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# 2nd INTERNATIONAL SCIENTIFIC RESEARCH CONGRESS

**February 22-23, 2025**
**Istanbul**

# ABSTRACT BOOK

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# Social and Humanities

# Small Nations and Great Empires: How Central Europe Maintains its Identity

**Kristýna ZÁKOSTELNOVÁ**
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**Jan BOLEHOVSKÝ**
PhD Student, University of Hradec Králové, Czech Republic

**Abstract**

The small nations of Central Europe, such as Czechs, Slovaks, Hungarians and Poles, have historically faced constant pressure from powerful empires – Habsburg, German and Soviet. This research explores the strategies these nations trying to preserve their identity and autonomy within the dominance of larger political and cultural structures. The focus is placed on the Czech context, including Palacký's vision of Austria as a necessary protector against Germanization and Hungarianization, the First Republic's efforts to position itself as an "island of democracy" between two totalitarian regimes and the Velvet Revolution's emphasis on moral principles and nonviolent resistance.

The presentation demonstrates how small nations did not only survive, but actively shaped larger entities through their adaptability, cultural renewal and political Innovation. It also connects this Central European narrative to similar processes providing a broader perspective on the role of small nations in a globalized world. The outcome is a fresh lens for understanding the historical and contemporary dynamics between smaller and larger actors on the political stage.

**Keywords:** Central Europe, Nations, Identity, History, Historiography

# Bilingualism and Ethnic Greek Minority in Albania

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"Eqrem Cabej" University of Gjirokastra, Albania

**Abstract**

Bilingualism plays a crucial role in the lives of the ethnic Greek minorities in south Albania, shaping their social, cultural and educational experiences. This study examines the impact of bilingualism on the Greek minority's identity, language practices and integration in the Albanian society. İn areas like Dropull and Vurg, bilingualism between the Greeks and the Albanians serves not only as a means of communication but also as a tool for preserving the cultural heritage. This linguistic duality enables members of the ethnic Greek community to keep connections to their roots while adjusting to the socio-political and linguistic reality of Albania. Nevertheless, the bilingual environment presents challenges, particularly regarding the need for integration into the dominant culture. Furthermore, bilingualism's role in education, the ,media and inter-generational transmission of the Greek language and culture is crucial for understanding the complex dynamics of ethnic minority survival in an evolving national context. İn conclusion, bilingualism in southern Albania functions both as a bridge to the globalised world and as a safeguard for minority identity.

**Keywords:** Bilingualism, Greek Minority, Cultural Preservation, Identity, Globalization.

# Teaching English through Questioning: Socratic Strategies for Teaching English to VYEL and YEL

**Assoc. Prof. Dr. Joana TAÇI**
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**Lect. Zamira BOBOLI**
"Eqrem Çabej' University, Gjirokaster, Albania

**Abstract**

Socrates, the classical Greek philosopher, who revolutionized education through his method of questioning, aiming at stimulating critical thinking and illuminate ideas is still having an influential effect on educational environments worldwide. Known as the **Socratic Method**, this teaching strategy focused on inquiry, encouraging learners to explore, analyze, and articulate their thoughts. In the today classroom, Socratic questioning remains a powerful tool, particularly in the context of teaching English as a second language (ESL). By fostering a dynamic environment where students actively engage with language and ideas, this approach can help overcome common challenges in ESL learning, such as a lack of confidence, limited vocabulary, and the passive absorption of language rules. This paper explores how Socratic questioning can be adapted to ESL teaching, highlighting its potential to transform the language-learning process into an interactive, reflective, and empowering experience.

**Keywords:** Socratic Questioning, Creative Thinking, Critical Thinking, ESL, VYEL, YEL

# Comparative System on the Arbitration Procedure in the American and European Systems

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**Abstract**

Since the dawn of human societies, people have frequently encountered disputes in various fields. As societies developed and became more complex, different regulations were established to resolve disputes between parties.

Initially, disputes were primarily resolved through courts of law. However, alternative dispute resolution (ADR) methods such as mediation, conciliation, and arbitration have gained significant prominence, often with the mutual agreement of the parties involved. These ADR procedures are conducted by specialists with experience in the relevant field.

The arbitration procedure is regulated at international, regional, and national levels. Its use has increased significantly with societal modernization and development. Modern society recognizes the need for judicial reform to alleviate the burden on national courts, which often face case backlogs.

Arbitration is a prominent alternative to traditional litigation in American and European societies, with a stronger emphasis on its use in American society. While typically used in commercial law, arbitration can also be employed to resolve labor disputes in certain cases, such as those involving work rules or job classifications

**Keywords:** European Law, American Law, Evolution, Labor Law, Arbitration

# The Relationship between European Union and Ukraine during the Russian-Ukraine Conflict

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**Abstract**

Ukraine is an European country with cultural diversity, rich in true contrasts of society that has the most diverse professions such as: actors, circus performers, scientists, doctors, but which since 2022 has been facing an armed conflict with its neighboring state: the Russian Federation and at the same time due to this situation, Ukrainians were forced to leave their homeland to live their lives in a harmonious environment, thus causing the biggest crisis of refugees from Europe after the Second World War.

Ukrainian refugees, mostly vulnerable groups: women, children and elderly people have had to leave their homes and the future they have carved out for themselves to start a new uncertain life in a foreign society with a new language and culture, all these things happened overnight. In general, these refugees tried to seek refuge in states where they already had family members and friends, and for those who were alone in this big world, the only solution was to flee the conflict in the first country that received them and offered them protection, such as neighboring states, Romania, Hungary, Poland and Slovakia.

**Keywords:** Armed Conflict, Refugees, Protection, Neighboring States, European Union, Temporary Protection

# The Noun Phrase in Dosoftei's Writings. The Modifier

**Mihai-Andrei LAZĂR**
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**Abstract**

In the present paper, we aim to analyze the noun phrase in Dosoftei's writings, focusing on the syntactic function of modifier. The paper will be divided into two parts, the first one dealing with the theoretical framework and the second one being dedicated to the analysis of the investigative corpus. After providing a definition of the noun phrase and a description of the kind of adjuncts it might select, we will provide an overview of modification and modifiers. Then, we will observe the peculiarities of the modifier as a syntactic function introduced in the *Basic Grammar of the Romanian Language*. As far as the investigative corpus is concerned, we will first discuss the class of substitution of the modifier. We will then proceed to the description of complex noun phrases, in which two or more modifiers co-occur. We will first discuss the internal structure of each noun phrase and then we will provide examples to support our demonstration. We will take into account premodifiers as well as postmodifiers. All in all, the examination of the investigative corpus will reflect the complex possibilities of structuring the noun phrase, illustrating the diversity of syntactic constructions in Old Romanian, as far as the modifier is concerned.

**Keywords:** Noun Phrase, Modification, Modifier, Premodifier, Postmodifier

# Validity and Transformation of the Autonomous-Relational Self Model on Today's Young People in Türkiye

**Lect. Ezgi LİF**
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**Abstract**

This research aims to examine the validity and transformation of Çiğdem Kağıtçıbaşı's Autonomous-Relational Self Model among today's young people. Developing technologies, digitalization, globalization and rapid change in social dynamics affect individuals' self-constructs in various ways. In this mixed method study, quantitative and qualitative data collection techniques covering both autonomy and relationality dimensions will be applied together. The research will examine how the balance between autonomy and relationality changes with digital behaviors and social conditions. The findings are expected to provide new implications regarding individual and social changes. The research will shed light on the important dimensions of the modern transformation in young people's self-construal.

**Keywords:** Autonomous-relational Self Model, Çiğdem Kağıtçıbaşı, Individualism and Collectivism, Digital Transformation, Social Media Effect, Psychosocial Adaptation, Generation Differences.

# The Use of Blood in Hittie Rituals

**Hilal KUTLU ALANCI**
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**Abstract**

When we examine the sources on the use of blood (*ešhar*) in Hittite rituals and its purpose, we come across a wide and diverse range of text types. While blood stands out as the carrier of life and power in Hatti culture, the texts supporting this theme generally cover ritual groups dating from the thirteenth to the fourteenth centuries. Blood plays an important role in Hittite rituals as a means of blessing, purification and atonement. These rituals were exported from Kizzuwatna, and this region contains strong Hurrian and Luwian cultural influences. Therefore, Hittite religious practices were shaped not only by local beliefs but also by environmental and cultural interactions. The use of blood in the Hittites includes three main situations: First, blood is seen to be identified with life and associated with the life energy of humans and animals. Second, blood is used as a purifying agent; in this context, blood is believed to have a symbiotic effect in order to cleanse from impurities and evil spirits. Third, objects and buildings are blessed by the application of blood; This practice aims to protect both physical spaces and spiritual beings. As a result, the Hittites viewed blood not only as a liquid but also as a means of spiritual power, protection and purification. This reflects the central role of blood in various rituals and the deep meaning it carried for Hittite society. Through these rituals, blood becomes both an element connected to life itself and a protective mechanism against evil.

**Keywords:** Hittite, Blood, Ritual, Purification, Consecration, Life-Giving

# Tradition and Modernity in the Novel Agonia

**Dr. Mirela SARAÇI**
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**Abstract**

The writer Odise Kote recently presented his novel Agonia, a work that deeply examines the tension between tradition and modernity in Albanian society. In this novel, the author portrays

a complex reality where traditional values, such as family and honor, hold a central place in the collective consciousness, but are simultaneously under pressure from the changes brought about by modernity. The family, as a key institution of the traditional social structure, is seen not only as a source of stability and support but also as a space where the tensions of social transition are most strongly felt. Confronted with the fast-paced norms and rhythms of an ever-changing world, family relationships are often challenged by moral dilemas, generational divides, and the loss of shared references. Tradition appears as a powerful force that sustains a deep connection to the past, evoking a sense of nostalgia for the values and practices that have guided society for generations. Within this framework, norms such as respect for the family, loyalty to societal rules and the preservation of personal dignity are the main pillars supporting a predetermined and stabilized order. The changes brought by modernity are often unexpected and

disruptive for individuals and society, creating confusion and insecurity for those tied to the norms of the past. In this clash, individuals face significant challenges in adapting themselves and finding a balance between past values and the demands of the present.

**Keywords:** Tension, Tradition, Norms, Nostalgia, Modernity, Isecurity

# Social and Moral Crises of a Society in Transition

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**Abstract**

The novel "*Agonia*"by the writer Odise Kote, through its complex structure, unique style, and a sharp critical lens, offers opportunities for multiple interpretations. The richness of descriptions and the emotional power of the dialogues create a rhythm that conveys the energy of a period filled with uncertainty and challenges. Through language, as an esthetic element that stands out for its richness, the author expresses not only the pain and confusion of social crises, but also the internal struggle of the individual to preserve his identity and moral integrity. It reflects the tension between the old and the new, a tension that deeply permeates both the structure of society and the individual. The stylistic diversity of the novel, where the reflective tone, subtle sarcasm, and critical analysis intertwine, gives the work a layered meaning that goes beyond merely narrating events.

My focus on "Social and Moral Crises in a Society in Transition" is a painful reflection on the loss of hope and the collapse of values during an important historical period. A period marked by radical transformations and unpredictable events that have a profound impact on all aspects of an individual's life and society as a whole. In this context, the individual is not only psychologically shaken by uncertainty and sudden changes, but also faces challenges that require quick and creative adaptation. In conditions were traditional structures and values are questioned, the individual may find himself facing an existential void, caught up in the need to reanalyze the fundamental principles upon which personal identity, social relations, and his role within this reality are based.

**Keywords:** Structure, Society, Period, Transition, Traditional

# Imam Al-Ghazali's Communal Consumptive Ethics And Its Signidicance to a Contemporary and Sustainable Society

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**Abstract**

Islam contains a general code of conduct without any disagreement. Islam, as both a religion and way of life, also encompasses all religious issues and affairs affecting human's life is also a fact unchallenged by those of consummate minds. One important aspect of all facets of Islamic discussions, that upon which all arguments sprout, and agreements are either diverged and/or reached, that which for its effectiveness also relies on intellectual foundation, is al-Akhlaq (the Ethics). Ethic cum conduct is pertinent in Islamic *Shar'iah*, Law, regulations, and legislation. Communal dealings is deem important in Islam and so is the communal root, the family of individuals. Charity, they say, begins at home and as such consumptive ethics is pertinent to maintaining the charity. There are ethics connected to what is consumed, how it is consumed, the quantity and manner in consumption, as well as guidelines in eating together. This paper focuses mainly on al-Ghazali's interpretation of communal consumptive ethics in his magnum-opus *Ihya' 'ulum al-Din*. It is the aim of the paper to expatiate the roles communal consumption ethics play in maintaining a contemporary and sustainable society. The study theoretically employs qualitative methods, central to library approach, in collecting data for the study, and an analytical style in analyzing the collected data. The study concludes and maintains that communal consumptive ethics is one of the cornerstones from which a sustainable society emerges.

**Keywords:** Imam Al-Ghazali, Communal Consumptive Ethics, Contemporary Society, Sustainable Society.

# Molla Fenârî: A Journey from the Ibn Arabî School to Ottoman Thought

**Res. Asst. Raziye SAYAR**
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**Abstract**

This article examines Molla Fenârî's understanding of existence, which holds a significant place in the Ottoman intellectual tradition, and how he transmitted the philosophical legacy of the Ibn Arabî school to Ottoman thought. As an original thinker synthesizing Sufism, kalam (Islamic theology), and philosophy, Molla Fenârî institutionalized and deepened Ibn Arabî's doctrine of *wahdat al-wujûd* (the unity of being) within the Ottoman madrasa system. The study explores how Molla Fenârî conceptualized the relationship between existence, knowledge, and truth, analyzing his hermeneutical perspective, which considers every being as a manifestation of God's names and attributes.

