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ABSTRACT BOOK

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Bridging Gender Gaps in Livestock System: Impact of Community-Based Training on Women's Capacity in Small Ruminant Production and Marketing in Ethiopia

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Dr. Mamusha Lemma
ILRI, Ethiopia

Abstract

This study conductedted to identify the barriers in which women face in accessing services and markets and to assess the potential of community-based dialogue for promoting gender equality and improving livestock development outcomes. Implementation of Community Conversations under the CGIAR Research Program on Livestock, use of a gender-transformative approach to foster dialogue between men and women and collected before and after the intervention data from both participant and non-participant male and female farmers. The intervention increased community awareness of women's contributions to livestock feed, health, and marketing. Stimulated collective actions that improved women's access to services and decision-making, reduced labor burdens, expanded women's market participation, women engagement in adopting livestock innovations and community-based dialogue proved effective for advancing gender equality while strengthening livestock outcomes. The findings are context-specific and may not be universally generalize and sustained community engagement is necessary to consolidate gender equality gains. Community-based dialogue can be applied as a tool for promoting inclusive practices, enhancing women's participation in livestock value chains and supporting equitable access to services and markets. The study provides empirical evidence on the effectiveness of a gender-transformative, community dialogue-based approach and demonstrates how addressing gender norms can improve women's empowerment and livestock sector performance.

Keywords: Attitude, Community Conversations, Gender, Knowledge, Practices.

Household Debt and Economic Growth in Botswana: The Relationship

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Researcher, Botswana

Abstract

The study investigated the relationship between household debt and economic growth in Botswana. Specifically utilizing annual data from 1991-2023, the study utilized Autoregressive Distributed Lag (ARDL) model to evaluate the short- and long-term dynamics of this relationship in Botswana. Furthermore, the study probed the effect of various shocks (2008/9 global financial crisis and covid 19 pandemic) on the link between household indebtedness and economic growth. The study found a negative long run relationship between household debt and gross domestic product across all models. Additionally, it has been evident from the study that interest rates, particularly the prime lending rate carries a positive and significant effect on economic growth in Botswana and as such place lending rates as a potentially effective tool to both mitigating the potential risks of increased household indebtedness without compromising the rate of economic growth. The study recommends innovations in monetary policy coupled with intensified dissemination of financial literacy tools to foster for a more vibrant economy.

Keywords: Household debt, Economic growth, Botswana, ARDL

Right to Happiness - Between Constitutional Guarantee and Civil Liberty

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Abstract

Modern constitutional texts increasingly enshrine happiness as a legal or policy objective, despite its long-standing discussion in philosophy – from Aristotle's eudaimonia to Enlightenment theories of natural rights. This study examines the legal status of the "right to happiness," inquiring whether it should be regarded as a civil liberty or a constitutional guarantee. Three primary constitutional models emerge from comparative analysis: happiness as a justiciable human right, as a national goal and as a model for public policy.

The study discusses the doctrinal debate: on the one hand, the liberal tradition sees happiness as a liberty that guarantees the freedom to pursue one's own goals; on the other hand, more recent proposals aim to frame happiness as a fundamental right that is occasionally connected to third-generation human rights. Critical viewpoints draw attention to the difficulties of enforceability and the conceptual ambiguity of happiness.

In addition, the research will examine the hybrid nature of the right to happiness: although difficult to claim as an individual right, it functions as a constitutional principle that guides state policies on dignity, health and social inclusion, shaping a more holistic understanding of human rights.

Keywords: right to happiness, constitutional law, civil liberties, human rights, well-being

Gastronomi Kimliğinin Destinasyon Markalaşmasına Katkısının Değerlendirilmesi

Evaluating the Contribution of Gastronomy Identity to Destination Branding

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Özet

Gastronomi kimliği, bir toplumun ya da yörenin sahip olduğu yerel mutfak kültürünün nitelik ve değer bakımından benzerlerinden ayırmaya yarayan özelliklerin toplamını ifade etmektedir. Gastronomi kimliği, yerel kültürün bir parçasıdır. Bu doğrultuda, ait olduğu yörenin tarih, coğrafya ve kültüründen izler taşıdığını belirtmek mümkündür. Günümüzde destinasyonların gastronomi kimliği, turistlerin istek ve beklentilerini yönlendiren önemli bir etmen haline gelmiştir. Turistler yerel mutfak kültürünü sadece beslenme amaçlı değil aynı zamanda duyu ve duygularına hitap eden bir deneyim olarak talep etmeye başlamışlardır. Bu nedenden dolayı rekabetçi pazar ortamında, bireylerin değişen istek ve ihtiyaçlarına cevap verebilmek daha önemli hale gelmiştir. Destinasyonlar ise sahip olduğu özgün değer ve turistik çekicilikleri ön plana çıkararak, markalaşma stratejileri uygulamaya başlamışlardır. Gastronomi kimliği de destinasyon markalaşmasında değerlendirilebilecek stratejik bir yaklaşım olarak önem kazanmıştır. Bu çalışmanın amacı gastronomi kimliği ve destinasyon markalaşması ilişkisini açıklamaktır. Çalışma ikincil verilerden kaynak taraması yapılarak gerçekleştirilmiştir. Bu çalışma gastronomi kimliği ve destinasyon markalaşması arasındaki ilişkiyi araştıran bir ön çalışma niteliğindedir. Çalışma ilerleyen süreçlerde ampirik bulgular ile desteklenecektir.

