubids, Mamluks, and the Ottomans. After that, it was under British Colonial Rule until 1946. In the 20th and 21st centuries, Jordan played an active political role in the Middle East based on its geographical location. This unique, and vibrant, history is best captured in the maps of Jordan. These maps help break Jordan's history into four main periods: the Ancient Bible Period where maps were driven by a spiritual ideology from the West; the Early Modern Period; the Ottomans and 19th Century Maps that highlighted administration; and British Colonial Rule designing political maps. Across varying political regimes, the natural landscape of Jordan was unchanged. This research explores how the interpretation of physical landscapes on man-made maps are different depending on the cartographer. Despite cartography being framed as a science, maps are unique and changing based on the mapmaker's worldview. The analysis explores the history of the map's creation, zooming in on specific cartographers.

Keywords: Maps, Cartography, History

Of the Ottoman Presence and its Impact on the Habitus of Today's Algeria

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Abstract

The Ottoman presence in Algeria, which lasted from 1515 to 1830, is an issue in Algerian historiography. Whilst French historians look at that presence basically as colonial and counterproductive, Algerian counterparts see it as one of the foundations of the Algerian national identity. The present research seeks to investigate this issue with reference to the major publications in the field and to the remnants of the Ottoman civilization in Algeria, such as the culinary arts, architecture, tapestry, costumes, ordinary clothing, music, language, religion, politics, etc. To do so, I shall deploy an eclectic approach drawing on cultural materialist theory developed by Raymond Williams and the cultural anthropological paradigms elaborated by Pierre Bourdieu. How far the three-century long Ottoman presence has affected the habitus in terms of everyday practices in today's Algeria? To what extent these Ottoman-inspired practices support one of the historical views above? To what extent the French and Algerian histories are affected by ideology? These are some of the questions the present research work will address.

Keywords: Algeria, civilization, habitus, history, Ottoman presence

A Pareto Optimum and Auschwitz

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Abstract

The article analyses characteristics, criteria, and criticism of a Pareto optimum. The Pareto optimum is derived from Walras' theory of general equilibrium. It is a state in which nobody can be better off without somebody else being worse off. Three criteria must be met to achieve a Pareto optimum: 1. Optimal distribution of goods, 2. Optimal technical allocation of resources, and 3. Optimal quantities of output.

Pareto optimum as a core of his welfare theory is a significant contribution to economics. He contributed a lot to better understanding of conditions for, and the welfare significance of economic efficiency. However, his theory has been a subject of a multifaceted criticism. There are five arguments of criticism of the Pareto standard. 1. It applies only to perfect competition, 2. It neglects a distribution of income focusing only on economic efficiency, 3. It does not fit policies which increase a total income and overall welfare but redistribute income, 4. It has a static view, and 5. It neglects moral judgements.

The last point is most pronounced. There are weird situations which fit the Pareto standard such as a rape. The most extreme case is the example of Auschwitz. Even if Auschwitz was an open system there would not be possible a Pareto improvement. Auschwitz, therefore, represents a perfect example of a Pareto optimality.

Keywords: Pareto Optimum, Pareto Improvement, Economic Efficiency, Equity, Walras' General Equilibrium Theory, Moral Judgement

The relationship between managers' emotional intelligence on employees' job performance. The context of innovative organizational culture in the case of Medical Sciences universities

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Opole University of Technology, Poland

Abstract

Organizations have limited resources when it comes to effective managers. Successful organizations compete to recruit and retain them. Employee performance is affected by their manager's skills. The aim of this study is to examine the relationship between employee performance at Medical Sciences universities and the emotional intelligence of managers of innovative organizational cultures. A descriptive survey based on correlation is the research methodology. The statistical population consists of 110 managers and 1472 employees at private and public Universities of Medical Sciences in Tehran. The sample size is determined using the stratified random sampling approach using Morgan– Karjesi table. All the research tools were evaluated, and the reliability and validity of items were proved. The data was analyzed using the statistical methods of Spearman and Pearson correlation. The present study has concluded with 95% and 99% certainty that the job performance of University of Medical Sciences employees is related to the innovative organizational culture and emotional intelligence. Additionally, a significant relationship has been indicated between the components of innovative organizational culture, creativity, and innovation, as well as the components of emotional intelligence (intrapersonal adaptation and stress management), and employee job performance.

Keywords: Emotional intelligence, Innovative organizational culture, Self-management, Job performance

Analysing Structural Breaks in Inflation-Growth Relationship: The Case of Côte d'Ivoire

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Abstract

In a world shaken by endogenous and even exogenous economic crises. Inflation and economic growth have become global issues to be addressed by all major states. Côte d'Ivoire, as the leading economic power in West Africa, is witnessing serious questioning on the behaviour of inflation and economic growth in the streets, households, neighbourhoods of the Ivorian capital, and other cities in the country. Inflation, particularly the fluctuations in the prices of goods and services, is causing growing concern among the Ivorian population and is one of the most discussed macroeconomic indicators. Meanwhile, the country's leaders advocate for high economic growth rates. This study aims to analyse the structural breaks in the relationship between inflation and economic growth in Côte d'Ivoire between 1970 and 2023. The objective of this study is to examine the impact of structural changes on the relationship between inflation and economic growth in order to address the numerous questions posed by the population regarding the impact of this relationship.

The results obtained Allow us to better understand the tensions between the fight against inflation and the need to ensure sustainable economic growth. Furthermore, this study proposes practical recommendations for policymakers to strengthen economic stability and improve the well-being of Ivorian citizens, while taking into account the challenges posed by a globalized and interconnected economic environment. The ultimate goal is to provide insights for a more inclusive and resilient economic development in Côte d'Ivoire.

Keywords: structural break, economic growth, prices, inflation

Aspects of Forced Labor of Prisoners of War in 1940–1945 in the Sudetenland

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Abstract

The contribution summarizes key findings on the forced labor of prisoners of war in the area of Sudetenland and examines its aspects in terms of the clasification of POWs based on racial–ideological criteria, as well as their working and living conditions, including new approaches to a comprehensive study of the issue. These new approaches rely on interdisciplinary research with significant involvement of sociological disciplines such as social psychology and historical sociology, aiming for a deeper understanding of the functioning of the specifically defined space of the POW camp, including an analysis of complex relationships between prisoners of war and the civilian population, everyday interactions, and their impact on local communities. The author works with the theory that the camp functioned as an isolated community with its own rules, in which each individual occupied a precisely defined place and adopted their social role within a strictly delineated space. The contribution applies sociological approaches to the still underexplored phenomenon of prisoners of war camps during World War II.

Keywords: Prisoners of War, World War II, Sudetenland, Forced Labor

Civil Liability in Medical Malpractice: Legal Frame, Ethical Boundaries and Evolving Clinical Standards

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Abstract

The complexity and multidisciplinary nature of the medical act, together with the unpredictability of the patient's reaction to treatment, have always generated fundamental difficulties in establishing the standards necessary to trigger and successfully engage the civil liability mechanism in malpractice cases. In the context of contemporary developments, this problem is growing, especially as medical civil liability is at the confluence of law, morality and the constant progress of standards of practice.

Developments in case law and legislation reflect the attempt to balance patient protection with the realities of the medical profession, raising fundamental questions about professional negligence – medical error, due diligence and the limits of liability.

The present study aims to provide a succinct overview of the legal framework incident in the field of civil liability for medical malpractice, while also looking at the challenges manifested on the ethical dimension. These will relate to the impact of technological progress and artificial intelligence on the way in which professional negligence is assessed. Through a multidisciplinary approach, solutions will be proposed to improve liability mechanisms and adapt standards to the contemporary challenges of the medical profession.

Keywords: civil liability, medical malpractice, medical ethics, legal standards, evolving medical practices, artificial intelligence

The European Convention on Human Rights and the American Convention on Human Rights in a Comparative Mechanism System

Iacob Andra BIANCA

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Abstract

The European Convention on Human Rights (1953) and the American Convention on Human Rights(1953) are two regional convention that were born in difference times and geopolitics situation but with the same objective: human rights.

The ECHR, has the origins after the finalization of the WWII in Rome. Because the european societies wanted to live in safe without repeating the traumas suffered. Italian, Germany, French and other european countries started to creat a new typs of Constitutions were the protection on human rights to be more apreciate.

The ACHR, was adopted after a long series of struggles for the protection of human rights in Latin America. This Convention can be seen as a the final outcome of the Organization of American States which had the ability to create a regional system of protection on human rights in a military and political conflict time in that region.

Both Conventions are legal instruments that have been evaluated with the aim of protecting human rights in different historical and geographical territories.