Molla Fenârî approaches existence as a reflection of divine unity and seeks to interpret the unity behind multiplicity. His philosophical system emphasizes that beings should be regarded as signs of divine reality. In this context, the interpretation of all beings in the universe as symbols reflecting God's unity plays a central role in Molla Fenârî's thought. Drawing on Ibn Arabî's doctrine of divine names, Molla Fenârî considers every being a manifestation of one of God's attributes and argues that humans can reach God's essential truth by reflecting on these manifestations.

The article discusses the lasting impact of Molla Fenârî's unity-centered understanding of existence on Ottoman thought, while also examining the metaphysical contributions of this perspective. While interpreting every entity in the universe as a symbol pointing to God's unity, Molla Fenârî guides humanity in constructing a world of meaning in its quest for truth. In conclusion, Molla Fenârî's conception of existence is evaluated not only as a theological legacy in Ottoman thought but also as a philosophical hermeneutic model. This legacy continues to offer a significant perspective on the search for existence, meaning, and truth in today's intellectual landscape.

**Keywords:** Molla Fenari, Ottoman Thought, Ibn Arabî, Wahdat al-Wujūd, Ontology

# The Application of Eye-Tracking in the Evaluation of Functional Visual Perception in Preschool Children

**Agnieszka ZALEWSKA-MELER**
Pomeranian University in Slupsk, Poland

**Małgorzata OBRYCKA**
University of Gdansk, Poland

**Abstract**

The aim of the article is to present the empirical possibilities of using eye-tracking in in the evaluation of functional visual perception in preschool children. The cognitive areas of the conducted studies included visual functioning in preschool children and linguistic activity in children between the age of 3 and 6 years. The applied method concerns eye-tracking research conducted using the Eye Tracker Pupil Invisible device with iMotions Core software (version 9.3). Studies revealed the complex character of perception in preschool children and numerous dissonances between the declarative and visual form of representation.

**Keywords:** Visual Perception, Functional Vision Assessment, Assisting Sight Development in Preschool Children, Eye-tracking Technology, Heat Maps, Fixations, Saccades, Field of Vision.

# Reality Communication Model

**Ivana FERKOVIC PASIC**
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**Abstract**

The global phenomenon of reality TV, with its expansion, hypothetically changes the behavior patterns of people in the Western Balkans. The content analysis of popular reality shows was conducted with the aim of assessing: the level of viewer satisfaction, the production-driven imposition of opinions, as well as the staging of conflicts and hate speech in the shows, and the extent to which negative political and social attitudes spread. A retrospective content analysis of elimination, music, and cooking reality shows (2017) was conducted. Since the production's interest created the illusion of two-way communication with the public, public reception was assessed through an online survey with 227 respondents (late 2021 and early 2022). The hypotheses set out were tested statistically, examining the significance of participation ($p<0.05$) and correlations between phenomena. The structured sample of online survey respondents consisted of 77% women and 23% men, predominantly of working age (31-50 years old). The associated variables of employed respondents (80%) and high educational qualifications (60%) statistically dominated ($p<0.05$) in the research sample. The representative sample recorded a paradoxical (73%) (non) viewership without satisfaction ($p<0.05$), which supports the Cognitive Dissonance Theory. 76% of respondents stated that reality content represents a reflection of the society in which it is broadcast, 47% believe that reality shows are used for political purposes, and 50% feel that they are dominated by hate speech. Social learning of negative reality communication models disturbs the cultural image of our region, which is why 83% of respondents support the cancellation of reality shows. Future research should focus on projects aimed at strengthening local cultural values and the psychology of the youth mass.

**Keywords**: Reality Content, Reception, Cultural Models

# Reading Cultures in Transition: From 19th-Century Ionian Societies to Modern Reading Clubs

**Lect. Dr. Yanna DIMITRIOU**
Ionian University, Department of Archives, Library Science and Museology, Greece

**Abstract**

The present study originated from my research on reading habits in the 19th-century Ionian Islands. It appears that the dominance of 'extensive' reading over 'intensive' in 19th-century Europe influenced reading habits, prompting intellectuals to seek mechanisms that would facilitate the dissemination of books and the reading of newspapers. This was often achieved through the establishment of reading rooms and reading societies or clubs, founded either by booksellers or by private individuals. The Ionian Islands, influenced by Western cultural trends, were among the first to adopt these evolving habits and formed voluntary associations that through the practice of extensive reading, broadened scientific, social and political horizons while promoting intellectual cultivation. The primary aim of this research was to examine the characteristics of these voluntary organisations, as well as the profiles of their members, in order to illuminate the nexus between civic society and reading in the long 19th century. Book selection and purchase became collective activities, fostering the formation of a sociable community engaged in the pursuit of mutual intellectual benefit, where readers were not only influenced by the texts themselves but also by the broader discourses surrounding reading, which often extended beyond the texts to encompass a wide range of issues.

So building on this foundation, the present article seeks to extend the study to contemporary reading clubs and modern readers, exploring their reading habits within the broader context of the evolution of reading culture in Greece. Are there any shared characteristics between past and present reading practices or readerships? Who reads today and who joins reading clubs? What are their motives and objectives? Those are some of the key questions this article aims to address, with a goal of encouraging further research in the field.

**Keywords:** Reading Clubs, Reading Societies, Social Reading, 19th-Century Readers, Modern Readers

# Recent Developments in Greece Business Administration: A Bibliometric Review

**Dr. Zacharias PAPANIKOLAOU**
Democritus University of Thrace, Greece

**Apostolos GOULAS**
University of Thessaly, Greece

**Abstract**

Business administration in Greece is shaped by the country's economic structure and regulatory framework. While the Greek economy has transitioned from agriculture to services, challenges persist in areas like bureaucratic inefficiency and complex tax laws. However, recent reforms, particularly in digitalization and entrepreneurship, aim to improve administrative processes. These efforts, alongside Greece's integration into the European Union, contribute to a gradually more competitive and business-friendly environment. The use of VOSviewer software requires data, which can be retrieved from indexing services such as Scopus, Web of Science, etc. In this particular application of VOSviewer, data was obtained from the Scopus indexing service. The keywords used were "Greece," "business," and "administration" to locate them in the titles, abstracts, and keywords of the corresponding publications. A total of 76 publications were extracted from the Scopus database for the search period from 1992 to 2024. In the last decade, there were 39 publications, compared to just 3 during the period from 1992 to 2002. Using VOSviewer, three clusters were created based on the keyword categorization of the publications. Cluster 1 contains keywords related to e-government, Cluster 2 includes public administration activities, and Cluster 3 contains keywords associated with the education level.

**Keywords:** Business Administration, Analysis, Business Strategy, Management

# Women and Business Management: A Bibliometric Review

**Dr. Zacharias PAPANIKOLAOU**
Democritus University of Thrace, Greece

**Apostolos GOULAS**
University of Thessaly, Greece

**Abstract**

Women in business management play a crucial role in shaping organizational strategies and fostering innovation. Despite persistent challenges such as gender disparities in leadership, women are progressively assuming top managerial positions. Their contributions enhance decision-making processes, improve organizational performance, and drive sustainable growth. Promoting gender diversity in management not only aligns with corporate social responsibility but also significantly contributes to economic development and the long-term competitiveness of businesses in a globalized market. The use of VOSviewer software requires data, which can be retrieved from indexing services such as Scopus, Web of Science, etc. In this specific application of VOSviewer, data was obtained from the Scopus indexing service. A total of 313 publications were extracted from the Scopus database for the search period from 1977 to 2023. In the last decade, there were 143 publications, compared to just 2 during the period from 1977 to 1987. Using VOSviewer software, seven clusters were created based on the keyword categorization of the publications. Cluster 1 contains keywords related to gender, Cluster 2 includes those related to women, Cluster 3 relates to management, Cluster 4 focuses on leadership, and finally, Cluster 5 includes keywords related to entrepreneurship.

**Keywords**: Business Management, Analysis, Business Strategy, Management

# Navigating Regulatory Challenges and Opportunities in FoodTech Startups: Fostering Innovation in a Complex Ecosystem

**Ulviyya MAMMADOVA**
Researcher, Azerbaijan Technological University, Azerbaijan

**Abstract**

The regulatory landscape plays a pivotal role in shaping the FoodTech startup ecosystem, influencing innovation, market feasibility, and the overall growth dynamics of entrepreneurs. This article explores the challenges posed by food security regulations, labeling laws, and environmental policies, alongside the potential opportunities for fostering innovation through adaptable regulatory frameworks. Additionally, it discusses the importance of collaboration between entrepreneurs, regulators, and research institutions in cultivating a sustainable and dynamic startup ecosystem. Strategies for improving collaboration and regulatory approaches are proposed to enhance market opportunities, promote sustainable practices, and support entrepreneurial growth in the FoodTech sector.

The FoodTech industry is undergoing rapid technological advancements, driven by innovation and evolving consumer preferences. However, the sector is often constrained by a complex regulatory framework that includes food security regulations, labeling laws, and environmental policies. These regulations pose significant challenges to FoodTech startups, particularly in terms of compliance costs and market entry barriers. Despite these obstacles, regulatory frameworks have the potential to act as catalysts for innovation if designed with flexibility and foresight. This paper explores the role of regulations in shaping the startup ecosystem in the FoodTech industry, emphasizing how regulations can both hinder and enable growth, and how collaboration between stakeholders can foster a more dynamic and sustainable ecosystem.

**Keywords:** Startup, Innovation, Foodtech, Ecosystem, Food Industry

# Sustainability and Responsibility as Aspects in European Tourism Policy Framework and the Potential for Tourism Sector in Greece

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**Abstract**

Tourism is a development activity that has significant socio-economic and environmental impacts on local communities in the European Union (EU) and its Member States. The policy framework for tourism in the EU is linked to the Sustainable Development Goals 2030 (SDGs 2030) and issues related to consumer behavior, the circular economy, water management and climate change. These issues affect high-level policy issues in the EU such as foreign policy, environmental and energy policy which in turn affect development activities such as tourism, both domestically and internationally. Therefore, it is important to highlight the potential and limitations of the private sector in these public policies both in their formulation and evaluation through partnerships with local authorities. In the EU and more specifically in Greece, Corporate Social Responsibility is not just a business issue, but since 2001 it has been a political issue that is currently enriching the political discourse on the contribution of the tourism industry to the SDGs 2030 and the socioeconomic impacts of climate change. This paper analyzes the issues of sustainability and responsibility in EU tourism policy and, through comparative policy analysis, criticizes the implementation of policies in Greece in this direction.

**Keywords:** Tourism Policy, Sustainability European Union SDGs 2030 Greece

# Investigation of Mathematical Modeling Ability of 7th Grade Students in MEB-BILSEM Schools

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**Abstract**

Mathematical modeling has received increasing attention in recent research on mathematics education. This interest is expanding from primary school level to university and all types of schools, including public, private, foundation and science high schools. In these studies, modeling activities have shown that students gain the ability to use mathematics in daily life, to think creatively, to approach problems critically, to share their solutions and thoughts, to work in teams and to gain analytical thinking ability. The purpose of this study is to examine the mathematical modeling ability of 7th grade students of MEB-BİLSEM (Science and Art Education Center) and to determine the challenges, if any, that students face in this process. The study was conducted with 7th grade students in a BİLSEM school located in a metropolitan area in the Black Sea Region of Turkiye. All students in the class were divided into groups of four and received a four-week modeling education. At the end of this education, two focus groups of four students were elected and requested to work on the *Summer Job Problem*, which is a modeling activity. While the groups were working on the problem, the whole process was videotaped. The data obtained were transcribed and analyzed qualitatively together with the students' written answers. As a result of the study, it was observed that students had challenges in identifying and applying the method and verifying the solution in the model construction phase of the modeling process.

**Keywords:** Middle-school students, Mathematics Modelling, Modelling Process, Model Eliciting Activities

# The Use of Bibliometric Analysis Methods in the Fields of Theatre and Cinema

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**Abstract**

This paper addresses the importance of bibliometric analysis in the fields of theatre and cinema, and how these methods can systematically examine the theoretical and practical interactions within both fields. Academic works in theatre and cinema are generally shaped by theoretical and historical perspectives. However, the use of bibliometric analysis methods can provide researchers in these fields with the opportunity to evaluate data sets objectively and quantitatively. The limited number of bibliometric studies in the fields of cinema and theatre in Turkey makes it difficult to understand both the theoretical and practical trends in these fields and to comprehensively analyse the interactions between them. In this context, the paper discusses the definition of bibliometric analysis methods and their historical background, as well as the contributions that bibliometric analyses can make to the literature of theatre and cinema. Bibliometric analyses not only clarify academic trends and patterns but also provide significant data showing how interdisciplinary interactions between theatre and cinema occur. Therefore, a key aspect of this study is discussing how these analyses can serve as a guide for future research and how emerging trends in these fields can be explored more comprehensively. The study emphasizes the need for a comprehensive examination of the academic literature in the fields of theatre and cinema through bibliometric analysis methods, and the contributions this need can provide to these fields are discussed in the conclusion.

**Keywords:** Theatre, Cinema, Bibliometric Analysis, Interdisciplinary Trends

# Investigation of Mathematical Modelling Abilities of Middle School First Grade BILSEM Students

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**Abstract**

Educating individuals who solve complex problems encountered in daily life in a practical and creative way is gaining importance day by day. In the field of mathematics education, one of the tools used to develop abilities that require associating mathematics with daily life and solving non-routine problems is model eliciting activities. Model eliciting activities are open-ended, non-routine real-life situations that do not have a single answer and require individuals to interpret and formulate this situation mathematically. It is stated in the international literature that these activities improve individuals' hypothesis generation and development, creative and critical thinking, working together, metacognitive and analytical thinking skills.

This study, in which modelling activities were used, was conducted in a MNE (Ministry of National Education)-BİLSEM (Science and Art Education Centre) school located in a large city in the Black Sea Region. This qualitative study aimed to examine the mathematical modelling abilities of first grade middle school students. Two selected focus groups were given the modelling activity '*Pastry Chefs Compete*' after four weeks of preparation and asked to work on it. The whole process was recorded with audio and video. After the written analysis of the recordings, they were analysed qualitatively together with the students' worksheets. As a result of the study, it was revealed that the groups had difficulties in understanding the problem and the students in both groups had difficulties in the process of creating a model while trying to reach the conclusion as soon as possible

**Keywords:** Middle School Students, Model Eliciting Activities, Mathematical Modelling

# Artificial Intelligence in Scientific Writing: Ethical Challenges and Regulatory Perspective

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**Abstract**

Scientific writing benefits from artificial Intelligence tools to increase research productivity. However, research ethics questions have emerged to investigate the reliability of AI-generated content, because biased outcomes must be evaluated for authenticity and transparency.

Notable opportunities cannot mask ethical concerns that require a detailed evaluation. Research integrity and accountability have become problematic owing to three emerging issues related to authorship, transparency, and the ability of machine-learning-based content to perpetuate existing biases during creation.

This study focuses on answering the following research question: To what extent can current international ethical standards effectively regulate AI technologies to minimize risks and maximize potential benefits in scientific writing? Thus, this study establishes three main goals: a contemporary review of ethical AI implementation in academic writing standards, an examination of existing methods, and specific policy suggestions for institutes and worldwide organizations to build an ethical framework for scientific research and writing.

This research provides guidelines for curriculum developers, educational authorities, and researchers to reduce ethical dilemmas regarding AI use in scientific writing practices.

**Keywords:** Academic Writing, Artificial Intelligence, Ethical Framework, Research Integrity, Transparency

# A Comparative Analysis of Word Formation Processes in English and Albanian languages. Morphological Strategies and Linguistic Evolution

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**Abstract**

This study investigates the word formation processes in English and Albanian, analyzing the similarities and differences between the two languages. Both languages employ various morphological strategies, including derivation, compounding, and inflection, to generate new lexemes. While English predominantly relies on affixation and compounding, Albanian utilizes adhesion and inflectional morphology, characteristic of its highly inflected structure. The paper explores the role of affixation in both languages, examining how prefixes and suffixes contribute to word meaning and syntactic function. Furthermore, it compares the structural complexity and productivity of compound words, noting that English displays greater flexibility in word combination, whereas Albanian compounds adhere to more rigid morphological patterns. The analysis also addresses the influence of loanwords on the word formation processes in both languages. By examining these processes, the study highlights the impact of historical, cultural, and typological factors in shaping the word formation strategies of English and Albanian, offering insights into their linguistic evolution and the cognitive mechanisms underlying language development.

**Keywords:** Word Formation, Morphology, Affixation, Compound Words

# The Phenomenon of the „Eugen Ionesco“ National Theatre in the Republic of Moldova

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**Abstract**

This article examines the formation and development of the National Theatre “Eugen Ionesco” in the Republic of Moldova, focusing on the emergence of its distinctive artistic style and the directorial aesthetics shaped by its artistic director, Petru Vutcarau. The study explores the defining artistic principles that have guided the theater's creative ensemble, emphasizing the influence of

E. Vakhtangov’s theatrical school and E. Ionesco’s dramaturgy on the theater’s conceptual foundation. Particular attention is given to key performances that most effectively embody the stylistic direction of the National Theatre “Eugen Ionesco.” These productions are analyzed in relation to core aesthetic concepts, such as expressiveness and realism, grotesqueness and authenticity, associative perception, and absurdism. The investigation highlights how these elements are integrated by directors in their search for theatrical expression, aligning form with dramatic content to construct a cohesive artistic vision. Furthermore, the study examines the fundamental principles of theatrical aesthetics that define the creative process of the National Theatre “Eugen Ionesco” and assesses the extent of its influence on theatrical discourse both within the Republic of Moldova and internationally.

**Keywords:** Moldovan Theater, Performance, E. Vakhtangov, E. Ionesco, P. Vutcarau

# Examination of Postgraduate Theses about Curriculum Fidelity and Factors Affecting Fidelity on Turkish Trainer

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**Abstract**

In this study, it is aimed to examine the thesis studies published on Commitment to Curriculum in Turkey between 2018 and 2025. In this direction, document analysis, one of the qualitative research methods, was used and the related studies were investigated in terms of publication type, publication year, education level and branch of educators, research method, sample type, type of institution applied, data collection tools and data analysis methods. In the study, out of 26 theses accessed from the National Thesis Centre database, 23 of them are master's theses and 3 of them are doctoral theses. It was seen that all of the theses obtained from the National Thesis Centre were open to sharing.

In the presentation of the study, it is seen that the majority of the theses (88%) are master's theses. It was concluded that the most studies on the subject of commitment to the curriculum were conducted in 2023 with a percentage of 31%. When analysed in terms of the educational level and branches of the educators, it was concluded that half of the thesis studies (50%) were carried out without distinguishing the level and branch, 19% were applied to classroom teachers, 8% to primary and secondary school teachers, and 4% to teachers in other branches. The sampling type was generally determined as maximum diversity sampling type. When the studies were analysed institutionally, 96% of the studies were conducted in schools affiliated to the Ministry of National Education and 4% in higher education institutions. 77% of the studies were conducted by questionnaire, 12% by both face-to-face and questionnaire and 11% by face-to-face. SPSS package programme was used in data analysis.

**Keywords:** Fidelity to the Education Program, Commitment to Curriculum, Program Fidelity

# Public and Digital Diplomacy as Tools to Promote the Image of Romania

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**Abstract**

In an interconnected world, public diplomacy and digital diplomacy have become essential tools for promoting a state's image internationally. Romania, as a member of the European Union and NATO, is adapting its diplomatic strategies to strengthen its global influence and improve its external perception. This article analyses the role of public and digital diplomacy in the process of promoting Romania's image, highlighting the strategies used by the Ministry of Foreign Affairs and other institutions to communicate effectively with international audiences. The study explores the impact of the use of social networks, online platforms and emerging technologies in digital diplomacy, highlighting their advantages and challenges. It also examines how Romania can align its diplomatic practices with international standards in order to become a more visible actor on the global stage. Based on a comparative analysis with other Central and Eastern European countries, the article proposes measures to improve the effectiveness of Romanian digital diplomacy. The conclusions underline the importance of an integrated strategy integrating traditional diplomacy with new technologies in order to strengthen Romania's image in the current context of globalization and digitalization.

**Keywords:** Public Diplomacy, Digital Diplomacy, Romania's Image, Global Influence

# Strained Finances, Strained Marriages? Perceived Financial Hardship and Divorce Likelihood in Azerbaijani Families

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**Abstract**

Financial hardships are one of the major stressors in marital relationships. Detrimental effects of financial stress on marital quality have been subject to many studies in the current literature. However, the literature is fairly limited for the case of developing Islamic countries such as Azerbaijan. This research explores the role of financial strain, characterized by perceived inadequacy of resources to meet financial demands, in marital dissatisfaction or more precisely, frequency of thinking about getting divorced. Using first hand survey data on married individuals (n=534) results from conditional probability analysis shows that financial satisfaction matters for married individuals. Probability of "thinking often" about getting divorced decreases for both males and females as financial satisfaction increases, while the conditional probability of "thinking never" decreases. This result is consistent with various measures of financial satisfaction. While more comprehensive analysis is required to have more explicit conclusion, current findings well explain the Family Stress Model framework in case of Azerbaijani families.

**Keywords:** Financial Strain, Marital Conflict, Marriage, Divorce, Azerbaijan

# Business Management in the New Digital Era

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**Abstract**

The new digital era has transformed management of business, in a unique and solicit way. Companies, are trying to follow up with the technological jumps and remain compatitive, by introducing on their operations the achievements of modern society, like artifial inteligence (AI), big data analytics, cloud computing, blockchain, metaverse. Digital technologies, applied on daily business, end up, transform them, and reshape their organizational structures, affect its decision making process, even with market interaction. Companies and employees should train in the new digital era with digital skills, in order to remain competitive. Furthermore, e-commerce and e-marketing are gaining ground as new market trends for companies, creating a new unstaible business environment, with global real and digital competition. The inceased competition and the continuous need for companies' innovation, make effective leadership a necessity. The present research paper tries to investigate the effect on business management on the new digital era. Companies from different sectors will be examined, in order to study good practices and highlight the challenges and opportunities that these companies are facing.

**Keywords:** Business Management, New Digital Era, Competitiveness, Decision Making Process, Digital Skills

# Management of Organic Farms under the Farm to Fork Strategy: The case of Greece

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**Abstract**

The Farm to Fork strategy, as part of the European Union's Green Deal strategy, is aiming to create a sustainable food system by promoting environmentally friendly farming practices, reducing chemical inputs, and ensuring fair economic attributes for farmers. This ambiguous strategy, aims to accelerate the transition of modern societies to a sustainable food system that should have a neutral or positive environmental impact, help to mitigate climate change and adapt to its impacts, reverse the loss of biodivesity, ensure food security, nutrition and public health, making sure that everyone has access to sufficient, safe, nutritious, sustainable food, and preserve affordability of food while generating fairer economic returns, fostering competiteveness of the EU supply sector and promoting fair trade. In Greece, a country with vast agricultural sector, organic farming is at the front line for economical and social reasons. The present study tries to investigate the opinion of Greek farmers, regarding the new Farm to Fork strategy and its implications. Moreover, will try to study, the way EU sustainability targets affect management and competiteveness of organic farms in Greece.

**Keywords**: Management, Organic Farms, Farm to Fork Strategy, Sustainability, Competitiveness

# Examining the Reflections of Spatial Perception on Human Psychology and Emotional State Through the Concepts of "Play-Fiction"

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**Abstract**

Humans feel the need to express their experiences through channels such as drama, theater, painting, music, and dance. Confronting oneself is a painful process, and individuals often fear facing their own flaws. Jung attributes this fear to the darkness of the human psyche. For transformation to occur, an inner journey is essential. In social life, individuals tend to conceal their true identities and live behind a mask. Jung refers to this mask as "Persona." Perception is a fundamental area of study in psychology and is shaped by emotional tendencies. Life experiences influence perception. In contemporary society, rapid change has led to issues such as loneliness, alienation, and insecurity. This study examines how individuals working long hours in the same space engage in drama-play fiction training to adopt different identities and its effects on emotional regulation, self-control, and empathy. The research will be conducted through a literature review, focusing on Erving Goffman's Dramaturgical Self Theory, particularly the concepts of Front Stage, Back Stage, Impression Management, and Role-Playing. It is proposed that individuals can transcend their existing statuses and transform their emotions through play-fiction. Drama education is believed to foster self-awareness and have a positive impact on identity transformation.

**Keywords:** Persona, Dramaturgical Self Theory, Perception and Emotion Management, Drama and Play-Fiction, Individual and Social Transformation

# The Insurance Industry in Turkey and the Importance of Home Insurance

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**Abstract**

The insurance industry maintains its popularity day by day. The intense interest and demand in this field contribute to the sector's development. Recently, home insurance has gained importance and has become a branch of insurance sought by individuals aiming to protect their assets. It is extremely important to correctly identify the factors affecting premiums in home insurance, both for policyholders and insurers. Insurers must apply the right pricing policy to determine their reserve funds and compensate for damages in case of risks. If they offer too low a price, they will not be able to cover the damages when a risk occurs, and if they offer a price that is too high, the policyholder will face a loss. Those wishing to insure will want to adjust their budgets with an accurate price estimate. Therefore, a model is needed to predict the premium amounts. In this study derived from the thesis work, a generalized linear model was established using key variables believed to influence the price, and the extent of the impact of these variables on the price was investigated. According to the analysis results, the most influential variable on the price was found to be the size of the house, while the least influential variable was the age of the house.

**Keywords:** Generalized Linear Models, Exponential Distribution Family, Insurance

# Persian Rule in Egypt from the Beginning until the Inaros Revolt (525-460 BC)

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**Abstract**

Egypt is a civilisation located in the northeast of Africa, which has stood out with its geographical location throughout history. The Nile River formed the basis of Egypt's agriculture, economy and social structure, and contributed to the development of civilisation by providing fertile lands with its annual floods. As Herodotus stated, 'Egypt is the gift of the Nile.' From the Neolithic Age until the Iron Age, Egypt struggled against the attacks of the Nubians in the south and the Libyans in the west, expanding its borders in the process and becoming an important power in the region. Egypt's relations with the outside world began in the third and second millennia BC with trade with the states in the Levant and the Mediterranean. This trade was actually in the form of supplying Egypt's deficiencies. The timber and stone required for the temples and palaces built in parallel with the greatness of the pharaoh, who was seen as a divine figure, were tried to be supplied from nearby geographies. In addition, Egypt was dependent on foreign sources for precious metals, precious stones, exotic odours and resin used in mummy making. The desire to control resources directly led Egypt to war with the Near Eastern states. Wars such as the Battle of Kadesh with the Hittites increased Egypt's regional influence. However, external threats such as the Hyksos invasion and Assyrian attacks left Egypt in a difficult situation. The arrival of the Persians in the region radically changed the history of Egypt.

**Keywords:** Egypt, Persian Empire, Cambyses II, Darius I - Mısır, Pers İmparatorluğu, II. Kambyses, I. Dareios

# Effective Online English Teaching with Interactive Methods

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**Abstract**

With the rapid expansion of digital education, online interactive English language teaching (ELT) has emerged as a central focus of educational research. This study explores effective strategies for interactive teaching in the online ELT, focusing on communicative approaches, technology integration, student engagement, and assessment methods. The communicative language teaching (CLT) approach emphasizes real-world communication and interactive learning, which can be facilitated through video conferencing tools, discussion forums, and collaborative projects. These methods promote increased student participation while helping to alleviate learner anxiety. Furthermore, the integration of advanced technologies, such as Virtual Learning Environments (VLEs), gamification platforms, Artificial Intelligence (AI), and Virtual Reality (VR), has proven to significantly enhance student engagement, knowledge retention, and motivation. Active learning techniques, including peer collaboration, break out rooms, and AI-driven personalized feedback, further support meaningful learning experiences. Additionally, the use of digital assessment tools, such as automated feedback systems and peer evaluations, contributes to a more efficient and dynamic approach to language acquisition. Together these strategies work in synergy to optimize the online ELT experience, fostering a more interactive, engaging, and effective environment for students.