Keywords: ECHR, ACHR, human rights, protection, Latin America, Rome

G6PD Deficiency: A Case of Hemolytic Anemia in a 5-Year-Old

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Abstract

A 5-year-old male from was admitted for management of a cutaneous-mucosal pallor suggestive of hemolytic anemia due to G6PD deficiency. The patient's family history includes a 37-year-old mother (B+) and a 37-year-old father, with third-degree consanguinity. The patient had a normal term delivery with a birth weight of 3.150kg and received appropriate vaccinations. The current illness presented one week prior with jaundice and cutaneous-mucosal pallor, prompting consultation and hospitalization. Examination revealed moderate cutaneous-mucosal pallor, normal cardiopulmonary and abdominal examination, and no neurological abnormalities. Relevant laboratory findings from the complete blood count (CBC) included a white blood cell count of 14,700/mm3, hemoglobin of 6.6 g/dL, platelet count of 326,000/mm3, and a reticulocyte count of 440,660/mm3, indicative of hemolytic anemia History of fava bean ingestion was noted. A G6PDH analysis was requested and revealed a deficiency status. A list of interdictions was given to the mother along with therapeutic education.

Keywords: G6PD Deficiency, Hemolytic Anemia, Fava Bean, Cutaneous-Mucosal Pallor

Comparaison of Three Method for Glucose-6- Phosphate Deshydrogénase Determination

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Abstract

La G6PDH est l'enzyme de la seule voie de la production de NADPH dans les érythrocytes. Le dépistage de ce déficit est assuré par des méthodes qualitatives [test de réduction de méthémoglobine (MRT), fluorescent spot test (FST)] et quantitatives (spectrophotométrie UV).Le présent travail a pour objectif principal de comparer entre trois méthodes de dépistage de déficit en G6PDH

Seize (16) prélèvements sanguins effectués sur tube hépariné ont éta analysés, dont 13/16 sont analysés par les trois méthodes et 3/16 par QT et MRT seulement. Les données ont été saisies et analysées sur un logiciel statistique SPSS version 20. Les performances des méthodes qualitatives ont été vérifiées selon les recommandations de l'AFNOR 2013.

Les résultats de l'étude montrent que 12/13 sujets sont non déficitaires et 1/13 sujet est déficitaire par les trois méthodes.

Les résultats des performances de MRT et FST montrent une sensibilité, spécificité et exactitude, valeurs prédictives positives et négatives de l'ordre de 100% chacune.

En conclusion, le MRT et le FST sont comparables à la méthode de référence, spécifiques, sensibles, exactes et pratiques mais le MRT reste la méthode accessible en matière de réactifs et matériels.

Keywords: Comparaison , G6PDH, déficit, performances, methodes

The Figure of the Scribe in the Albanian Area as Part of the Byzantine Heritage

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Abstract

The object of our study is the examination of the figure of the scribe in the philological manuscripts of Albania, in the "Fund 488", located in the AQSH.

It seems that the Albanians were far from the cultural centers and Byzantine civilization, but despite the conquests, the Adriatic Sea remained a Byzantine sea, and contacts between Puglia and Dalmatia, Greece and Constantinople were frequent.

The tradition of Christian writings in Albania begins from the beginnings of Christianity and continues until the 19th century.

The definition of the parameters to identify the so-called 'albanian' copyist is complicated.

It is understandable that this selection criterion to define the figure of the 'Albanian' copist cannot be of the political type, and even less of the geographical type, but only of the cultural type.

If language is an expression of cultural identity, in this case it cannot be accepted because the scribe, the copist, wrote in the official language, in Greek and Latin.

We are of the opinion that the activity of the 'Albanian' scribe, copyist, or the space where he was formed goes beyond the Illyrian-Albanian area.

Keywords: Scribe, copist, manuscript, Albania, Byzantine heritage

The Role Islamic Banking to increase Halal Industriy in Indonesia. Bibliometric Approach

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Abstract

Islamic Banking and Halal industry have the strong power to have good collaboration to increase the development of halal industry in Indonesia. Many sectors of industry both of financial and non financial industry show the good performance. According to the Islamic business ethic, the business must fulfil the requirement of Islamic business which refers to the halal industry. This paper uses qualitative methodology with bibliometric analysis approach. The result of this paper can give explanation regarding the role of Islamic banking to increase halal industry.

Keywords: Islamic banking, halal industry

Extraoridnary Events and Their Influence on Tourism Development in Slovakia

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Abstract

Extraordinary events significantly influence the development of various sectors of the national economy, with tourism being one of the most sensitive. This scientific paper focuses on the impacts of three key extraordinary events — the Covid-19 pandemic, the military conflict in Ukraine, and the energy crisis — on the tourism industry in the Slovak Republic.

The Covid-19 pandemic caused an unprecedented decline in tourism due to restrictions on movement, border closures, and changes in tourist behavior. The following military conflict between Ukraine and the Russian Federation, which began in 2022, brought new challenges. Slovakia, as a neighboring country, faced the arrival of a large number of Ukrainian refugees, which temporarily altered the structure of guests in accommodation facilities. The state financially compensated entrepreneurs for providing accommodation to refugees, but after these compensations ended, many businesses lost a substantial part of their clientele.

Simultaneously, the escalating energy crisis has increased operating costs in tourism, while inflation and government tax measures have further burdened businesses in the sector. This paper analyses these events; cumulative effects on tourism development in Slovakia, evaluates the changes in demand and supply, and outlines possible strategies for future recovery and stabilization of the sector.

Keywords: Tourism, Extraordinary Events, Covid-19 Pandemic, War in Ukraine, Energy Crisis, Economic Impact

Managerial and Ethical Challenges in the Digital Age

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Abstract

In the context of the rapid transformations brought about by digitalization, business organizations are facing unprecedented managerial and ethical challenges. This article explores the impact of emerging technologies – such as artificial intelligence, process automation, and advanced data analytics – on management strategies, business models, and stakeholder relationships. It examines the ethical dilemmas associated with data collection and usage, algorithmic transparency, cybersecurity, and the fairness of automated decisions. The study proposes an integrated perspective on ethical leadership in the digital age, emphasizing the importance of fostering an organizational culture based on responsibility, integrity, and adaptability. Using a qualitative methodology and business case studies, the article provides practical recommendations for managers and organizational leaders in managing the risks and opportunities of digital transformation. The conclusions highlight the need for robust ethical governance to support sustainability and competitiveness in the digital economy.

Keywords: digital management, business ethics, digital transformation, social responsibility, artificial intelligence, digital economy

Rationality and Economics from a Popperian Perspective

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Abstract

The article analyzes the concept of rationality in economics from the philosophical perspective of Karl Popper, highlighting the application of Popperian principles in the context of economic theories and economic policy. Popper rejects deterministic economic approaches, arguing that economics must be based on theories that allow for their empirical testing and adjustment according to new data. In this context, the article explores the role of rationality in economic decision-making, both at the individual and collective levels, emphasizing that economic rationality must be flexible and adaptable, taking into account the uncertainty and complexity of markets. It also discusses the importance of Popperian principles in the formulation of economic policies, which must be testable and falsifiable in order to allow for their continuous adjustment. Finally, the article examines the criticisms brought to the application of Popperian theory in economics and Popper's possible responses, reaffirming the need for an approach open to revision in the face of economic uncertainties. Therefore, the application of Popperian rationality in economics contributes to the development of more robust economic theories and the formulation of more efficient economic policies, capable of responding to the challenges of a complex and constantly changing economic environment.

Keywords: rationality, economics, principles, falsifiability, economic theories

Transposition of the ECN+ Directive in the candidate country: the case of Albania

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Abstract

Albania, as a candidate country has gradually harmonised its competition legislation in line with the EU competition acquis. The Albanian competition law, currently in force, is drafted with the assistance of *Deutsche Gesellschaft fur technische Zusammenarbeit* (GIZ) and modelled in line with Articles 101 and 102 TFEU, the main EU competition regulations and a number of Commission's notices and guidelines. On the other hand, as a responsible institution for the protection of competition, Albanian Competition Authority (ACA) has played an important role in furthering the harmonisation level by issuing directives or guidelines that transpose EU secondary competition acts or Commission soft. On June 30, 2020, the ACA adopted the Guideline on "empowering Albanian Competition law as amended for ensuring proper functioning of the internal market" which transposes the ECN + Directive into the domestic legal system.

As Albania is obliged to harmonise domestic legislation with the EU *acquis*, this article critically analyses the transposition of the ECN+ Directive in Albania. The authors: i) analyse the enforcement of EU competition rules briefly and provide the main novelties introduced by the ECN+ Directive; ii) compare how the EU Member States and Albanian Competition Authority transposed the ECN+ Directive and iii) discuss the role of Albanian Competition Authority in the digital market. The paper argues that harmonising public enforcement tools is far from being completed in Albania.