**Keywords:** Online Interactive English Language Teaching (ELT), Communicative Approaches, Technology Integration, Student Engagement, Communicative Language Teaching (CLT), Virtual Learning Environments (VLEs), Artificial Intelligence (AI), Digital Assessment Tools.

# Comparative Analysis of Performances in Western European And Eastern European Economies-Free Market Economies vs Command Economies

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**Abstract**

The article conducts a comparative analysis of the performances of the Western European economies and the Eastern European economies on three different levels 1. Comparison between the performance of the former communist countries and free market economies in a period 1950-1990, 2. Comparison between the performance of the former communist countries in a period 1950-1990, when they were command economies, with the performance in a period after 1990, when they became free market economies, and 3. Comparison between the former communist countries and the Western countries in a period after 1990.

The Western European countries were more developed than the Eastern European countries. The least developed Western European country Italy was at the same level of development as the most developed Eastern European country Czechoslovakia. The Western European countries grew faster than the Eastern European countries in a period 1950-1990 with the exception of Yugoslavia. This means that they increased their advantage over the Eastern European countries. Therefore, divergence occurred.

In a period 1990-2024, after the transition, the Eastern European countries grew faster than the Western European countries and managed to catch up. Therefore, convergence between the two groups of the countries occurred. The Eastern European countries grew faster in a period 1990-2024 than in a period 1950-1990. This would lead to a conclusion that free market economies have been superior to command economies. However, if qualitative, non-monetary indicators are used, the command economies fared much better in comparison with free market economies than when GDP per capita is used. All of them have had a high Human Development Index. This was the result of excellent health and education system. This is corroborated by the fact that after the transition health and education systems rapidly deteriorated in the former communist countries. Also, differences in distribution of income and wealth dramatically increased, particularly in Russia and Romania. A survey conducted in 2006 asked a simple question: "Life is better now than before". The results of the survey show that a conclusion as regards the satisfaction with life after the transition are inconclusive.

**Keywords:** Free Market Economy, Command Economy, Convergence, Divergence, GDP per capita (PPP), Human Development Index (HDI)

# *The Queen and the Mountain* of Bandaman Maurice : A Dramatization of the Insignifiance of the Contemporary Political World

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**Abstract**

Contemporary society is shaken by various ills, among which political problems occupy a prominent place. These problems are pointed out by the ivorian playwright Bandaman Maurice in his play The Queen and the mountain. As an obsever of the society in which he lives, and cocerned with depicting these ills that generate not only the fracture of society but also the degradation of the political climate, this playwright decides to stage theignoble acts of politicians. He does so with a trivial discourse to convey their insignifiance.

**Keywords** : politic, dramatization, society, insignifiance, contemporary

# Crisis Management and Financial Strategies: Revitalizing Tourism Amid Recession

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**Abstract**

The tourism industry has faced unprecedented challenges in times of recession, requiring effective crisis management and financial management strategies. Tourism destinations are trying to adapt to the negative effects of the economic recession, focusing on innovative approaches to maintain operations, preserve jobs and maintain financial stability. In this context, the aim of this paper is to shed light on the initiatives undertaken by a tourism organization in an emerging tourism destination in Greece, to support the continued operations of tourism-related businesses and to prepare the destination for future tourism development and economic recovery. It highlights the critical role of strategic planning, resource optimization, and stakeholder collaboration in mitigating the impacts of reduced traveler demand. The research results aim to contribute to the ongoing debate on sustainable recovery and long-term stability in tourism management. The paper concludes with actionable insights for policymakers and destination management organizations (DMOs) on navigating crises and building resilience in the tourism sector.

**Keywords:** Crisis Management, Financial Strategies, Resilience, Recovery, Destination Management

# Inspection of Cost Accounting and Pricing Adequacy of an Object

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**Abstract**

Running a successful business isn't just about sales—it's about making sure those sales generate profit. Cost accounting, often operating behind the scenes like a gray cardinal, helps businesses track every unit spent, from materials and labor to overhead costs, so they can spot inefficiencies and make smarter financial decisions. But knowing costs alone isn't enough. Pricing adequacy takes that data and ensures prices not only cover expenses but also keep businesses competitive and appealing to customers.This paper examines the adequacy of costing, assessing how correctly and fairly all necessary costs related to business success are considered. It also determines the importance of cost accounting and pricing adequacy in business decision-making, highlighting their role in sustainable profitability. Businesses use strategies like cost-plus, market-based, and value-based pricing to stay ahead, while external factors such as inflation, regulations, and customer demand also shape pricing decisions.When cost accounting and pricing adequacy work together, businesses can avoid major mistakes, maximize profits, and stay strong in a constantly changing market. They turn numbers into strategy, and strategy into profit.

**Keywords:** Cost Accounting, Pricing Adequacy, Profitability, Financial Management, Pricing Strategy

# The Impact of Cooperative Learning in Developing English Language Skills Among Primary School Students in a Romanian Private School

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**Abstract**

In an increasingly digitalized world, where children spend more time in front of screens than engaging in direct interaction with their peers, the need to teach young learners how to develop collaboration skills and both social and individual responsibility has become more evident. Throughout my seven years of teaching English at both kindergarten and primary school levels in a private school, I have observed firsthand the benefits of cooperative learning. Through methods such as direct observation, reflective journaling, and summative assessments, I have found that students not only improve their English language proficiency but also develop crucial social and cognitive abilities.

The purpose of this study was to highlight the significant impact that such a method can have on the development of collaborative skills among primary school students and to examine more closely its influence on their English communication abilities. The focus was placed on self-confidence, fluency in expression, initiative in starting conversations in English, and the equitable distribution of responsibilities during classroom activities. Furthermore, this study will demonstrate that primary school students gain an essential tool that teaches them how to learn, not only in English but across other academic subjects as well. The structured and well-organized nature of the cooperative learning method fosters a deeper understanding and long-term retention of knowledge, equipping students with valuable lifelong learning strategies.

**Keywords:** Cooperative Learning, Collaboration Skills, Learning to Learn, Teaching English

# Imam Al-Ghazali's Scholastic Ethics and Its Signidicance to Solving the Contemporary Un-Ethical Dealings

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**Abstract**

Islam contains a general code of conduct without any disagreement. Islam, as both a religion and way of life, also encompasses all religious issues and affairs affecting human's life is also a fact unchallenged by those of consummate minds. One important aspect of all facets of Islamic discussions, that upon which all arguments sprout and agreements are either diverged and/or reached, that which for its effectiveness also relies on intellectual foundation, is al-Akhlaq (the Ethics). Ethic cum conduct is pertinent in Islamic Shari'ah, Law, regulations, and legislation. Scholastic ethics is the bone of relationship between tutors and tutees, and more pertinent is maintaining the quality for onward inculcation into the societal fabrics as it is the major foundation for having a sustainable society. This paper focuses mainly on al-Ghazali's interpretation of scholastic ethics in his magnum-opus *Ihya' 'ulum al-Din*. It is the aim of the paper to expatiate the roles scholastic ethics play in maintaining a contemporary and sustainable society. The study theoretically employs qualitative methods, central to library approach, in collecting data for the study, and an analytical style in analyzing the collected data. The study concludes and maintains that scholastic ethics is one of the cornerstones for a sustainable society and it must be maintained as such.

**Keywords:** Imam Al-Ghazali, Scholastic Ethics, Contemporary, Unethical Dealings

# Greek Language Influence on the Albanian Language and Literature: A Historical and Cultural Overview

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**Abstract**

The Albanian language has incorporated a considerable number of Greek words, a phenomenon resulting from extensive interactions between the two civilizations over time. This process of lexical borrowing began with the dissemination of Greek culture, particularly during the Byzantine Empire. Moreover, the ancient Greek language impacted Albanian through trade, contact with Greek-speaking communities, and its prominence as a language of science, philosophy, and literature.

Greek-derived vocabulary in Albanian spans in various domains including religion, governance, science, literature, and daily life. The most prominent categories of borrowed Greek terms encompass:

**Religious Lexicon**: ATerms such as *kisha* (church), *patriark* (patriarch), *episkop* (bishop), and *teologji* (theology) reflect this influence.

**Cultural and Intellectual Contributions**: Words such as *filozofi* (philosophy), *logjikë* (logic), are derived from Greek.

**Administrative Terminology**: Examples include *diplomaci* (diplomacy), *shtet* (state), and *konsull* (consul).

**Everyday Vocabulary**: The Albanian language has absorbed numerous Greek terms for objects, professions, and activities in daily life. Examples include *orë* (clock), *mjek* (doctor), etc.

**Scientific and Technical Terminology**: Terms such as *analizë* (analysis), *fizikë* (physics) etc., demonstrate this influence.

The presence of Greek borrowings in the Albanian language highlights the profound cultural and intellectual exchange between the two civilizations. This ongoing influence has significantly enriched Albanian vocabulary.

**Keywords:** Loan words, Albanian language, linguistic influence, cultural exchange, historical borrowing.

# Balancing Digital and In-Person Communication in Social Service Provision

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**Abstract**

Objectives: Digital technologies (IT) are transforming social work by changing communication methods, improving service efficiency, and increasing accessibility for various target groups. This study explores how IT implementation impacts communication between social workers and residents, and how these technologies affect access to social services in rural areas.

Materials and Methods: The study uses empirical data from a survey on social workers' organization and digital tool usage. An eco-social perspective is applied, emphasizing the relationships between individuals and their environment regarding resource and service access.

Results: Survey data show that 78% of social workers primarily provide in-person services, either through client visits or support at social service centers. Meanwhile, 14% rely on remote communication via phone calls, video conferencing, and emails.

Conclusions: The integration of digital technologies in social work requires balancing innovative solutions with the need for face-to-face communication. While digital tools can improve service efficiency, they must be tailored to the specific needs of target groups. Increased remote communication can hinder social workers' ability to fully assess clients' situations, potentially reducing the effectiveness of personalized support and services.

**Keywords**: Social Work, Digitalization, Communication

# Science and Engineering

# Mathematical Modelling and Structural Stability in Aerospace

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**Abstract**

According to [1] there is no set rules, and an understanding of the "right" way to model. One learns it by practice. To model can be reached by familiarity with a wealth of examples. A model is a representation of a process. Usually, a mathematical model takes the form of a set of equations describing a number of variables. We distinguish between continuous models, in which the variables vary continuously in space and time and discrete models whose variables varies discontinuously. Applied mathematicians have a procedure, almost a philosophy that they apply when building models, for a process of interest that on wants to describe or more importantly, explain. Observations of the process lead, sometimes after a great deal of effort, to a hypothetical mechanism, that can explain the phenomenon. The purpose of a model is then to formulate a description of the mechanism in quantitative terms. The analysis of the resulting model leads to results that can be tested against the observations. Ideally, the model also leads to predictions, which if verified, lend authenticity to the model. It is important to realize that all models are idealizations and limited in their applicability. In fact, one usually aims to simplify. The idea is that if a model is right, then it can be subsequently be made more complicated, but the analysis of it is facilitated by having treated a simpler version first. Simplifications appear in the case of the differential systems that describe the movement of existing airplanes, UAVs and space vehicles, and even during the development period of new prototypes. Because, the undesirable consequences due to the simplifications, as well as the cost of new prototypes, it is useful to have theoretical tool that establishes necessary condition which has to be satisfied by the simplified system of differential equation. The necessary condition it could be the structural stability in S. Smale sense of the simplified system of differential equations. In the present paper, the meaning of the structural stability is presented and examples of airplanes, UAVs and space vehicles models are given whose theoretical model is not structurally stable.

**Keywords:** Mathematical Modelling, Structural Stability, Aerospace.

# The Importance of Operational Excellence within StartUps and Early Stage Companies

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**Abstract**

Operational excellence is critical for startups and early-stage companies to establish a foundation for sustainable growth and competitive advantage. In the volatile and resource-constrained environment of a startup, efficient and effective operations can make the difference between survival and failure. This abstract explores the role of operational excellence in streamlining processes, optimizing resource allocation, and fostering agility—key factors for addressing market demands and scaling effectively. Startups often face challenges such as limited funding, small teams, and rapidly evolving goals. By adopting a mindset of continuous improvement, leveraging data-driven decision-making, and embedding lean practices, these companies can reduce waste, minimize inefficiencies, and achieve higher productivity. Furthermore, operational excellence supports the creation of a robust organizational culture, enabling alignment around shared objectives and maintaining focus amidst uncertainty. Practical examples, such as implementing agile project management or automating repetitive tasks, underscore the value of operational excellence in improving customer satisfaction and accelerating time-to-market. Ultimately, the pursuit of operational excellence equips startups to build scalable systems, adapt to market shifts, and position themselves for long-term success in a highly competitive business landscape. This study highlights the imperative of operational excellence as a strategic priority for startups seeking to navigate the complexities of their formative stages.

**Keywords:** Operations, Operational Excellence, Continuous Improvement, , SMEs, Startups, Optimization

# Preliminary Study on Development of Waffle Cones Formulated with Powder from Rosehip Waste

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**Abstract**

**Introduction:** The waste that remains after processing the rosehips to obtain rosehip purée (raw material for rosehip jam) can be a valuable source of fibres, carotenoid pigments, phenolic compounds, and micro- and macro-elements (Borşa (Bogdan) *et al*., 2023; Borsa (Bogdan) *et al*., 2024). Therefore, it could be recovered as a powder (Rp) for later use as an ingredient in the food industry.

**Aims:** The aim of this study was to use such a powder in the formulation of ice cream waffle cones by partially replacing (10, 15, and 20%, respectively) the wheat flour in a consecrated manufacturing recipe that uses a minimum amount of sugar necessary to obtain this type of product.

**Materials and Methods:** Four waffle cone formulations were prepared: control (WCc), with 3.7 (WC3.7%rp), 5.6 (WC5.6%rp), and 7.5% rosehip powder (WC7.5%rp) to fulfil the purpose. They were analysed for proximate composition, pH, colour, techno-functional and texture properties and sensory to identify the formula preferred by consumers.

**Results:** The use of Rp in the proportion of 7.5% caused a significant increase in the moisture content of waffle cones, the ash and fibre content, and a decrease in the fat and protein content, as well as the pH; instead, it did not significantly influence the carbohydrate content because wheat flour and Rp had close levels. The total colour difference ($\Delta E^*$) of WC7.5%rp was obvious from that of WCc; however, consumers rated them to the same extent, with the difference between overall scores not being significant (8.1-8.4).

**Conclusion:** In conclusion, Rp is suitable for preparing ice cream waffle cones by replacing wheat flour in a proportion of up to 20%. Our further studies will evaluate these formulations' textural attributes, hydration properties, polyphenol and carotenoid content.

**Keywords:** Colour, Proximate Composition, Rosehip Powder, Sensory Analysis, Waffle Cones

# Reassessment of conservation status and analysis of the distribution patterns of the genus *Verbascum* L. (Scrophulariaceae) in Morocco

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**Abstract**

The current investigation provides an in-depth analysis of the diversity, endemism, and distribution patterns of 32 *Verbascum* taxa (28 species and 4 subspecies) in Morocco, along with a comprehensive reassessment of their conservation status according to the IUCN Red List Categories and Criteria.

Based on the current knowledge, the genus *Verbascum* is widely distributed in Morocco and displays a large ecological amplitude. It occurs from plains, near the coastline up to high mountains (2000–3500 m); on limestone or siliceous soils, and occupies a variety of habitats: forests, scrublands, lowland and high mountain pastures, rocky places, dry stony ravines and wadis. The species abundance by phytogeographical region ranging from 13 to 2-3 species. The high species-richness zones are restricted to mountain regions: the High Atlas (HA), Middle Atlas (MA), and Rif (R). Furthermore, various distribution patterns of the genus in Morocco can be distinguished; the majority of the species (ca. 46 %) are bi- or tri-phytogeographical elements. This category is followed by 26 % of the species that are mono-regional elements. A quarter of the species (24 %) have a broader distribution covering four to six phytogeographical regions in Morocco. Finally, the last group (4%) is only represented by one species, *V. sinuatum*, which is very well distributed all over the country and all over the Mediterranean region also. Based on this distribution of the genus *Verbascum* in Morocco we can distinguish several categories: (1) non-endemic, which are either widespread across the Mediterranean or are restricted to its western part, (2) North African endemic taxa shared by Morocco and adjacent North African, (3) Morocco-Iberian endemics taxa and (4) the strict endemic Moroccan taxa. The analysis of the extinction risk revealed that *Verbascum* taxa in Morocco can be classified into five threat categories, as follows: 17 taxa Critically Endangered (CR), 10 taxa Endangered (EN), 3 taxa Vulnerable (VU), one taxon Least Concern (LC) and one taxon Non-Applicable (NA).

In sum, this study aligns with the focus of the comprehensive project on the ongoing revision of the Vascular Flora of Morocco (Fennane et al. 1999, 2007, 2014). The

biogeographical data analysis here provides new data on a poorly known genus from the southern shores of the Mediterranean basin. The presence of numerous localized and endemic taxa, along with the application of the IUCN Red List's recommendations, provides significant knowledge that can steer conservation planning initiatives at both national and regional levels. Furthermore, the present research suggests that the genus *Verbascum* can be a useful botanical model for examining diversity and speciation patterns in the western Mediterranean basin, as well as the effects of climate change on biennial plants.

**Keywords:** Conservation, endemism, IUCN Red List, Scrophulariaceae, *Verbascum*, Morocco

# Determination of the Angular Accuracy When Setting Out the Centers of Bridge Piers

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**Abstract**

The article determines the angular accuracy when setting out the centers of bridge piers, based on a designed geodetic network where the location of the points on the shores is established to ensure the required setting out accuracy of all piers. Theoretical conclusions are carried out under the assumption that setting out of the piers is performed directly by linear-angular measurements from 2 reference points. Strict preliminary assessment is conducted on the accuracy of setting out the centers of bridge piers by measurements from 3 reference points.

**Keywords:** angular accuracy of setting out, bridge piers, horizontal network, reference points, straight intersection, linear-angular measurements.

# Fabrication and Performance Improvement of ZnO NRs Based Photodetectors via Localized Surface Plasmons Resonance Effects

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**Abstract**

In recent years, many efforts have been made to optimize the ultraviolet photodetectors due to their numerous field of applications. In this study the ZnO nanorods based p-n junction photodetectors were fabricated via hydrothermal growth method on p-type silicon wafers. Silver nanoparticles synthesized through chemical methods in solution were applied on top of photodetectors to enhance the performance of the detectors benefitting from plasmonic effect of metallic nanoparticles. The formation of the nanostructures were investigated by scanning electron microscope (SEM). Enhancement of the light absorption was observed in the photodetectors with metallic nanparticles in UV-Vis measurements. The I-V ( current-voltage) analysis were realized in dark and under UV illumination showed the increase in photocurrent.

**Keywords:** Plasmonic Effect, p-n Photodetectors, ZnO NRs, Ag Nanoparticles

# Future Challenges and Perspectives on the Integration of Artificial Intelligence in Albanian Education

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**Abstract**

The problems of education in Albania are diverse, including limited resources, curriculum improvement, quality of education, training of academic staff, inequality of opportunities, outdated technologies, ethical and social challenges. This article examines the complex landscape of artificial intelligence in the context of educational problems, focusing on practical applications, successful experiences, challenges, and prospects. Through a detailed analysis of best practices, the article identifies ways in which artificial intelligence can be effectively integrated to improve teaching/learning processes. At the same time, the challenges associated with its integration into education are examined, providing a critical perspective on emerging issues. Finally, the article focuses on future trends of artificial intelligence in education, suggesting possible developments in its application in this field. This topic is of interest to educators, teachers, students, policymakers, and all those interested in a conscious and effective approach to integrating artificial intelligence into educational contexts.

**Keywords**: Education in Albania, Artificial Intelligence, Future Challenges and Prospects

# Empowering Human-like Non-Player Character Interactions in Virtual Reality through Large Language Models

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**Abstract**

This research paper explores the integration of Large Language Models (LLMs) into Virtual Reality (VR) environments to enhance human-like interactions with non-Player Characters (NPCs) in professional training simulations. Current VR systems suffer from repetitive, scripted dialogues that lack naturalness and adaptability, which significantly reduce user engagement, immersion, and learning outcomes. To address these limitations, the study developed a proof-of-concept VR system utilizing state-of-the-art LLMs, including GPT-4, Claude 3.5, and LLaMA, evaluated through the Massive Multitask Language Understanding (MMLU) benchmark. The Agile methodology was employed to iteratively refine the system based on extensive user feedback, focusing on optimizing NPC interactions for contextual relevance, realism, and adaptability. Results demonstrated significant improvements in naturalness, user engagement, and context maintenance, with LLaMA-powered NPCs outperforming other models in user acceptance testing. These findings underscore the transformative potential of LLMs to revolutionize VR-based training by delivering dynamic, lifelike, and context-aware dialogues, paving the way for more advanced AI-driven immersive environments.

**:** Artificial Intelligence, Metaverse, GPT, Business Networking, Multitask Language Understanding (MMLU), Unity, LLaMA, Claude

# Atmosphere, weather, Climate can they be predicted? Why is this important?

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**Abstract**

Atmosphere is one the key elements of the nature and of earth, it is because of it that the all living and nonliving life is protected from UV radiation. Weather is the conditions of atmosphere over a short period influenced by the elements that are in atmosphere like air pressure, temperature, and wind speed, which create rain fall or snowfall. These elements can be measured by equipment like barometers, computers modeling. By doing so the weather forecast can predict climate. Because of relation especially to the ocean climate and the relation atmosphere-ocean and human behavior, all these are elements that help us to predict the weather.

When applying an urban project One of the focal points of the General Regulation Plan of the Territory for the Municipality of Vlora City is the study and prediction of climate and weather, in this case is done a Specific calculation of the level of rain in a long distance for the last 28 years by finding an exact coefficient of correlation between the reality and prediction from human factor.

This study put in point the correlation between weather prediction, environmental challenges and human importance of attention to the climate change.

**Keywords:** Atmospheric prediction, urban planning, climate adoption, metrological analysis.

# Artificial Intelligence (AI) and Reading fMRI Exams – Study of the Scientific Method

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**Abstract**

This presentation is related to the Universal Project, funded by the National Council for Scientific and Technological Development of Brazil, which has been studying the inferential processing of metaphorical language performed by congenitally blind individuals (vision loss by age 3) and by typically sighted individuals for the past two years. We used four levels of complexity of metaphorical sentences created from audio-described narratives specially prepared for blind individuals. The sentences were randomized with a similar number of non-metaphorical sentences, and the participant had to press a button indicating their decision on whether or not the sentence they heard was metaphorical. Before the experiments, there were two training sessions on the use and possible sensations inside the machine, as well as on what the linguistic stimuli used as input would be like. After collecting exams by FMRI in a 7Tesla machine, we identified two cases of blind individuals who, although they claimed not to have any comorbidity, presented brain anomalies. Both had pathologies that could hypothetically interfere with the results of metaphorical language processing and prevent us from adequately comparing the results of all participants involved, since the others did not present any type of visible comorbidity in brain formation.

The communication proposal that we will present arises from these two cases. The problem that arises is how a researcher can obtain a reliable report of fMRI exams without the intervention of a neuroradiologist, who, as a rule, at the Faculty of Medicine of the University of São Paulo, does not work on preparing medical reports for exams dedicated exclusively to research. So, the team had the idea of using two types of AI to read the two exams with anomalies. At the same time, the team provided a non-medical study of the

morphological results presented using only technical knowledge of brain morphology, fMRI processing and linguistic complexity.

In this communication, we will discuss the results of this experiment and give details about all the previous data collection methodology, as well as the interpretations and conclusions we reached with this procedure that can help future research in the field of functional magnetic resonance imaging.

**Keywords:** fMRI, Medical Reports, AI, İİnterdisciplinary Studies.

# Leveraging AI for a Smarter and Sustainable Urban Planning

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**Abstract**

The rapid growth of digital technologies has resulted in the metaverse, a network of interconnected virtual environments that mirror real-world events. This developing digital world opens up unparalleled possibilities for urban planning, allowing architects, policymakers, and communities to explore, design, and revise cities in immersive, data-driven environments. The utilisation of digital twins—high-fidelity virtual representations of urban areas—in conjunction with simulation tools that enable real-time testing of infrastructure, environmental impact, and public engagement strategies.

By leveraging the metaverse, urban planners can create virtual prototypes of cities, where factors such as transportation systems, energy consumption, zoning regulations, and green infrastructure can be modeled and optimized before physical implementation resulting to more efficient urban designs and enhanced sustainability.

Nevertheless, there are drawbacks to using metaverse technologies in urban planning as well, including concerns about data privacy, obstacles to digital accessibility, and moral dilemmas with regard to fair participation. Notwithstanding these obstacles, the incorporation of the metaverse into urban planning is a paradigm change that could result in cities that are smarter, more resilient, and prepared for the future. Urban planners must responsibly traverse these new digital frontiers as this technology develops to make sure that both virtual and physical spaces meet the many demands of people throughout the world.

**Keywords:** Urban Planning, Metaverse, Digital Twins, City Planning

# Designing Of 264 Kw Solar Power System With Spotlight on tThe Weather Aand Location: Case Study of N'djamena City, Chad

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**Abstract**

The global shift towards renewable energy sources has positioned solar power as a cornerstone of sustainable energy solutions. Among the various renewable energy technologies, solar photovoltaic (PV) systems have gained significant traction due to their scalability, declining costs, and environmental benefits. Designing an efficient solar power system requires a meticulous approach that considers not only the technical specifications but also the environmental and geographical factors that influence system performance. This study investigates the design of a 264 kW PV solar power plant in N'djamena City, Chad. Considering Chad's ample solar resource throughout the year, a significant amount of renewable energy can be produced. The proposed PV plant comprises PV modules, inverters, AC and DC cables, AC boxes, a transformer, a data server, sensors, a display, and wireless internet connectivity. The design and parameter calculations are conducted using PVsyst and SketchUp software, as well as manual calculations. The annual energy yield of the plant was determined for various tilt angles. The optimal tilt angle of 15 degrees is expected to yield 485.72 MWh annually, resulting in an estimated 210,687 kg/year of avoided CO2 emissions.

**Keywords:** Power Plant, Renewable Energy, PVsyst, SketchUP

# Two-Level Architecture of Hybrid Control Systems with Behavioral Abstractions and AI Supervisor

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**Abstract**

The article considers two-level hybrid (discrete-continuous) control systems for complex and distributed objects. At the lower level, objects are described by hybrid automata and continuous differential equations, and at the upper level, control is performed using simplified models (abstractions). The so-called behavioral abstractions are used, the states of which are sequences of invariant sets through which the subsystem passes, and sequences of local regulators. These regulators are designed taking into account disturbances using game theory methods. This ensures that safety constraints are met, as well as the autonomy of lower-level subsystems, which are able to continue operating even without upper-level intervention (in the case of faults). The global control problem is reduced to finding trajectories in the discrete space states of the abstractions. The decision on the choice of certain local regulators is made using an AI supervisor, which takes into account the states through which the abstractions passed, the regulators used and the achieved quality. The proposed control architecture ensures a reduction in computational costs, guaranteed fulfillment of constraints under the influence of disturbances, as well as an increase in quality.