Keywords: EU competition law, public enforcement, ECN+ Directive, Albanian Competition Law

On the Analysis of the Relationship between Propositional Logic and Boolean Algebras and the Theoretical–Experimental Interpretation of Their Use in Technology

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Abstract

Boolean algebra is a branch of algebra developed based on mathematical logic and operations with binary variables. This structure, introduced by George Boole in the 19th century, enables the modeling of logical expressions by performing operations based on binary values such as 0 and 1. Boolean algebra has a wide range of applications in fields such as digital circuit design, computer science, artificial intelligence, and data analysis. Its fundamental operations include "AND", "OR", and "NOT". Boolean operations, used in the design of logic gates in digital electronic systems, can be simplified to reduce circuit costs and enhance performance. Additionally, Boolean logic plays a significant role in evaluating conditional expressions and creating decision structures in programming languages. In cybersecurity, Boolean expressions are frequently utilized in threat analysis and the development of access control mechanisms. This study examines the basic concepts, application areas, and contributions of Boolean algebra to digital technologies, emphasizing its critical role in the advancement of information technologies.

Keywords: Boolean Algebra, Digital Logic, Logic Gates, Computer Science, Cyber Security

Effects of Triticum Vulgaris Lectin on Digestive and Detoxification Enzymes of Apple Blossom Betle

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Abstract

Pesticides are a common tool in agricultural practice, deployed to mitigate losses incurred by economic pests. It is evident that the indiscriminate use of pesticides results in toxic effects on living organisms. Lectins, defined as carbohydrate-binding proteins, have been observed to bind to glycan structures within the digestive tract of insects, resulting in the induction of morphological damage. The objective of this study was to evaluate the efficacy of *Triticum vulgaris* lectin, a chitin-binding protein, on the digestive enzymes of the Apple blossom beetle, an agricultural pest.

In the present study, adult insects were subjected to different doses (0-150 mg/g) of *T. vulgaris* lectin under *in vivo* conditions. Following the conclusion of the experiment, the midguts of the insects were meticulously dissected, and the activities of various digestive and detoxification enzymes, including acid/alkaline phosphatase, were measured. Furthermore, the quantity of oxidant present in the gut samples was ascertained by means of the total oxidant level (TOS-Rell Assay) kit. The study revealed that *T. vulgaris* lectin exhibited an inhibitory effect on the activity of enzymes implicated in carbohydrate and protein digestion. In addition, a marked decrease in the activity of the acid phosphatase enzyme was observed in comparison with the control group. Moreover, the oxidant level in the high-dose lectin group exhibited a comparable tendency to that of the insecticide-treated positive control group. The findings of the study suggest that *T. vulgaris* lectin can be utilised as a bioinsecticide for the management of this pest.

Keywords: Acid phosphatase, Alkaline phosphatase, Apple blossom beetle, Digestive enzymes, *Triticum vulgaris* lectin

Effect of Damping Loss in Worn Bearings on Propeller Shaft Fatigue Life

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Abstract

Bearings used in ship propeller shaft systems are critical components that support the rotational motion of the shaft, damping vibrations and ensuring safe and efficient operation of the system. The wear of bearings over time can affect the vibration response and lifespan of the shaft system, especially by causing changes in damping and stiffness behaviour. However, in the literature, these behaviours are mostly assumed to be constant and their variations with time are neglected. In this study, the effects of time-varying dynamic properties of bearings used in ship propeller shaft systems, especially the decrease in damping behaviour, on shaft fatigue life are investigated. The shaft-bearing system is modelled using ANSYS software and the characteristic operating frequencies of the propeller, gearbox and other components are obtained from the literature. Various scenarios were created for the bearing damping and stiffness coefficients using values representing different wear levels. As a result of the harmonic analysis for each scenario, the stresses at the frequencies determined were calculated and the shaft fatigue life was estimated using Miner's damage accumulation rule. The results are compared with the classical method assuming constant bearing parameters, together with the effects of time-dependent variation in bearing properties on shaft fatigue life.

Keywords: Propeller shaft, shaft bearings, finite element analysis, damping, Miner's rule

An Energy Consumption Prediction Method Based on Verbal Artificial Intelligence Classification

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Abstract

In recent years, global energy demand has risen rapidly due to economic growth, particularly in developing countries, population growth and industrialization drive consumption. Energy is a key factor in manufacturing and reflects a country's economic and social development potential. Future investments depend on demand, costs, and environmental regulations, emphasizing the need for cost-effective solutions. Insufficient energy supply could hinder economic progress. Efficient financial allocation for energy production investments relies on accurate predictions of future energy demand. Optimizing financial allocation is crucial due to budget constraints, even in developed nations. These limitations highlight the growing importance of forecasting energy demand for effective planning. To increase prediction accuracy many different methods are used. In this study, an AI based verbal prediction method is suggested, and some results are presented.

Keywords: Energy Production, Energy Consumption Prediction, AI methods

Synthesis and Characterization of a Novel Polyazomethine–Supported Palladium Nanocatalyst for the Efficient Degradation of Industrial Pollutants in Wastewater

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Abstract

Non–biodegradable nitroaromatic compounds are among the most hazardous pollutants to the ecological environment and human health, and they are abundantly present in industrial and agricultural wastewater. Exposure to these compounds can cause damage to the kidneys, liver, blood, skin, and central nervous systems of both humans and animals. Among the various proposed techniques for their removal, catalytic reduction has recently attracted significant attention from researchers due to its high efficiency, rapid reaction rates, cost–effectiveness, operational simplicity, safety, and environmental friendliness. Toxic nitroarenes can be rapidly and efficiently converted into harmless and industrially valuable aniline derivatives via catalytic reduction.

In this study, a novel polyazomethine was synthesized and employed as a support material for palladium (Pd) nanoparticles. The fabricated materials were characterized using UV-Vis, FTIR, TGA, XRD, FE-SEM, and EDS techniques. Harmful aromatic nitrocompounds were completely reduced to industrially useful aniline derivatives in the presence of the nanocatalyst, using a low catalyst loading and a very short reaction time, with $NaBH_4$ in water, under ambient conditions and without the use of toxic solvents. Furthermore, recyclability tests demonstrated that the highly efficient nanocatalyst could be easily recovered and reused for six consecutive cycles without any significant loss in catalytic activity.

Keywords: Catalytic reduction, nitroaromatic compounds, Pd nanoparticles, industrial pollutants

Synthesis of a Biopolymer Microspheres –Supported Palladium Nanocatalyst for the Removal of Certain Harmful Environmental Pollutants from Wastewater

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Abstract

Nitroarenes are known as one of the most hazardous pollutants released into the environment from dye, pharmaceutical, agrochemical, and explosive manufacturing facilities. Even minimal exposure to these harmful chemicals in water can cause various problems in living organisms. Therefore, the degradation of these pollutants into harmless products and their removal from the environment has become a vital concern for all living beings. Hence, the aim of this study is to develop an effective, rapid, reusable, and easily recoverable heterogeneous nanocatalyst supported on carboxymethyl cellulose microspheres for the removal of various hazardous nitroarenes from water through catalytic reduction. Initially, sodium carboxymethyl cellulose microspheres were prepared as the support material. Subsequently, Pd NPs were immobilized onto the support. The structures of the support microspheres and the Pd NPs were characterized using UV–Vis, FTIR, TGA, XRD, FE–SEM, and EDS techniques. The catalytic activity of the synthesized Pd nanocatalyst was tested for the reduction of various harmful nitroarenes into useful aniline derivatives in aqueous media. Furthermore, the reusability and recoverability of the synthesized Pd nanocatalyst were evaluated, and it was found that the catalyst retained its activity with no significant loss in performance even after seven consecutive reaction cycles

Keywords: Catalytic reduction, nitroarenes, Pd nanocatalyst, pollutant

On ⊕-g-Supplemented Lattices

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Abstract

In this work, every lattice is a complete modular lattice. An element b of a lattice L is called a complement of a in L if $a \wedge b = 0$ and $a \vee b = 1$, this case we denote $1 = a \oplus b$ (a and b also are called direct summands of L). Let L be a lattice and $k \in L$. If $t = 0$ for every $t \in L$ with $k \wedge t = 0$, then k is called an essential element of L and denoted by $k \trianglelefteq L$. Let L be a lattice and $a \in L$. If $x = 1$ for every $x \trianglelefteq L$ such that $a \vee x = 1$, then a is called a g-small (or g-superfluous) element of L and denoted by $a \ll_g L$. The meet of all essential maximal ($\neq 1$) elements of L is called the g-radical of L and denoted by $r_g(L)$. If L have no essential maximal ($\neq 1$) elements, then we call $r_g(L) = 1$. Let L be a lattice and $a, b \in L$. a is said to be a g-supplement of b in L if $1 = b \vee a$ and $b \wedge a \ll_g a/0$. A lattice L is called a g-supplemented lattice if every element of L has a g-supplement in L. L is called ⊕-g-supplemented if every element of L has a g-supplement that is a direct summand in L.

Keywords: Lattice, g-Radical, g-Small Element, Supplemented Lattice

Strongly ⊕-g-Supplemented Lattices

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Abstract

In this work, every lattice is a complete modular lattice with the smallest element 0 and the greatest element 1. An element b of a lattice L is called a complement of a in L if $a \wedge b = 0$ and $a \vee b = 1$, this case we denote $1 = a \oplus b$ (a and b also are called direct summands of L). Let L be a lattice and $a, b \in L$. If $a \vee b = 1$ and $a \wedge b \ll_g b/0$, then b is called a g-supplement of a in L. A lattice L is said to be g-supplemented if every element of L has a g-supplement in L. L is said to be ⊕-g-supplemented if every element of L has a g-supplement that is a direct summand in L. Let L be a g-supplemented lattice. If every g-supplement element of L is a direct summand of L, then L is called a strongly ⊕-g-supplemented lattice. In this work, some properties of strongly ⊕-g-supplemented lattices are investigated. It is clear that every strongly ⊕-g-supplemented lattice is ⊕-g-supplemented.

Keywords: Lattice, g-Small Element, g-Supplemented Lattice, ⊕-Supplemented Lattice

The Effect of Organic Salts NaCH₃COO, Zn(CH₃COO)₂, and C₆H₅Na₃O₇ on the Phase Diagram of the Peg–Dextran–Water BIPHASIC System

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Abstract

The present study is dedicated to the investigation, development, and analysis of aqueous two-phase polymer systems with properties tailored for specific applications. In this context, the effects of certain organic salts (NaCH$_3$COO, Zn(CH$_3$COO)$_2$, and C$_6$H$_5$Na$_3$O) on the properties of the PEG–dextran–water biphasic system and on the parameters characterizing these properties were examined. The research findings indicate that the addition of these salts shifts the binodal curve closer to the origin of coordinates, expands the area of the heterogeneous region, and increases the immiscibility between PEG and dextran. This behavior suggests that the investigated salts exhibit a structure-breaking effect on water.

Keywords: Aqueous two-phase system, PEG, dextran, salts, binodal curve

Surface Cleaning System for Solar Panels

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Abstract

The increase in energy demand worldwide and the environmental impacts of fossil fuels have accelerated the shift towards renewable energy sources. Among these sources, solar energy stands out due to its sustainability and high accessibility. The performance of photovoltaic (PV) systems, which are widely used to utilise solar energy, is adversely affected by external factors such as dust and dirt accumulated on the panel surface. Such contamination leads to significant reductions in the energy production efficiency of solar panels, and the widely used manual cleaning methods cannot provide an effective and sustainable solution to this problem.

This study focuses on the design and implementation process of an autonomous solar panel cleaning robot developed as a solution to this problem. Thanks to the integration of mechanical and electronic subcomponents, the developed system can perform periodic cleaning without the need for human intervention. The robot performs functions such as determining cleaning routes, avoiding obstacles and efficient management of water usage with an Arduino-based control system and Bluetooth-supported remote monitoring. Material selection, software integration and energy efficiency criteria were taken into consideration in the development of the prototype. As a result, the system automates cleaning processes to maintain the efficiency of solar panels under different environmental conditions and offers a low-cost, scalable and environmentally application.

Keywords: Solar Panel, Robot, Panel Cleaning

On r–Small Elements in Lattices

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Abstract

In this work, all lattices are complete modular lattices. Let L be a lattice. We denote the smallest element of L by 0 and the greatest element of L by 1. The meet of all maximal ($\neq 1$) elements of L is called the radical of L and denoted by $r(L)$. If L have no maximal ($\neq 1$) elements, then we call $r(L)=1$. Let L be a lattice and $t \in L$. If $k=0$ for every $k \in L$ with $t \wedge k = 0$, then t is called an essential element of L and denoted by $t \trianglelefteq L$. The meet of all essential maximal ($\neq 1$) elements of L is called the g–radical of L and denoted by $r_g(L)$. If L have no essential maximal ($\neq 1$) elements, then we call $r_g(L)=1$. Here $r(L) \leq r_g(L)$. Let L be a lattice and $a \in L$. If $x=1$ for every $x \in L$ such that $a \vee x = 1$, then a is called a small (or superfluous) element of L and denoted by $a \ll L$. If $a \ll L$, then $a \leq r(L) \leq r_g(L)$. Let L be a lattice and $a \in L$. If $a \ll r(L)/0$, then a is called an r–small (or r–superfluous) element of L and denoted by $a \ll_r L$. If $a \ll_r L$, then $a \ll r_g(L)/0$.

Keywords: Essential Element, Superfluous Element, g–Radical, Supplemented Lattice

r–Supplemented Lattices

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Abstract

In this work, every lattice is a complete modular lattice. Let L be a lattice and $a \in L$. If $x=1$ for every $x \in L$ such that $a \vee x = 1$, then a is called a small (or superfluous) element of L and denoted by $a \ll L$. The meet of all maximal ($\neq 1$) elements of L is called the radical of L and denoted by $r(L)$. If L have no maximal ($\neq 1$) elements, then we call $r(L)=1$. If $a \ll L$ for $a \in L$, then $a \leq r(L)$. Let L be a lattice and $a,b \in L$. a is said to be a supplement of b in L if a is minimal for $1=b \vee a$. a is a supplement of b in a lattice L if and only if $1=b \vee a$ and $b \wedge a \ll a/0$. A lattice L is called a supplemented lattice if every element of L has a supplement in L. Let L be a lattice, $a \in L$ and $a \leq r(L)$. If $a \ll r(L)/0$, then a is called an r-small or (r-superfluous) element of L and denoted by $a \ll_r L$. Let L be a lattice and $a,b \in L$. If $a \vee b = 1$ and $a \wedge b \ll_r b/0$, then b is called an r-supplement of a in L. If every element of L has an r-supplement in L, then L is called an r-supplemented lattice.

Keywords: Lattice, Radical, r–Small Element, Supplemented Lattice

Extraction from pomegranate peel (lat. Punica granatum): The effect of different extraction techniques and solvents on extraction yield

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Abstract

In this study, polyphenolic compounds from pomegranate peel (Punica granatum) were extracted using different extraction methods. Three techniques were applied for polyphenol extraction: Soxhlet extraction, ultrasound-assisted extraction, and maceration. These methods varied in the time required for extraction and the yield of dry extract. For Soxhlet and ultrasound-assisted extraction, two solvents were used: methanol and ethanol. While maceration is simple and cost-effective, it was found to be the least efficient method for extraction. The removal of ethanol and methanol from the extracts was successfully achieved through evaporation, ensuring the purity of the extracts.

The results indicated that Soxhlet extraction with methanol provided the highest yield of polyphenolic compounds from pomegranate peel, with only a small difference compared to using an ethanol solution. Ultrasound-assisted extraction also yielded significant results, but the difference in yield was more pronounced depending on the solvent used. The goal of this study was to determine and present the efficiency of each extraction method. Further research will focus on assessing the antioxidant capacity of the extracted polyphenolic compounds.

Keyword: Extraction, polyphenolic compounds, Punica granatum, Soxhlet extraction, ultrasound-assisted extraction, maceration

Comparative Analysis of Soxhlet and Ultrasound Extraction of Bioactive Components from Fig Leaves (lat. *Ficus carica*): Impact of the Method on Extraction Yield and Latex Preservation

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Abstract

This research investigates the efficiency of two methods for extracting bioactive compounds from fig leaves (Ficus carica) using different solvents. Dried fig leaves were used as extraction material. The focus is on Soxhlet extraction and Ultrasound-assisted extraction (UAE) methods. Also, two different solvents, methanol and ethanol, were used for extractions. Given that the enzyme ficin is one of the significant bioactive compounds in fig leaf latex, the aim was to explore and determine which method and solvent gives a higher extraction yield and better preservation of thermolabile components such as this enzyme. The results shows that Soxhlet extraction provides a higher total extract yield and requires a longer extraction time. In contrast to that, ultrasound-assisted extraction (UAE) yields a higher-quality extract in a shorter extraction time. However, due to the high temperatures required for Soxhlet extraction, denaturation of ficin occurs, which leads to the formation of a dry extract without the presence of this enzyme. Ultrasound-assisted extraction (UAE) method does not require high temperatures, which enables the preservation of ficin and the formation of a mucilaginous extract due to the presence of enzymes. Due to the temperature sensitivity of bioactive compounds, the choice of extraction method significantly affects the stability and quality of the final extract.