**Keywords**: Two-level Systems, Behavioral Abstractions, Supervisory Control, Game Theory, Hybrid Systems

# How to Create a Successful Technopark: Key Factors and Best Practices

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**Abstract**

Technoparks are specialized areas where innovative companies, research institutions, and educational institutions are concentrated, engaged in the development and application of new technologies. Typically, such parks are created to stimulate scientific and practical experience, attract investments, and serve as an ecosystem for the development of high-level technology and entrepreneurship.

The main idea of the technopark is to create favorable conditions for startups and scientific enterprises, where companies can operate with minimal administrative barriers, gain access to the necessary infrastructure, and interact with scientists and creators of new technologies.

Technology parks play an important role in the economy, stimulating innovation activity, creating new jobs, and helping to create new high-tech companies that can actively influence the economy and hold leading positions in the market, while increasing the competitiveness of the region or country as a whole.

Close cooperation with universities and research centers helps to train qualified specialists who can work in the technology industry. Similarly, high-tech companies developing in technoparks create new jobs, which helps to reduce unemployment and improve the standard of living in the region.

Technoparks facilitate knowledge exchange between different participants - researchers, entrepreneurs, investors. This allows us to accelerate the process of commercializing new technologies and implementing innovative solutions.

Creating conditions for close cooperation between scientific institutions and business allows us to accelerate the application of scientific work to industry and mass production.

For startups, technology parks offer unique opportunities for rapid growth and development. They provide access to the necessary infrastructure, which significantly reduces start-up costs for renting premises, purchasing equipment, and other aspects of doing business. Startups can also take advantage of technology park services such as consulting on business, marketing, legal aspects, and finance.

For scientific research, technoparks create a favorable atmosphere where scientists can work on projects, receive funding, and attract the attention of businesses to the results of

their research. In such conditions, the transition from fundamental science to the practical application of innovations is accelerated.

Thus, technoparks play a unifying role between science, business, and government, having a significant impact on innovative development and ensuring the creation of technologically advanced companies that can change both local and global markets.

**Keywords:** Technopark, Interactivity, Infrastructure, Start-up, Experience, Financing

# Applications of Generalized Pell Sequences on Matrices

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**Abstract**

Number sequences and matrices have been the focus of attention of mathematicians since ancient times. In this paper, Pell number sequences were studied with the help of matrices. This study started with the iteration correlations and Binet formulas of Pell, Pell Lucas and modified Pell number sequences. Then Pell $(K)$, Pell Lucas $(L)$, and modified Pell $(M)$ matrices which are generated with the terms of these number sequences has been defined with $2 \times 2$ size. Then the powers of Pell $(K)$ matrices of order $n$ has been produced. Afterward, the iterative correlations and Binet formulas of generalized $k$-Pell, number sequences has been mentioned. $n \times n$ sized $K_n$ matrice which is generating form of Pell $(K)$ matrix and $n \times n$ sized $B_n$ matrices which are generating matrices of $k$-Pell number sequences introduced. Some applications with these generating matrices has been made and found relations of these generating matrices with $K_n$ matrix. Also the terms of this number sequences calculated with the aid of the definitions and generating matrices of $k$-Pell number sequences.

**Keywords**: Pell, k-Pell, Number Sequence, Matrice.

# An Advanced Method for Classifying Froth Flotation Images Utilizing Attention and Reward Mechanisms to Address Visually Similar Classes

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**Abstract**

Accurate monitoring of the froth flotation process is essential in mineral processing, as it significantly influences mineral separation efficiency and operational performance. Conventional monitoring approaches, primarily based on manual visual analysis of froth images, are often inconsistent and subjective, compromising the reliability of the process. This research presents a robust image classification model for flotation images, addressing the challenge of distinguishing visually similar classes. The proposed approach integrates an EfficientNetB0 architecture, an attention mechanism, and a custom reward layer to enhance classification accuracy. EfficientNetB0 extracts fine-grained textures, shapes, and structural details from flotation images, while the attention mechanism selectively focuses on salient regions, preventing overemphasis on irrelevant patterns. Additionally, the reward layer adjusts class logits based on class importance and prediction confidence, improving key predictions and reducing overconfidence in ambiguous cases. The model was evaluated on a flotation dataset with four classes, three visually similar. Experimental results show significant improvements in precision, recall, and overall accuracy, achieving 96% accuracy, outperforming recent methods.

**Keywords**: Froth Flotation Monitoring, Froth Image Classification, Convolutional Neural Networks (CNNs), Attention Mechanism, Visually Similar Classes

# Process of Isolation and Characterization of Lycopene from Grapefruit

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**Abstract**

Lycopene is a natural organic compound that of a red colour and is notable for its antioxidant properties. Red pigment, simple molecular formula ($C_{40}H_{56}$), as a good antioxidant is beneficial for human health. Research indicates the positive properties of lycopene and its protective effect on the cardiovascular system; it reduces blood pressure, prevents the oxidation of LDL cholesterol, lipids, etc. This red carotenoid has a number of health effects resulting from its antioxidant effect. In this experimental research, lycopene was isolated by a simple procedure from red grapefruit. The solvents used for the isolation procedure are acetone and petroleum ether. The identification and characterization of lycopene was confirmed by FTIR, UV/Vis and TLC methods.

**Keywords:** Isolation, Lycopene, Grapefruit, FTIR

# Determination of Crocins in Saffron (*Crocus Sativus Linn., Iridaceae*)"

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**Abstract**

Natural apocarotenoids of saffron (*Crocus sativus Linn., Iridaceae*) crocins and crocetin have neuroprotective, cardioprotective, hepatoprotective, antidepressant, anticancer, and antidiabetic effects. Thus, experiments have shown that crocin is hydrolyzed to crocetin by gut microbiota enzymes, and crocetin is further converted into bioactive metabolites that enter the bloodstream, capable of overcoming the blood-brain barrier and providing a cerebroprotective effect.

The purpose of the study is to find the most effective express-method for determining the content of crocins in saffron samples.

Apocarotenoids were extracted with aqueous alcohol solutions. Thin layer chromatography (TLC) on different plates was used to separate the extract components. The best separation of crocins was observed on the "Armsorb" plates, RF.

The total content of crocins in extracts and fractions was determined by the spectral express-method using digentiobiosyl-crocetin molar extinction coefficient $\varepsilon=1.33\times10^5$ l/mol×cm, $\lambda_{max}=443$ nm.

Apocarotenoids were identified in five fractions: cis- and trans-digentiobiosyl-crocetins, monogentiobiosyl-crocetin, 1-β,D-glucopyranosyl-16-gentiobiosyl-crocetin, di-β,D-glucopyranosyl-crocetin, picrocrocin. Digentiobiosyl-crocetin concentration was the highest (29% of the total amount of apocarotenoids).

Unlike other methods for determining apocarotenoids in aqueous solutions and biological fluids: gas, liquid and high-performance thin layer chromatography (GC-MS, LC-MS/MS, HP-TLC), the proposed express-method is available, effective and has good analytical characteristics (determination degree and selectivity).

**Keywords:** Saffron, Apocarotenoids, Crocetin, Crocins, Thin Layer Chromatography.

# Extraction, content of total polyphenols and antioxidant potential of hibiscus (*Hibiscus sabdariffa*) using different solvents

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**Abstract**

The aim of this study was to determine the antioxidant activity, as well as the total phenolic and flavonoid content in Hibiscus (Hibiscus sabdariffa) extracts. Extraction of bioactive compounds was carried out using water, ethanol, methanol, and acetone as solvents. The phenolic content was quantified using the Folin-Ciocalteu method, while the flavonoid content was determined by the aluminum chloride colorimetric assay. Antioxidant activity was assessed using the DPPH method.

The results of the study showed that the hibiscus extracts obtained using a mixture of solvents and water contained significantly higher amounts of total phenols and flavonoids compared to the extracts obtained with pure solvents. The DPPH test demonstrated a high free radical scavenging capacity, which was particularly pronounced for the methanol extract.

A positive correlation was observed between the content of phenols, flavonoids, and antioxidant activity, confirming the crucial contribution of these compounds to the biological activity of hibiscus. Based on the obtained results, it can be concluded that hibiscus is a promising source of natural antioxidants, with potential applications in the food, pharmaceutical, and cosmetic industries.

**Keywords:** Extraction, Content of Total Polyphenols, Antioxidant Potential, DPPH, Hibiscus Sabdariffa

# Analysis of Polyphenol Content and Antioxidant Capacity of Aqueous Extracts of Commercial Sage (Salvia officinalis L.)

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**Abstract**

Sage (Salvia officinalis L.) is a perennial, evergreen semi-shrub native to the Mediterranean region. It is considered one of the most important medicinal plants and is renowned for its antibacterial properties. In addition to its therapeutic benefits, sage is rich in polyphenolic compounds, which has led to its widespread use in traditional medicine for various health benefits, including the enhancement of digestive health, improvement of cognitive function, and the mitigation of oxidative stress.

This study investigated the polyphenol content and antioxidant activity of three commercial sage samples purchased from a market in Tuzla. Two of the tested samples originated from Bosnia and Herzegovina, and one sample came from Croatia. The results indicated that all sage samples contained approximately the same concentration of polyphenols, suggesting that the geographical origin of the plant does not significantly affect its polyphenol content.

One extract, prepared from a domestic sage sample (Bosnia and Herzegovina), exhibited significantly higher antioxidant capacity compared to the other two extracts. This suggests that, despite similar polyphenol concentrations, the antioxidant activity may be influenced by other factors, such as the specific composition of polyphenols or the presence of other bioactive compounds in the sage samples.

This research highlights the potential of sage as a source of antioxidants, with varying antioxidant capacities among different samples, even when polyphenol content is similar. Further studies may be necessary to explore the underlying factors contributing to these differences in antioxidant activity and to assess the full therapeutic potential of sage in combating oxidative stress and associated health issues.

**Keywords:** Sage, FRAP, DPPH, Polyphenols, Antioxidants, Polyphenols

# Enhanced CT Imaging Using Super-Resolution Generative Adversarial Networks for Improved Diagnostic Accuracy

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**Abstract**

Enhancement of medical images is vital for diagnostic accuracy, particularly in CT imaging, where high-resolution reconstructions are essential. Super-Resolution Generative Adversarial Networks (SRGANs) address low-resolution (LR) limitations by generating high-resolution (HR) outputs with preserved diagnostic details. This research introduces an enhanced SRGAN framework for CT reconstruction, aiming to improve resolution, reduce noise, and enhance clarity for better diagnostic accuracy and reduced interpretation variability.Our approach features: (1) a high-capacity Residual-in-Residual Dense Block (RRDB) generator with learnable attention mechanisms; (2) a relativistic discriminator stabilized via spectral normalization and gradient penalty; and (3) a hybrid loss combining perceptual VGG-19 features, L1 loss, and adversarial loss, optimized for CT imaging.Evaluated on LiTS17, IRCADb 3D, and MSD datasets (7,585 CT scans). our model achieves a PSNR of 35 dB and SSIM of 0.96 using progressive upsampling (4×). Results demonstrate high-quality image generation with preserved diagnostic integrity, especially in low-dose CT. The efficient, GPU-optimized design underscores its potential for real-world clinical deployment, advancing medical imaging quality and diagnostic utility.

**Keywords:** Medical Image Enhancement, Super-Resolution Generative Adversarial Networks (SRGANs), Residual-in-Residual Dense Block (RRDB), Low-Dose CT Image.

# Investigation of the Geometric Design of the Uhbp Fan Blade Profile of Advanced Turbomachinery

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**Abstract**

This study investigates the geometric design of the Ultra-High-Bypass (UHBP) fan blade profile for advanced turbomachinery operating under supersonic flow conditions. The primary objective is to optimize the blade profile to minimize aerodynamic resistance while maximizing mechanical strength, crucial for durability and reliability under high load and speed conditions. A theoretical framework is developed, highlighting the importance of precise inlet and outlet angles to minimize shock wave impacts and ensure uniform pressure and temperature distribution along the blade. Furthermore, the curvature of the midline is optimized to manage shock waves, direct flow effectively, and reduce wave losses. The blade thickness is strategically varied across its profile, reducing it at the leading edge to minimize losses from shock waves, while increasing it at the trailing edge and midsection to enhance strength and resistance to loads.

The aerodynamic investigation is divided into two stages: first, generating the blade profile geometry based on empirical data, using MATLAB code; second, analyzing the aerodynamic performance using flow simulations in ANSYS Fluent to assess pressure distribution and minimize turbulence and shock waves.

**Keywords**: UHBP Fan Blade, ANSYS Fluent, Blade Thickness, Supersonic Aerodynamic Profile

# Walrus Optimization Algorithm (WaOA)-based Load Frequency Control in Multi-area Interconnected Power System

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**Abstract**

The imbalance between generated power and load demand often causes undesirable fluctuations in system frequency and tie-line power. To address this issue, load frequency control (LFC) is essential. This study introduces a nature-inspired optimization technique called the Walrus Optimization Algorithm (WaOA) and explores its application in optimizing the parameters of a Proportional-Integral-Derivative with filter N (PIDN) controller for a multi-area interconnected power system. The effectiveness of the WaOA-optimized PIDN controller is evaluated and compared with other optimization techniques, including Genetic Algorithm (GA), White Shark Optimizer (WSO), and Whale Optimization Algorithm (WOA), under step load perturbation (SLP). The results reveal that WaOA achieves faster convergence, with an Integral of Time-weighted Absolute Error (ITAE) value of 0.3641, outperforming WOA, WSO, and GA, which yield ITAE values of 0.3972, 0.4806, and 0.5086, respectively. This demonstrates that WaOA improves ITAE by 8.33%, 24.24%, and 28.41% compared to WOA, WSO, and GA, highlighting its superior performance in optimizing LFC.

**Keywords:** Walrus Optimization Algorithm, Integral of Time-weighted Absolute Error, Load Frequency Control, Interconnetced Power System.