Keywords: Extraction, Ficus carica, Soxhlet extraction, Ultrasound-assisted extraction, ficin, extracion yield

Stability or Instability of a Static Meniscus Appearing in Ribbon single Crystal Growth from Melt using E.F.G. method

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Abstract

This study presents necessary conditions for existence and sufficient conditions for stability or instability of a static meniscus (liquid bridge) appearing in the ribbon single crystal growth from the melt, of predetermined sizes, by using the edge-defined-film- fed (EFG) growth method. The cases when the contact angle α_c and the growth angle α_g verify the inequality $0 < \alpha_c < \frac{\pi}{2} - \alpha_g$ or $\frac{\pi}{2} > \alpha_c > \frac{\pi}{2} - \alpha_g$ are treated separately. Experimentally, only static meniscus (liquid bridges) which verifies the necessary condition of existence and the sufficient conditions of stability can be created; static meniscus (liquid bridges) which does not verify both of these conditions, exist only in theory because in reality they collapses. The results of this study is significant for thin ribbon single crystal growth from melt, with prior given macroscopic dimensions, using prior given specific equipment. That is because the obtained inequalities represent limits for what can and cannot be achieved experimentally.

Keywords: static stability, meniscus, ribbon growth, edge-defined-film-fed-growth.

Analysis of Magnetic Remanence Directions and Geodynamic Implications in Northeastern Algeria

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Abstract

This research undertakes a comprehensive examination of the orientations of magnetic magnetization, predicated on the computation of the magnetic moment, declination, and magnetic inclination in North-East Algeria, utilizing aeromagnetic data from aero-Service (1975). Through the implementation of the methodology delineated by Phillips et al. (2005) within the Matlab environment, we derived estimations concerning the magnetization of magnetic sources and corroborated this methodology with synthetic models.

The findings illuminate three principal trends:

In the western region, the stable submeridian magnetization signifies a predominance of induced magnetization. To the north, a south-southeast (SO-NE) orientation, correlated with shallow anomalies, posits the possibility of either a clockwise rotation of the tectonic blocks attributable to African-Eurasian transpression or a persistent magnetization inherited from the Mesozoic era. In the central region, a northwest-southeast (NO-SE) deviation of the magnetic field intimates an east-west (E-O) sinistral sliding or a profound remanent magnetization associated with the African paleofield.

These findings underscore the assertion that the rotation and sliding of the tectonic blocks serve to structure the magnetic field, thereby illuminating the influence of post-collision processes on the geodynamic evolution of North-East Algeria.

Keywords: Aimantation magnétique, moment magnétique, déclinaison, inclinaison, aéromagnétic-data, tectonique, rotation des blocs, coulissage, aimantation rémanente, post-collision, Nord-Est de l'Algérie.

Comparative Analysis of Selected Facial Emotion Recognition Methods as potential tool for Emotional Disorders Automated Assessment in terms of Remote Work application

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Abstract

In recent years, the growing prevalence of mental health issues and emotional disorders—partly associated with remote work and social isolation—has led to increased interest in Facial Emotion Recognition (FER) methods as tools for the early detection of affective disturbances. Assessing the effectiveness of these methods may support the development of solutions aimed at identifying reduced psychological well-being among employees, allowing for timely intervention and professional support. This publication provides a review of the most frequently used FER techniques based on visible-spectrum imaging systems. The selected methods were implemented and empirically compared using the publicly available FER-2013 dataset. The analysis emphasizes key performance parameters and metrological aspects, with particular attention to their potential applications in psychological, medical, and research settings. Laboratory tests allowed for the identification of practical strengths and limitations of each method, offering a basis for considering their integration into mental health assessment tools and suggesting directions for future research.

Keywords: affective processing, machine vision, emotion recognition, image processing

CGProNet: A Continual Graph-based Approach for Few-shot Classification of Skin Diseases

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Abstract

In the context of few-shot learning for skin disease classification, Prototypical Networks have proven effective in creating a feature space for categorizing previously unseen diseases using deep neural networks. However, challenges such as imprecise prototype estimation and limited long-term knowledge retention hinder their ability to generalize to novel or rare diseases. To address these limitations, we propose CGProNet (Continual Graph-based Prototypical Networks), an innovative framework aimed at enhancing the classification of rare skin diseases in few-shot learning scenarios. CGProNet augments the prototypical network by incorporating support samples and modeling their interrelationships through graph-based techniques. A continual learning approach is employed to enable knowledge transfer across tasks, boosting classification accuracy. The feature extraction process is initiated with Convolutional Neural Networks, followed by graph-based methods to capture the dependencies among support samples. These enriched features are preserved through Gated Recurrent Units (GRUs), facilitating the retention of knowledge for continuous learning. By integrating task-specific knowledge with relational dependencies, CGProNet generates more precise class prototypes, particularly for rare and challenging diseases. Experimental results demonstrate the superiority of CGProNet, achieving state-of-the-art performance on the ISIC 2018, Derm7pt, and SD-198 datasets, with accuracy rates of 80.5%, 86.03%, and 92.51%, respectively, in 5-shot classification tasks.

Keywords: Few-shot learning, image classification, graph neural network, improved features

FIGNN: Feature-Improved Graph Neural Network for Robust few-shot Medical Image Classification

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Abstract

Accurate classification of skin diseases is crucial for effective dermatological diagnosis, but the scarcity of annotated data, especially for rare conditions, presents a significant hurdle. While few-shot learning (FSL) methods offer potential for reducing reliance on large labeled datasets, their performance is often limited due to the challenges posed by small sample sizes. To overcome these obstacles, we introduce the Feature-Improved Graph Neural Network (FIGNN) framework, designed to enhance few-shot medical image classification, particularly for skin diseases. FIGNN integrates an advanced Asymmetric Convolutional Network (ACNet) to extract high-quality feature maps from skin lesion images. These feature maps are used to build a graph where nodes represent feature vectors, and edges indicate sample similarities. The core of FIGNN comprises multiple aggregation blocks within a Graph Neural Network (GNN) architecture, which progressively refines node and edge features. Each block aggregates information from neighboring nodes, weighted by edge features, to capture complex contextual relationships. The Efficient Channel Attention (ECA) mechanism further improves edge feature updates by focusing on relevant feature channels. Through this iterative refinement, FIGNN achieves robust performance in few-shot classification tasks, demonstrating state-of-the-art results with 84.90% accuracy on Derm7pt and 95.19% on SD-198 in 2-way 5-shot scenarios.

Keywords: Few-shot learning, image classification, graph neural network, improved features

Use of GIS and remote sensing for forest fire management: Case study of the Gouraya Daira in Algeria

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Abstract

Forest fires constitute a formidable risk to ecosystems and human populations in Algeria, with particular emphasis on the Gouraya region. The application of Geographic Information Systems and remote sensing technologies facilitates an enhanced comprehension of fire dynamics, the identification of the most susceptible areas, and the optimization of management strategies. This investigation relies on a comprehensive spatial analysis that amalgamates climatic, topographic, and environmental data to more effectively predict the propagation of fires. An evaluation of the existing circumstances discloses deficiencies in preventative infrastructures and resource allocation for intervention, thereby necessitating more efficacious planning. The incorporation of geospatial technologies fosters improved resource distribution, ongoing surveillance, and heightened responsiveness in the occurrence of fires. The findings substantiate that the advocated methodology would mitigate the ecological and human ramifications of forest fires by refining the management practices and decision-making processes of local authorities.

Keywords: Forest Fires, Geographic Information Systems (GIS), remote sensing, Gouraya region, Algeria

Environmental Impact of Contaminant Diffusion and Synergistic Effects on XLPE Insulation Cables

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Abstract

In recent years, the use of underground high-voltage (HV) cables for power transmission has significantly increased. Cross-linked polyethylene (XLPE) insulation systems are preferred for the highest transmission voltages due to their exceptional performance, which is largely dependent on cleanliness. However, the presence of impurities in the insulation material leads to premature aging and poses a major concern for power utilities. A three-dimensional (3D) and two-dimensional (2D) model of spheroidal contaminants on cable layers has been developed using Finite Element Method (FEM)- based software. The impact of pulse voltage on the geometry of contaminants, considering different sizes and locations, has been investigated. This study focuses on the presence of contaminants in the insulation and shield regions, though research on specific contaminants like silicon, selenium, phosphorus, and sulfur remains limited. The electrical stress enhancement and current density caused by these contaminants has been evaluated through a comparative study, identifying key factors that contribute to the stochastic degradation of insulation. The results demonstrate the severity of local electric stress under the influence of various contaminants in the cable, and this advanced method has been successfully applied to monitor actual XLPE contaminated insulation.

Keywords: XLPE, contaminants, degradation, electric field amplification, current density

Hydro–Climatic and Vegetation Dynamics Spatial–Temporal Some Changes in the Great Lakes Depression Region of Mongolia

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Abstract

Great Lakes Depression Region Basin is among the most sensitive regions to vegetation change due to climate change. This study estimated spatial–temporal changes and relationships in hydro–climate and vegetation dynamics in the basin. Studying the spatial–temporal variation between vegetation dynamics and hydro–climate in this basin is essential for assessing climate change and sustainability. In this study, the average annual air temperature, total annual precipitation, river discharge variability, vegetation cover, and changes in vegetation types in the land cover of selected stations in the basin were studied using hydro–meteorological analysis, satellite analysis, land cover determination, and statistical analysis. During the study period, the mean annual air temperature increased at all stations (Z = +1.16). The amount of precipitation decreased (Z=-0.79), especially from 2000 to 2014, and its statistical significance decreased. During the study period, average river discharge significantly decreased (Z = –3.51). Due to these combined factors, the lake's water level also decreased (Z = –2.03). Changes in air temperature and precipitation in the current year determine vegetation cover. Because of the large amount of precipitation in the summer months from 2000 to 2010 and 2020, the growth of vegetation cover during that period was relatively good.

Keywords: Central Asia, arid regions, semi–arid region, vegetation cover, water, climate change

Enhanced Prediction of Stepped Spillway Energy Dissipation Using Machine Learning and Feature Selection Techniques

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Abstract

Stepped spillways are vital hydraulic structures for flood control, requiring accurate prediction of energy dissipation ($\Delta E/E_0$) for optimal design. Traditional methods often face limitations in capturing complex flow dynamics. This study investigates the application of various soft computing techniques: Multivariate Adaptive Regression Splines (MARS), Artificial Neural Networks (ANN), Support Vector Regression (SVR), Decision Tree (DT), Gaussian Process Regression (GPR), and Ensemble Trees (En–T), for predicting energy dissipation on stepped spillways. Utilizing a published experimental dataset, we employed MARS for feature selection to identify the most influential hydraulic parameters. Two sets of models were developed: M1 using all initial features, and M2 using MARS–selected features (Froude number Fr_1 and drop number $DN=q^2/gH_w^3$). Performance was evaluated using R^2, RMSE, MAE, and MAPE. Results indicated that MARS, GPR, and particularly ANN models achieved superior accuracy and generalization. Feature selection via MARS (M2 models) yielded comparable or slightly improved performance over models using all features (M1 models), demonstrating the potential for more efficient and interpretable models. This research highlights the effectiveness of soft computing, especially ANN and MARS, combined with feature selection, for enhancing the design and optimization of stepped spillways.

Keywords: Stepped spillway; Energy dissipation predicton; Selection feature; MARS; ML

Pervaporation separation of Water-Ethanol mixtures using blend membranes of poly (ethylene glycol) and Sodium Alginate

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Abstract

The blend membranes of Sodium Alginate (NaAlg) and Poly Ethylene Glycol (PEG) prepared by using costing method and crosslinkined with glutaraldehyde in water-acetone mixture were used in pervaporation separation of water+ethanol mixtures at 30^0C for feed mixture containing 10-15 mass% of water sorption studies were carried out in pure liquids and binary mixtures of different compositions to evaluate polymer-liquid interactions and also to study the stability of membrane in fluid environment. The results are analyzed with required to the pervaporation performances of this blend membrane and compared with plain NaAlg membrane for dehydrating isopropanol at room temperature in different feed ratios. The membrane performance was studied by calculating flux and selectivity. Highest selectivity and lowest flux were observed for 10 mass % of water in the feed mixture. Flux increased with an increasing amount of water in the feed, but selectivity decreased. The pure polymers and the blend membranes have been characterized by Differential Scanning Calorimetry (DSC) and Fourier Transform Infrared techniques. The thickness of membranes was between 35 and 40 microns. Circular disc-shaped samples were cut from the thin sheet membranes to perform gravimetric sorption experiments in water + Ethanol mixtures at room temperature.

Keywords: Pervaporation separation, blend membranes, feed mixture, Isopropyl alcohol etc.

Assessment of the Fishing Vessels and Marine Envıronment Protection in Albanian Coastal Areas

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Abstract

The fishing sector in Albania is vital to both the economy and local communities along the country's coastal regions. However, the intensification of fishing activities has raised concerns about the health of marine ecosystems and the sustainability of marine resources. This study aims to assess the role of fishing vessels in the Albanian coastal areas and evaluate the effectiveness of current measures for marine environment protection. Focusing on issues such as overfishing, habitat destruction, pollution from fishing vessels, and non–compliance with environmental regulations, the study investigates the practices of local fishermen and the capacity of authorities to enforce laws. Using a combination of field surveys, stakeholder interviews, and policy reviews, the research identifies critical challenges faced by Albania in balancing economic interests with environmental sustainability. The study also explores potential solutions, such as the implementation of sustainable fishing techniques, stricter enforcement of regulations, and the promotion of eco–friendly fishing vessel technologies. Ultimately, this research aims to contribute to the development of integrated management strategies that promote both the preservation of marine biodiversity and the continued viability of the fishing industry in Albania's coastal regions.

Keywords: Fishing vessels, marine environment protection, Albanian coastal areas, sustainability, pollution, environmental regulations

The Galileo Satellite Navigation System: Structure and Its Role in Satellite Navigation, and Challenges in Precise Positioning

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Abstract

Galileo is the European Union (EU) and the European Space Agency (ESA) Global Positioning System, developed to provide precise positioning, navigation, and timing services under civilian control across the globe. The positioning and navigation algorithms are functionally equivalent to that of the Global Positioning System (GPS) theory and principles. This contribution is aimed to investigate the structure, advantages, and challenges of the Galileo system in positioning applications. Furthermore, Galileo's system design, signal reliability, and operational performance are analysed using ESA documentation and comparative data with GPS. An in-depth comprehension of Galileo's potential and influence in the evolving environment of global navigation technologies is also provided. It is discussed that Galileo significantly improves different types of global navigation however, it requires further developing infrastructure and coordinating policies to attain its full potential.

Keywords: Galileo, GPS, Positioning, Navigation, ESA

Effects of hot air- and freeze-drying on the colour and carotenoid content of powders obtained from different rosehip waste

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Abstract

Introduction: Rosehip fruits come in various shapes and hues, ranging from yellow-orange to dark red and occasionally even black, depending on the distribution of pigments like carotenoids, flavonoids, or anthocyanins (Bhave et al., 2017). Carotenoids are the principal pigments responsible for the colour of rosehips (Alp et al., 2016).

Aims: This study aimed to determine the effects of hot air- and freeze-drying on the colour and carotenoid content of powders obtained from waste from rosehip puree preparation by boiling (traditional processing) and cold pressing, respectively.

Materials and Methods: The current study was designed to determine the colour attributes of rosehip fruits (the raw material used to make rosehip puree), paste, juice, waste (resulting from fruits processing by boiling and cold pressing), and powders (obtained by hot air- and freeze-drying of waste). L*, a*, and b* values were measured using an NH300 portable colorimeter (3NH, Shenzhen, China), while those of h*, C*, and ΔE* attributes were calculated. To determine the polar and nonpolar carotenoid content, ethanolic and ethereal (with petroleum ether) extracts were prepared for all rosehip samples, which were subsequently read to a UV-VIS spectrophotometer at 450 nm.

Results: The total colour difference (ΔE*) between waste from fruits processing by boiling and cold pressing also between resulting juice and paste was large. Hot air drying determined a large ΔE* between powders obtained from the boiled and raw waste. Freeze-drying caused an intensification of colour in the powder obtained from boiled waste but a reduction of colour intensity (C*) in the powder from raw waste. These results corroborate those regarding the content of polar carotenoids.

Conclusion: Fruits processing by boiling affected the carotenoid content of the resulting waste to a greater extent than cold pressing, as did hot air drying the waste compared to lyophilization in terms of carotenoids in the corresponding powders.

Keywords: Colour, carotenoids, drying, rosehip powders, waste

Vulnerability of primary sector and adaptation strategy facing impacts of climate crisis at regional level. Connections and synergies with the EU policy and the 17 SDG's of UN: The case of Greece"

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Abstract

Addressing the impacts of climate change and mitigation of GHG, arise as a commitment from agreements that Greece has signed in the context of its participation in the EU and in international organizations, while the 2030 Agenda and 17 UN goals (SDGs) form the basis for sustainable development and are incorporated as National Sustainable Development Goals (NSDGs). Many studies and reports in the international literature have investigated the impacts of climate change, which can be distinguished into environmental, economic and social. These impacts create vulnerability in natural and anthropogenic systems putting to the test their resilience capacity.