# Analysis of DFIG-Based Wind Turbines with Superconducting Fault Current Limiter Operation

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**Abstract**

This paper analyzes the performance of Doubly-Fed Induction Generator (DFIG)-based wind turbines integrated with Superconducting Fault Current Limiters (SFCLs) to enhance Fault Ride-Through (FRT) capabilities. DFIG-based wind turbines, while offering advantages in power control and adaptability, are vulnerable to grid faults which can cause excessive rotor currents and damage the Rotor Side Converter (RSC). Traditional Fault Ride-Through (FRT) solutions, such as crowbar system, have limitations, including increased reactive power consumption and reduced grid voltage support. In this study, we explore the integration of Superconducting Fault Current Limiters (SFCLs) as an alternative approach to enhance the FRT capability of DFIG-based wind turbines. The performance of DFIG-based wind turbines with SFCL implementation is analyzed through simulations in MATLAB/Simulink. The study examines the impact of SFCL on rotor and stator currents, as well as voltage dips under fault conditions, considering different resistance values for comparison. The results aim to demonstrate the potential benefits of SFCLs in enhancing the stability and resilience of wind energy systems, contributing to the reliability of future renewable energy grids.

**Keywords:** Wind Turbine, Doubly-Fed Induction Generator, Superconducting Fault Current Limiter, Fault Ride-Through, Crowbar.

# Methylene Blue (MB) Loaded ZIF-8 Synthesis, Characterization and Investigation of Photodynamic Therapy Activity on Breast Cancer

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**Abstract**

Conventional methods for breast cancer diagnosis and treatment often present limitations, including drug resistance, toxic side effects, metastasis, and the potential for relapse. This necessitates the development of innovative strategies for early detection and enhanced therapeutic interventions. In this context, photodynamic diagnosis and therapy have emerged as promising approaches in recent years.This study aims to explore the use of Metal-Organic Frameworks to incorporate Methylene Blue in photodynamic therapy for breast cancer treatment. The cytotoxic effects of a nanodelivery system using methylene blue were evaluated on MDA-MB-231 and MCF-7 breast cancer cell lines. ZIF-8 was expected to contribute an additional therapeutic benefit besides photodynamic therapy by cleaving zinc and releasing it into cells. Furthermore, the study was assessed the combined effects of multiple cytotoxic components within a single nanoparticle. These next-generation nanocarriers are engineered to selectively release methylene blue within cancer cells under low pH conditions. This targeted delivery minimizes harm to healthy tissues and improves the overall quality of the treatment process. By combining the benefits of photodynamic therapy with a targeted drug delivery system, this research hopes to provide a more effective and less harmful treatment approach for breast cancer.

**Keywords**: Methylene Blue, ZIF-8, Photodynamic Therapy, Breast Cancer

# Using Digital "Control" Technologies to Improve the Performance of Oil and Gas Extraction Facilities

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**Abstract**

The oil and gas industry is on the brink of a digital revolution. Changes in supply and demand, reducing costs and carbon emissions, while improving the reliability and availability of private assets, remaining competitive, increasing attention to processes in the global economy and environmental sustainability are driving oil and gas organizations to use digital technologies to improve their current economic operating models and make them more efficient. has done International organizations recognize digitization as a key tool for realizing these goals. Advances in key technologies such as data analytics, artificial intelligence (AI), cloud computing and blockchain are opening up vast opportunities for optimizing, automating and streamlining processes, asset "tracking" and data management in the oil and gas industry.

**Keywords:** Oil, Gas, Digital Technology, Green Energy, Environment, Industry, Resources

# Health Sciences

# Exploring the Effect of Oral Exam Stress on Physiological Parameters in Students: Insights from Smart Bracelet Monitoring – A Pilot Study

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**Abstract**

Stress is any internal or external stimulus that causes a biological response and occurs when that stimulus overwhelms a person's ability to adapt. Chronic stress leads to long-term health consequences, such as a higher risk of cardiovascular disease and metabolic disorders.

This study aimed to determine the changes in physiological parameters (heart rate, blood pressure, and blood glucose levels) in students during oral examinations. Data on these parameters were collected using smart bracelets worn by the participants during oral exams and at rest.

The study involved 35 first-year students of the Professional Physiotherapy Program (23 women and 12 men). The average resting heart rate was 78.97 bpm and 101.28 bpm during the exam. Blood pressure readings at rest were 113.06/76.37 mmHg, compared to 121.439/79.6 mmHg during the exam. Blood glucose levels ranged from 5.89 mmol/L at rest to 6.50 mmol/L during the test.

The results of this study show a statistically significant increase in measured values during the oral examination, indicating a clear physiological response to the oral examination as an acutely stressful experience for students. Studying physiological parameters helps to understand students' reactions to stressful situations. With this knowledge, it is possible to develop intervention strategies and therapeutic methods to maintain health and prevent illness.

**Keywords:** Blood Glucose, Blood Pressure, Heart Rate, Stress, Students

# The Importance of Evaluating the Degree Satisfaction of Hospitalized Patients

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**Abstract**

**The purpose of the study**

Evaluation of the hospitalized patients degree satisfaction, regarding to the hotel conditions and the quality of medical services and care.

**Working method**: qualitative study (questionnaire), evaluating the opinion of 289 patients, hospitalized between January and December 2024 in the Pneumology Hospital of Sibiu.

**Results**

The patients who answered the questions are predominantly from rural areas, are more often male and mainly aged between 50-79 years.

**Conclusions**

Patients are satisfied with the way they were admitted in the hospital and the way their health problems, diagnosis and treatment were communicated to them by the attending physician.

Patients received all the necessary medication for the treatment from the hospital. They were satisfied with their relationship with the medical staff, who offered them a climate of trust and safety during the hospitalization.

Finally, they were asked to rate the quality of medical services and care. Thus, the overwhelming majority gave only qualifications of "very good" and "good" for all medical personnel, the best qualifications being in descending order for doctors, nurses and cleaners.

Most of the patients declared that they would return to the hospital if they needed to.

**Keywords**: Hospitalized Patients, Patient's Opinion, Degree of Satisfaction

# Anatomy of Speech

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**Abstract**

Speech is the process by which sound vibrations generated in the larynx gain meaning through resonance and articulation in the subsequent sections. The act of producing sound occurs after sensory inputs from the environment are processed in the brain.

The sense of hearing originates from the inner ear, vision from cone cells in the retina, and taste, smell, touch, and proprioception from respective receptors. These signals are first transmitted to the Wernicke's area, where interpretation, recognition, understanding, memory recording, and evaluation occur. Then, to generate a motor response, the information is sent to Broca's speech center.

Once instructions from the Broca's area reach the motor centers, speech is prepared. The axons of these motor cortical neurons connect to the second-order neurons, which, as relevant cranial nerves, reach the tongue, lips, palate, cheeks, jaw, larynx, and respiratory muscles. Consequently, the expiration of respiratory air, combined with the activity of phonatory and articulatory muscles, produces speech.

The production of human voice requires an energy source and a vibrating structure. The energy source is the moving, pressurized respiratory air from the lungs, while the vibrating structure is the vocal cords in the larynx.

These complex mechanisms of sound production are under the integrative control of the central nervous system. Efferent signals from areas and organs involved in producing sound—such as the mouth, jaw, pharynx, larynx, lungs, abdomen, back muscles, ligaments, joints, and superficial mucosal receptors—are evaluated by the central nervous system. Commands are then issued to ensure the necessary muscle tension is achieved for the production of the most appropriate sound.

**Keywords:** Speech, Voice, Anatomy

# Is Bilateral Block Necessary in Spinal Anesthesia?

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**Abstract**

Anesthesia practices are tailored based on the patient's age, gender, general health condition, and the type of procedure planned. In patients receiving spinal anesthesia, better hemodynamic stability can often be achieved compared to those undergoing general anesthesia. Prehydration performed before spinal anesthesia reduces complications associated with the procedure and facilitates easier maintenance of hemodynamic balance.

Spinal anesthesia is administered by injecting a local anesthetic into the subarachnoid space. Using a small amount of local anesthetic effectively blocks all sensations in the lower part of the body. This procedure is typically performed below the level where the spinal cord ends.

Unilateral spinal block is applied to achieve one-sided distribution of the anesthetic agent in the subarachnoid space. Bilateral spinal block, on the other hand, ensures symmetrical distribution of the drug within the subarachnoid area.

With unilateral spinal block, hemodynamic effects such as systemic hypotension and cardiovascular instability are less common. By providing anesthesia specific to the surgical side, a more effective approach can be achieved. The preservation of sensory and motor functions on the non-surgical side contributes to faster recovery during the postoperative period.

**Keywords:** Spinal Anesthesia, Unilateral, Bilateral

# Explaining the Perceptions and Fear of Tooth Extraction: A Qualitative Study

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**Abstract**

**Aim**: Tooth extraction fear can significantly impact a patient's oral, general, and mental health. This study aims to explain the perceptions and fear of tooth extraction.

**Methods:** The present study was a qualitative study of Content analysis. sampling was conducted purposively and heterogeneously, the target population of the study was those who visited a dental clinic for tooth extraction.

In this study, a semi-structured interview was used to collect data. The tool used in this study was an interview guide designed and developed by the researchers.

All interviews were conducted individually and face to face by one person; each interview lasted approximately 15 to 20 minutes; All the answers of the participants were recorded and at the same time with the consent of the interviewee, which was obtained from him in advance in the form of a written informed consent.

**Results**: One of the identified components is Gender and environmental factors in dental fear. two categories were identified under this theme: female admission of fear, male reluctance to admit fear. "Psychological responses" with three subcategories of "fear" and "pain", "worry" were other components of the study.

The category of "physical disorders" with subcategories of "heart palpitations", "dry mouth" and "shortness of breath" and the category of "environmental factors", with subcategories of "bad experiences of those around them", "fear of the dental environment" indentifed.

**Conclusion**: The results of such studies can help to design interventions to reduce stress and moderate the stimuli that increase fear of tooth extraction.

**Keywords:** Fear, Tooth Extraction, Qualitative Study

# Mass Spectrometry of Human Brain Gangliosides in Health and Disease

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**Abstract**

Gangliosides (GGs) represent a class of glycosphingolipids, highly expressed in the central nervous system (CNS) where they are involved in vital biological functions of the brain. Hence, GGs are valuable indicators in the early diagnosis of CNS pathologies, being in the focus of our research as potential biomarkers and/or therapeutic targets.

In this context, we report here on the development of a novel, high performance nanoelectrospray ionization (nanoESI) ion mobility separation (IMS) mass spectrometry (MS) and tandem MS (MS/MS) by collision-induced dissociation (CID) approach for glycolipidomics of CNS GGs. The methodology was systematically implemented for: i) screening and structural characterization of GGs expressed in different normal adult and fetal brain regions such as the frontal lobe, hippocampus, and cerebellum; ii) GG biomarker discovery in malignant primary (melanoma, glioblastoma multiforme) and secondary (lung

adenocarcinoma) tumors and iii) GG profiling in human cerebrospinal fluid. IMS MS represents also a novel concept in structural analysis of GG biomarkers, due to its unique ability to separate isomers, isobars and conformers. The conducted studies have shown that the modified expression together with the observed overexpression of certain glycolipids in human patient biopsies as compared to healthy controls, have the potential to serve for disease diagnosis.

**Keywords:** Ion Mobility Separation Mass Spectrometry; Ganglioside Biomarkers; Screening and Structural Characterization; Healthy and Malignant Human Tissue; Cerebrospinal Fluid.

# Legal Responsibility of Professionals in the Filed of Pharmacovigilance

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**Abstract**

Discussing the benefits of drug therapy is redundant in the context of the continuous modernization of diagnostic and treatment methods.

However, monitoring drug safety, viewed as a complex process, throughout the entire period of their use, is an essential premise to ensure that patients can access the treatments they need without being exposed to unacceptable side effects.

From this perspective, the field of pharmacovigilance has been designed, with its defining feature being the continuous monitoring of the risk-benefit balance of medicines and the adoption of the necessary measures to prevent possible adverse reactions.

This study aims to identify the national and European legal framework, to analyze the responsibilities of professionals in the field of pharmacovigilance, as well as the legal consequences arising from their failure to comply with legal obligations.

Essentially, only appropriate regulation combined with the awareness of pharmaceutical professionals regarding the reporting of adverse reactions, can achieve the goal of effectively protecting public health.

**Keywords:** Pharmacovigilance, Regulation, Legal Responsibility, Obligations, Professionals

# Microbiological Safety of Baby and Dietary Foods

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**Abstract**

The microbiological integrity of food is an important factor in ensuring the health safety of food. Microbiological contamination is often the cause of acute foodborne illnesses. The aim of the conducted research is to analyze the microbiological safety of infant and other dietary foods in the Republic of Srpska. In order to monitor microbiological quality, 122 samples of baby food and dietary foods were analyzed in **2021** at the Public Health Institute of the Republic of Srpska, while in **2022**, that number was 88. In 2021, a total of 122 samples were analyzed, all of which were tested for the presence of *Listeria monocytogenes*. Also, 41 samples were tested for the presence of *Salmonella*, while 2 samples were tested for the presence of *Enterobacteriaceae*. In 2022, 88 samples were examined, of which 87 were tested for the presence of *Listeria monocytogenes*, 31 samples for the presence of *Salmonella*, 2 samples for *Enterobacteriaceae*, 1 sample for yeasts and molds, and 1 for *Staphylococci*. The results showed that all samples were microbiologically correct, with no signs of contamination. Continuous control of the microbiological correctness of food is necessary and of great importance for the protection of the health of the population.