In Greece, the primary sector is a critical pillar of the national economy and, in particular, the agri–food sector, contributing significantly to GDP and employment. Thus, the need for sustainable agricultural practices to improve efficiency and resilience against climate change is even more eminent. Discussion for vulnerability and adaptation to climate change involves two levels of planning: the national level, where the National Climate Change Adaptation Strategy (NCCAS) is in force and the regional level, where the Regional Climate Change Adaptation Plans (RCAPs) are called upon to design and implement all necessary actions towards this target by determining the immediate adaptation priorities, analyzing in depth the necessary sectoral policies and feasibility of actions at the regional level.

This research aims to highlight the vulnerability of the primary sector to climate change, at regional level, the adaptation policies implemented and their synergy with the NSDGs, the EU legislative framework through case studies from EU countries.

Keywords: primary sector, climate change, adaptation policies

Green Synthesis of Zinc Oxide Nanoparticles Using Camellia Sinensis (Green Tea), Its Antimicrobial Activity and Heavy Metal Detection Application Using Electrochemical Biosensor

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Abstract

Research and studies on the green synthesis of nanoparticles and their use in nanotechnology have gradually increased in recent years. This work explains zinc oxide nanoparticles (ZnO-NPs) synthesis, characterization, and antibacterial activity and discusses the synthesized nanoparticles' application in electrochemical biosensors to detect heavy metals in water. Scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FT-IR), and UV-visible spectroscopy (UV-Vis) were used to characterize the ZnO-NPs using *Camellia sinensis* (green tea leaf) extract. An antimicrobial inhibition activity assay and a minimum inhibitory concentration (MIC) assay were conducted. The electrochemical biosensor was used to detect mercury in water samples using cyclic voltammetry(CV) and differential pulse voltammetry(DPV) techniques. A peak of green synthesized ZnO-NPs with maximum absorbance at 353 nm was visible in the UV-Vis, and the SEM display of the ZnO-NPs and plant extract surface morphology suggested the successful synthesis of the nanoparticles. The FT-IR assay suggested that various functional groups are present, indicating the synthesized nanoparticles' inorganic or organic properties. The synthesized nanoparticles inhibited the gram-positive *Bacillus subtilis* and the gram-negative *Escherichia coli* bacteria after 24 and 48 hours. DPV and CV demonstrated an increased peak current of the mercury detected in the water sample, suggesting that the synthesized nanoparticles increased the modified electrode's surface area.

Keywords: *Camellia Sinensis*, Zinc Oxide Nanoparticles; Voltammetric techniques; Heavy Metals; Electrochemical biosensor; Antimicrobial assay

Importance of Beef Grading in Emerging Markets like Pakistan

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Abstract

Agriculture encompassing crop production and animal raising, has a substantial impact on emerging-market economies and fosters economic growth in Pakistan. Livestock, notably dairy, meat, and poultry, contribute significantly to Pakistan's GDP. In Pakistan, cultural, economic, and religious considerations all have an impact on meat consumption. The increasing demand for meat, fueled by urbanization, economic expansion, and changing lifestyles, emphasizes the importance of competent meat grading systems. Meat grading is the process of assigning values to carcasses based on market-desired qualities, which influences pricing and quality assurance. Beef grading methods differ across the world, although they are primarily based on yield and marbling. Grading systems maintain consistency, quality, and consumer satisfaction by assessing meat attributes such as marbling, colour, and texture. These systems are also helpful to determine meat softness, juiciness, and flavour, which aligns with customer preferences. In Pakistan, the lack of beef grading has an impact on its nutritional content and market value. Ungraded beef causes inconsistencies in quality, making it difficult for buyers to make informed choices. In contrast, established beef grading systems across the world give consistent quality information by categorizing beef, based on characteristics such as marbling and fat distribution. Effective grading systems improve quality control, market value, and consumer satisfaction.

Keywords: Beef Quality, Grading, Quality Grading, Yield Grading

The Role and Impact of Information and Communication Technology (ICT) in Higher Education

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Abstract

The digital transformation of higher education is one of the most significant shifts in global academic systems in recent decades. At the core of this transformation lies Information and Communication Technology (ICT), which has redefined how knowledge is created, disseminated, and consumed. This paper critically examines the role of ICT in higher education, exploring its impact on pedagogy, institutional governance, learner outcomes, research, and global academic engagement. The study also identifies key challenges such as infrastructural limitations, faculty readiness, policy inconsistencies, and the socio-economic digital divide. It concludes with recommendations for sustainable integration and potential future directions, emphasizing the need for a student-centric, inclusive, and innovation-driven higher education ecosystem. The paper draws upon both global and Indian contexts, recognizing the diverse challenges and opportunities ICT presents in a digitally evolving world.

Keywords: ICT, Higher Education, Digital Transformation, Pedagogy, Learning Outcomes, Virtual Classrooms, Online Assessment, Digital Divide, Policy, Blended Learning, Future Skills

Dermatoglyphic Study of Autistic Children and Their Parents Compared with Non-Autistic Children and Their Parents

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Abstract

Dermatoglyphics of palms, fingers, soles and toes had revealed associations with various genetic conditions. This study examined dermatoglyphics in children diagnosed with Autism Spectrum Disorder (ASD) and their parents compared to

Non-Autistic children(NAC) and their parents to explore dermatoglyphics as a non-invasive screening tool.

Fingerprints of 36 Autistic Children(AC), (32 males, 4 females), 37 parents of autistic children (10 fathers, 27 mothers), 46 control children(CC) (26 males, 20 females), and 45 parents of control children (9 fathers, 36 mothers).

Fingerprints were acquired with a Dermalog LF10 scanner, Hamburg, Germany. Automated Fingerprint Identification System and STATA software were used for analysis. Statistical significance at P<0.05.

AC have statistically significant arch pattern compared NAC in the left hand. Mothers of autistic children(MAC) exhibit significant radial loops on the right hand than mothers of control children(MCC). AC have significant Absolute Finger Ridge Count and Total Finger Ridge Count on the right hand compared to CC. AC exhibited significant bifurcations and double bifurcations than CC. MAC have significant ridge endings, bifurcations, and double bifurcations compared to MCC. Fathers of autistic children showed significant double bifurcations and short ridges.

These findings suggest linkages to ASD and may provide a non-invasive screening tool for ASD.

Keywords: Autism, Dermatoglyphics, Familial Characteristics

Investigation of the Possible Role of CYP1A1 Gene M1(T>C) and M2(A>G) Polymorphisms in Bladder Cancer

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Abstract

Introduction: Bladder malignancy is the most common malignant tumor of the urogenital system, ranking second in its field and tenth among the most common cancers worldwide. Among the various genes involved in carcinogenesis, the cytochrome P450 (CYP) gene family has attracted significant attention due to its crucial role in the metabolism of numerous endogenous and exogenous compounds, including environmental carcinogens. Studies have shown a significant association between CYP450 genetic variations and various types of cancer such as lung, breast, colorectal, and oral cancers. This study investigates the possible role of CYP1A1 gene m1 (T>C) and m2 (A>G) polymorphisms in bladder malignancy.

Materials and Methods: The study included 54 individuals diagnosed with bladder cancer who had no systemic diseases. DNA was isolated from blood samples collected in EDTA tubes from the participants. Polymorphism analysis of the CYP1A1 gene for m1 (T>C) and m2 (A>G) was performed using Real-Time PCR (LC480, Roche).

Results: According to the research findings, no significant difference was observed between the patient group and the control group regarding the AA, GG, and AG genotypes of the CYP1A1 (rs1048943) polymorphism (p=0.193), as well as the TT and TC genotypes of the CYP1A1 (rs4646903) polymorphism (p=0.108).

Discussion: Given the limited number of studies in the literature on this topic, we believe that our findings will contribute to the literature and shed light on future research.

Keywords: Gene Polymorphisms, CYP1A1, Cytochrome CYP450, Bladder Cancer

Relationship of Physiological Curvatures of the Spine with Demographic Characteristics, Balance, Postural Habit and Postural Awareness

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Abstract

Aim: This preliminary study aims to determine the relationship between physiologic curvatures of the spine and demographic characteristics, balance, postural habits and postural awareness.

Method: Forty-five female university students aged between 18-27 years were included in the study.. In the sagittal alignment assessment, kyphosis and lordosis angles were measured with a Bubble inclinometer. Balance parameters were evaluated statically and dynamically with Corebalance device. The Postural Habit and Awareness Scale was used to determine postural behaviors. Pearson correlation analysis was used to determine the relationships between these parameters.

Result: There was no significant correlation between physiological curvatures of the spine and balance parameters and postural behaviors. However, a moderate positive correlation was found between kyphosis and lordosis angles (r:0.314,p:0.035). In addition, a moderate significant relationship was found between the body mass index of the participants and their postural awareness (r:0.322,p:0.031), static (r:0.435,p:0.003) and dynamic balance parameters (r:-0.386,p:0.009).

Conclusion: In the results of this preliminary study, no significant correlation was found between physiological curvatures of the spine and balance parameters and postural behaviors in young female university students. There is a need for further studies with a large sample group in which the parameters affecting the physiologic curvatures of the spine will be examined more extensively.

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Influence of Mannitol Concentration and Production Method on the Particle Characterization of Lyophilized Liposome Formulations

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Abstract

Lyophilisation is the removal of water from frozen products under reduced pressure and this process is used for drying products that are not heat stable and would be degraded by heat drying like liposomes (1). Although lyophilisation is often preferred for stable storage of liposomes, it is known that stress-induced agglomeration during the freezing and drying stages of the lyophilisation process (2). Cryoprotectants is recommended to protect formulations against stresses during lyophilisation. Mannitol is widely used as cryoprotectant in lyophilized preparations in the concentration range of 2-20% in lyophilised products (3). In this study, liposome formulations with the same lipid content were produced by ethanol injection, film-hydration-sonication and film-hydration-extruder methods and the changes in the quality properties of liposomes before and after lyophilisation with the addition of 2%-10%-20% mannitol were investigated. The significance of the difference between particle characteristics of liposomes was analysed by ANOVA test. While there was no significant difference between the particle properties of liposome formulations produced by different production methods after lyophilisation ($p>0.05$), and we found a significant difference in the quality properties of liposomes as the mannitol content increased ($p<0.05$). The results indicate that optimisation of the mannitol ratio is necessary for liposomes to remain stable during lyophilisation.

Keywords: Cryoprotectans, Mannitol, Liposomes, Lyofiization

Intranasal Sumatriptan Delivery Via Thermosensitive Gel

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Abstract

Migraine is one of the diseases that reduce the quality of life and limit activities of daily living. It is quite common in society and affects more than one billion people in the world [1-4]. One of the most used drugs in the treatment of migraine today is sumatriptan (SUM). SUM is indicated for the acute treatment of migraine attacks with or without aura. Oral use of SUM offers a low cost and easy to use alternative. However, the high incidence of nausea and vomiting in migraine patients limits the use of oral medication.

In order to overcome this obstacle, we developed SUM-thermosensitive gel formulation containing chitosan (Ch) by ionic gelation method. Developed thermosensitive gel formulation containing chitosan microparticles produced and were characterized.

For characterization, the particle size and distribution (PDI), zeta potential value, viscosity and in vitro release of SUM was measured. The average particle size of SUM-Ch-Gel nanoparticles was found as 1426 nm (±222) with a PDI value of 0.275 (±0.139), and the zeta potential value was +26.2 (±2.9) mV as shown in. The change in viscosity with increasing temperature was examined and, in vitro release study showed that SUM-Ch-Gel has controlled release when compared to that of SUM solution. We demonstrated that it is possible to achieve a longer pain relief profile with increased penetration, mucoadhesion, and controlled release with this formulation. In conclusion, SUM-thermosensitive gel was successfully produced, and it is a step towards further studies that it can be used successfully in the treatment of migraine.

Keywords: Chitosan, Drug Delivery System, Migraine, Sumatriptan, Thermosensitive Gel

Computer Tomography Imaging of Urinary Tract Dıseases in Veterinary Medicine

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Abstract

In veterinary medicine, the kidneys, ureters, urinary bladder and urethra can be evaluated with computed tomography (CT). CT is widely preferred in the diagnosis of urinary system diseases because its high resolution allows detailed examination of anatomical structures, especially the ureters. In CT evaluation of the urinary system, the use of intravenous contrast agents allows visualization of parenchymal structures and vascular anatomy and facilitates detailed detection of pathologies. Abnormal shape, size, density and contrast enhancement of urinary tract organs are visualized by CT. Diseases include renal failure and its effects on other organs, pyelonephritis, hydronephrosis, urolithiasis and mineralized areas, ureterolithiasis, ureteral distension, ectopic ureter and neoplasms. Transitional cell carcinoma (TCC) of the urinary bladder can be imaged with CT to determine tumor size and assess response to treatment. In this presentation, the importance of CT evaluation of urinary system diseases in terms of clinical diagnosis was discussed. As a result, it was determined that computed tomography has a high sensitivity in determining the clinical symptoms and specific lesions of the patient in terms of accurate diagnosis and optimal management of urinary system diseases in veterinary medicine. In this direction, it has been shown that the wider use of computed tomography in the diagnosis and treatment processes of urinary system diseases in veterinary clinical practice will make significant contributions to early diagnosis and treatment.

Keywords: Computed Tomography, Urinary Tract, Veterinary Medicine

Nasotreachal Intubation

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Abstract

Intubation is the process of inserting a tube called an endotracheal tube (ET) through the mouth or nose and then into the airway (trachea). Endotracheal intubation is performed in patients with airway obstruction, cardiac arrest, trauma or injury to the neck, abdomen, or chest affecting the airway, loss of consciousness or decreased level of consciousness, during general anesthesia, respiratory failure or apnea, and in patients at risk of aspiration.

The intubation procedure can be performed via either the oral or nasal route.

Endotracheal Intubation via the Oral Route:This is intubation through the mouth. Due to its quicker application, it is especially preferred over nasotracheal intubation in emergency situations.

Nasotracheal Intubation:This is intubation through the nasal passage. The nasotracheal intubation process is similar to endotracheal intubation, but the tube is passed through the nose and then advanced into the trachea.

Nasotracheal intubation is preferred in cases where orotracheal intubation cannot be performed due to intraoral space-occupying lesions, structural abnormalities, or trismus; in cervical instability or degenerative cervical diseases; in head and neck surgeries (intraoral and oropharyngeal surgeries such as segmental mandibulectomy, mandibular osteotomy, mandibular reconstructive surgery, etc.); in tonsillectomies to provide the surgeon with a better working area and in intensive care unit patients requiring long-term ventilation, as an alternative to tracheostomy.

Keywords: Intubation, Nasotracheal Intubation

A New Organ in Humans: The Mesentery

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Abstract

The mesentery is a structure that emerges during the embryonic development of abdominal digestive organs and maintains their structural integrity in adulthood. Its significance has re-emerged in light of recent advances in colorectal surgery. Although classical anatomy recognized multiple mesenteric structures attached to the posterior midline, recent studies have demonstrated that the mesentery forms a continuous tissue beginning distal to the duodenojejunal flexure. This finding clarifies the central connection of the intestines and the organization of the peritoneal structures.

A new anatomical model proposes that the digestive organs are connected to a single, continuous mesentery. Based on these findings, the mesentery has been proposed to be reclassified as an independent organ. It has been determined that abdominal organs develop either on or within this structure. Furthermore, researchers have shown that abdominopelvic organs are organized into two distinct anatomical regions: mesenteric and non-mesenteric. The continuity established during embryogenesis persists into adulthood.

The newly developed anatomical model explains the spatial positioning of the organs, their vascular relationships, and the distinction between the mesentery and the peritoneum. Increasing scientific attention has revealed that the mesentery possesses numerous vital and specialized functions that vary according to time and anatomical location.

Keywords: Mesentery, Anatomy, Abdomen, Organs

Nursing Approaches in Diabetic Foot Wounds

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Abstract

Diabetes mellitus develops when the pancreas is unable to secrete sufficient amounts of insulin or when the body is unable to use the available insulin effectively. This impairment leads to an increase in blood glucose levels (hyperglycaemia) and can cause serious damage to many organs and systems, especially the blood vessels and nervous system. Diabetes is a chronic health problem with high morbidity and mortality rates, which is encountered more and more frequently both in Turkey and worldwide. Diabetic foot; It usually occurs as a result of nerve injuries caused by peripheral neuropathy and circulatory disorders due to atherosclerosis in the lower extremity vessels. This condition, which often begins after minor trauma, is characterised by ulcer formation, infection development and deep tissue damage. Classification of diabetic foot infections is extremely important in terms of assessing the severity of the ulcer, determining the risk factors and establishing an effective treatment plan. The main classification systems used for this purpose include Meggitt-Wagner, University of Texas, DIAFORA, PEDIS, WIfI and SINBAD classifications. Self-care of the individual has an important place in the successful control of diabetes. However, many individuals have difficulty in implementing lifestyle changes and this may negatively affect both physical and mental well-being. In this context, interventions applied by nurses and health professionals in the process of disease management are among the main goals.

Keywords: diabetic foot ulcer, diabetic wound management, nursing approach