**Keywords:** Food Safety, Baby Food, Dietary Foods

# Patulin as A Potential Risk in Children's Food

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**Abstract**

Patulin, a secondary metabolite produced by molds, primarily *Penicillium*, *Aspergillus*, and *Byssochlamys*, is classified as a mycotoxin. It is a well-known food contaminant, associated with negative effects on the immune, neurological and gastrointestinal systems. As an enteropathogenic mycotoxin, patulin can disrupt intestinal function. The method for determining patulin is outlined in AOAC method 995.10. In this method, patulin is extracted three times with ethyl acetate, then purified with a sodium carbonate solution. After the organic solvent is evaporated, patulin is quantified using a C-18 reverse phase column with UV detection. A total of 19 baby fruit juice samples were analyzed. Patulin was detected in average concentrations below **10 µg/kg**. The maximum recorded amount of patulin was 3,3 µg/kg. None of the 19 juice samples had a patulin levels above 10 µg/kg, meaning all the samples comply with the legal requirements for patulin levels. The safety rating of the tested samples was determined by comparing the results with the maximum permitted levels established by the legislation in the Republic of Srpska. To protect health, it is important to monitor exposure to patulin in the population.

**Keywords:** Patulin, Baby Juices

# PIK3CA Mutation Analysis in Breast Cancer Patients by HRM-COLD-PCR

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**Abstract**

**Background:** Deregulation of the PI3K/AKT/mTOR pathway through PIK3CA mutation is frequent in different tumors. Therefore it is important to identify hotspot mutation at exons 9 and 20 in breast cancer Tunisian patients.

**Methods:** Tumor tissues were collected from Tunisian patient with breast cancer and analyzed (42 sporadic cases and 21 hereditary cases) to screening Hotspot mutations of the *PIK3CA* gene by QPCR-High Resolution Melting followed by COLD-PCR and sequencing. HRM experiments were used MCF7 and BT20 breast cancer cell lines as controls harboring the PIK3CA hotspot mutations E545K and H1047R in exon 9 and exon 20 respectively.

**Results:** PIK3CA hotspot mutations were detected in 66.7% of sporadic BC cases, and in 14.3% of hereditary BC. The E545K and the H1048Y were the most common mutations identified in our patients, whereas the H1047R hotspot mutation was not found. Statistical analysis showed that PIK3CA mutation associated with an aggressive behavior in sporadic BC patients, while it's correlated with age, tumor stage and tumor size in hereditary BC patients.

**Conclusions:** Our results showed a novel PIK3CA hotspot mutation in Tunisian breast cancer patients detected by HRM-COLD-PCR. Additionally, the absence of PIK3CA hotspot mutation associated with good prognosis.

**Keywords:** Breast Cancer, COLD-PCR, HRM, Novel Hot-spot Mutations, PIK3CA Gene

# Integrative Management of Tibial Plateau Fracture and Medial Gonarthrosis with High Tibial Open Wedge Osteotomy: A Comprehensive Case Study

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**Abstract**

Post-traumatic knee osteoarthritis (PTOA) is a significant long-term complication of tibial plateau fractures (TPFs), leading to joint degeneration and impairment. This study presents a comprehensive case analysis of a 72-year-old male diagnosed with a Schatzker Type VI tibial plateau fracture after a high energy trauma, managed through a staged surgical approach. Initial open reduction and internal fixation (ORIF), achieved fracture alignment, leaving a residual varus deformity, accelerating medial compartment degeneration. The patient developed progressive pain, restricted mobility, and radiographic signs of osteoarthritis within six months post-ORIF.

A high tibial open wedge osteotomy (OWHTO) was performed to correct varus malalignment, redistribute mechanical loads, and delay the need for total knee arthroplasty (TKA). Preoperative radiographs determined a correction angle for biomechanical restoration. The osteotomy was stabilized using a TomoFix locking plate, and rehabilitation followed a structured weight-bearing protocol. At the three-year follow-up, the patient showed pain relief, functional recovery, and joint stability, returning to daily activities with minimal limitations.

This study shows the critical role of OWHTO in managing post-traumatic gonarthrosis, as a joint-preserving alternative to early TKA. It explores biomechanical principles, surgical considerations, and rehabilitation strategies advocating for staged interventions in complex knee trauma to optimize long-term function.

**Keywords:** Tibial Plateau Fracture, Post-traumatic Osteoarthritis, High Tibial Open-Wedge Osteotomy, Varus Deformity, Knee Biomechanics, Joint Preservation

# Determination of Lipocalin 2 and Lipocalin 13 balance before and after Laparoscopic Sleeve Gastrectomy

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**Abstract**

Objectives: This study aims to determine Lipocalin 2 and Lipocalin 13 levels in the blood and tissue samples of patients who underwent laparoscopic sleeve gastrectomy and how it changes before and after one year of the surgery.

Method: Lipocalin 2 and Lipocalin 13 levels were obtained and then assessed from samples taken from 30 morbidly obese patients with a BMI over 40 .Samples were collected from blood after an 8-hour fasting on the morning of the laparoscopic sleeve gastrectomy operation, at the fat tissue taken perioperatively from around the gastric fundus, and from the blood samples taken after an 8-hour fasting at the end of 1 year post-operatively.

Results: While Lipocalin 2 and Lipocalin 13 values were close to each other in the healthy group, an increase in Lipocalin 13 was observed in obese patients. After LSG(Laparoscopic Sleeve Gastrectomy), Lipocalin 2 and Lipocalin 13 levels were found to be close to each other. Lipocalin 2 was found to be lower in the healthy group than in the obese group, but no statistically significant difference was obtained.

Results: While BMI and HOMA-IR values were low in the healthy group, they are increased in the obese. It was concluded that as the balance between Lipocalin 2 and Lipocalin 13 is broken, BMI and HOMA-IR values also increase.

**Keywords:** Obesity, sleeve gastrectomy, Lipocalin 2, Lipocalin 13

# Determination of Some Trace Metal Levels in Cheese Samples by ICP-MS•

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**Abstract**

In the study, 51 cheese samples obtained from local producers and markets around Iskenderun were examined in terms of aluminum (Al), nickel (Ni), copper (Cu) and tin (Sn) heavy metals and it was aimed to reveal possible public health risks. These trace elements have an important place due to their relationship with environmental pollution, milking, tools and equipment used in dairy production and packaging materials.

In cheese samples, the presence of heavy metals Al, Ni, Cu and Sn were determined using an Inductively Coupled Plasma Mass Spectrometer (ICP-MS) device. In all cheese samples (51/51), the mean Al was 9.54 ppm (1.37-18.4), Ni was 760.83 ppb (142.96-2036.28), Cu was 524.95 ppb (130.59-1919.25) and Sn was 38,98 ppb (1,02-92,85).

Samples sourced from local producers and markets are produced in small dairies or on the farm, using different equipment of variable quality. The release of metals from cheese containers is significant. Therefore, cheese containers should not contain these toxic metals, and the use of appropriate equipment and materials should be ensured. The results of the study suggest that the presence of contamination due to the tools-equipment used during production may pose a public health risk.

**Keywords:** Cheese, Trace Metals, ICP-MS, Public Health

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# What is the Safety Situation of the Retromolar Bone Harvesting Procedure

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**Abstract**

Introduction: This study evaluated the mandibular canal's position by age and sex using 100 CBCT scans, focusing on its relationship with molar roots and the external cortex to identify a safe zone for retro-molar bone harvesting. The results: indicated that males and younger individuals have greater bone thickness and depth. The most secure area for bone harvesting is at the transition zone, where the mandibular canal is deeper and closer to the lingual cortex. Concludion:These findings define a safe harvesting zone, but a larger sample size could potentially alter the results.

**Keywords:** Mandibular Canal, CBCT, Mandibular Molar, Lingual Cortex, Retro Molar Bone

# An Overview of Tissue Adhesives and Biomimetic Adhesives

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**Abstract**

Tissue repair and wound closure processes have evolved throughout human history with the use of various natural and artificial adhesives. In this study, the use of tissue adhesives and biomimetic adhesives in surgical applications was investigated. The focus is on tissue adhesives, particularly natural polymers such as fibrin, gelatin and albumin, and synthetic polymers such as cyanoacrylate, polyethylene glycol (PEG) and polyurethane (PU). While these adhesives offer advantages such as ensuring tissue integrity, stopping bleeding and accelerating wound healing, they also bring some disadvantages. Biomimetic adhesives, on the other hand, are environmentally friendly and biocompatible alternatives inspired by nature and provide effective adhesion, especially in humid and underwater environments. The adhesion mechanisms of creatures such as the marine sandworm, mussel, Australian toad and gecko have inspired the design of these adhesives. The study concluded that tissue adhesives are more advantageous for short-term surgical needs, while biomimetic adhesives are promising for long-term and innovative solutions. Both types of adhesives offer significant advantages in their respective application areas and the right choice depends on the application requirements and targeted performance.

**Keywords :** Tissue Adhesives, Biomimetic Adhesives, Adhesive

# A Comprehensive Overview of Hernias in Veterinary Surgery

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**Abstract**

This study provides a detailed evaluation of hernias commonly observed in small animals within veterinary surgery. A hernia occurs when an organ or tissue protrudes through its natural anatomical boundaries into a surrounding cavity, often associated with weakness in muscle or connective tissues. Hernias can be classified based on their etiology (genetic or traumatic), anatomical location (inguinal, umbilical, or perineal), and complication status. Clinical symptoms include swelling, pain, loss of appetite, vomiting, and respiratory distress. Diagnosis is performed using various methods such as physical examination, ultrasonography, radiography, and endoscopy. Treatment is generally achieved through surgical repair. The main treatment options include open surgery, laparoscopic surgery, and the application of mesh implants. Meshes are particularly used to provide structural support in large or complicated hernias. Minimally invasive surgical techniques are favored for their shorter recovery periods and lower risk of complications. Treatment approaches vary depending on the type of hernia; for instance, small umbilical hernias may resolve spontaneously, while diaphragmatic hernias require urgent surgical intervention.

This study comprehensively examines the etiology, classification, clinical findings, diagnostic methods, and treatment approaches for hernias in veterinary medicine.

**Keywords:** Hernia, Rupture, Veterinary Surgery, Surgical Repair, Diagnostic Methods

# Policysttic Ovary Syndrome - What do Women in Poland Know about It?"

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**Abstract**

**Introduction:** Polycystic ovary syndrome (PCOS) is a multisystem disorder characterized by reproductive dysfunction as well as metabolic disturbances. This condition most commonly occurs in women during adolescence and reproductive age. It is estimated to affect 4-12% of women of reproductive age.

**Aim of the Study:** Assessment of the level of knowledge among polish women regarding polycystic ovary syndrome.

**Research Methods and Tools:** The research method used was a diagnostic survey, with a questionnaire as the technique. The research tool applied was an original questionnaire designed by the author.

**Results and Conclusions:**

1. The level of knowledge among women with polycystic ovary syndrome was average (51.40%).

2. Younger women had a higher level of knowledge than older women ($p>0.05$).

3. Education level did not affect the level of knowledge about polycystic ovary syndrome.

4. No correlation was found between marital status and the level of knowledge about polycystic ovary syndrome.

5. Place of residence did not differentiate the level of knowledge about polycystic ovary syndrome ($p>0.05$).

6. Women suffering from polycystic ovary syndrome had a higher level of knowledge about the disease than healthy women.

**Keywords:** Polycystic Ovaries, Health Behaviors, Knowledge, PCOS

# The Role of the Nurse in the Reduction of the Pre-operative Stress of the Patients Qualify for the Surgery

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**Abstract**

Stress constantly appears in people's lives. Illness, and the associated need for surgical intervention, is a difficult, often unexpected situation for the patient, causing anxiety. The patient often feels lost, needs information, fears the course of anaesthesia and the procedure itself. Assessing the significance of a situation or event and the person's ability to cope with its consequences plays a significant role in the emergence of stress. A stressful situation disrupts thinking, activities or makes it difficult to fulfil needs. A stay in hospital is usually associated with reduced privacy, as well as a temporary separation from one's home environment. Waiting for anaesthesia and surgery causes considerable emotional strain. The stress accompanying the patient may be related to their personality, age, gender or previous experiences, as well as the type of anaesthesia planned and the kind of surgery. Therefore, an extremely important part of the patient's preparation is a conversation and a detailed explanation of any issues of interest to the patient. The mental preparation of the patient for the procedure is important and should not be overlooked. Obtaining reliable information from the staff allows the patient to understand the purpose of the procedures and the principles of pre-operative preparation.

**Keywords:** Nursing, Surgery, Anaesthesia, Patient, Preoperative Stress

# Radiotherapy-Induced Thyroid Dysfunction

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**Abstract**

Introduction: The most common malignancy among Albanian women is carcinoma of the breast. There is an increased incidence of hypothyroidism (HT) among BC patients after RT involving the SCLN area. The aim of our prospective study is to evaluate the effects of radiotherapy on thyroid function in 100 breast cancer patients, comparing those treated only only on chest wall with those who also received supraclavicular (SC) nodal irradiation.

Material and Methods: This is a single institute prospective study ($n$ = 100). The blood samples were drawn before radiotherapy and evaluated by measuring the serum thyroid stimulating hormone (TSH), free triiodothyronine (fT3) and free thyroxine (fT4) levels. None of the women were on thyroid substitution therapy. The thyroid function both of the TSH, fT3 and fT4 levels were monitored in patients every 6 months after the completion of radiation.

Results: Results revealed a significant impact on thyroid function, particularly an increased incidence of hypothyroidism in the SC irradiation group. The study reported that after six months of radiotherapy, 35% of patients developed hypothyroidism, while this figure decreased to 27% after twelve months. This suggests that while many patients may experience immediate thyroid dysfunction following radiotherapy, some may recover over time, though a substantial portion remains affected.

Conclusions: The data presented highlights a concerning trend of increased hypothyroidism among breast cancer patients undergoing radiotherapy, particularly those receiving SCV irradiation. The study's findings indicate that a substantial proportion of patients may experience lasting thyroid dysfunction, necessitating vigilant monitoring and management.

**Keywords:** Breast Cancer, Radiotherapy, Thyroid Disorder, Supraclavicular