Anahtar Kelimeler: Gastronomi kimliği, gastronomi, destinasyon markalaşması.

Abstract

Gastronomic identity refers to the sum total of the characteristics that distinguish a community's or region's local culinary culture from similar ones in terms of quality and value. Gastronomic identity is a part of local culture. In this respect, it can be said that it bears traces of the history, geography, and culture of the region to which it belongs. Today, the gastronomic identity of destinations has become a significant factor shaping tourists' desires and expectations. Tourists have begun to seek local culinary culture not only for nutritional purposes but also as an experience that appeals to their senses and emotions. Therefore, in this competitive market environment, responding to the changing desires and needs of individuals has become increasingly important. Destinations have begun to implement branding strategies by

highlighting their unique values and touristic appeals. Gastronomic identity has also gained importance as a strategic approach that can be considered in destination branding. The purpose of this study is to explain the relationship between gastronomic identity and destination branding. The study was conducted using secondary data. This study is a preliminary study exploring the relationship between gastronomic identity and destination branding. The study will be supported by empirical findings in the future.

Keywords: Gastronomic identity, gastronomy, destination branding.

İbnü'l-Esîr'in Gözünden Siyasi Meşruiyetin İnşası: Hz. Ebû Bekir'in Halife Seçilişi

The Construction of Political Legitimacy through the Eyes of Ibn al-Athir: The Election of Abu Bakr as Caliph

Hilal ŞAHİN

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Özet

Hz. Peygamber'in 632 yılında vefat etmesi, beraberinde Müslümanlar arasında liderlik seçimi meselesini meydana getirmiştir. Bu durum, Müslümanları hem dinî hem de siyasî açıdan ciddi bir karar verme sürecine sokmuştur. Bu karar neticesinde Hz. Ebû Bekir ilk halife olarak seçilmiş, böylece halifelik kurumu resmen yürürlüğe girmiştir. Bu çalışmada da, İslam tarihinin en kritik dönüm noktalarından biri olan Hz. Ebû Bekir'in halifeliğe seçilme süreci; İslam tarihi alanında otorite bir isim olan İbnü'l Esîr'in klasik tarih eseri el-Kâmil fî't-Târîh üzerinden ele alınacaktır. Çalışmada öncelikle İslam toplumunda halifelik kurumunun tarihsel arka planı ele alınmış; Hz. Peygamber'in vefatının ardından gerçekleşen Sakîfe toplantısı, Ensar ile Muhacirler arasındaki görüşmeler ve Hz. Ebû Bekir'in halife olarak seçilme süreci detaylandırılmıştır. Bu süreç aktarılırken İbnü'l-Esîr'in olayı anlatırken kullandığı dil, başvurduğu kaynaklar, yaptığı vurgular ve tarih yazımına yaklaşımı da değerlendirilmiştir. Ayrıca yazarın halifelik kurumuna bakışı ve Hz. Ebû Bekir'in meşruiyetini nasıl temellendirdiği özel olarak analiz edilmiştir. Sonuç olarak bu sunum, İslam tarih yazıcılığı açısından önemli bir isim olan; rivayet aktarmaktan ziyade eserinde daha seçici ve eleştirel bir yaklaşım sergileyen İbnü'l-Esîr'in tarih anlayışı çerçevesinde, Hz. Ebû Bekir'in halife olarak seçilme sürecini, bu sürecin meşruiyetini ve halifelik kurumuna bakışını muhtasar biçimde ortaya koymayı amaçlamaktadır.

Anahtar Kelimeler: İslam Tarih Yazıcılığı, Halifelik, Hz. Ebubekir, İbnü'l-Esir, el-Kâmil fi't-Tarih

Abstract

The death of the Prophet Muhammad in 632 brought about the issue of leadership selection among Muslims. This situation forced the Muslim community to make a critical decision with both religious and political implications. As a result, Abu Bakr was chosen as the first caliph, thereby officially establishing the caliphate institution. This study examines one of the most critical turning points in Islamic history— the selection of Abu Bakr as caliph—through the lens of al-Kāmil fī'l-Tārīkh, the classical historical work of Ibn al-Athīr, a prominent figure in Islamic historiography. The study first discusses the historical background of the caliphate process within the Islamic society and briefly recounts the Prophet's death. It then details the Saqīfa meeting, the debates between the Anṣār and Muhājirūn, and the

process by which Abu Bakr was selected as caliph. While presenting these developments, the language, sources, emphasis, and historiographical approach employed by Ibn al-Athīr are also analyzed. Particular attention is given to how he legitimizes Abu Bakr's caliphate and his perspective on the institution of the caliphate. In conclusion, this presentation aims to concisely explore the caliphal selection of Abu Bakr, its legitimacy, and the broader understanding of the caliphate within the historical narrative of Ibn al-Athīr, who demonstrates a selective and critical approach rather than merely transmitting reports.

Keywords: Islamic Historiography, Caliphate, Abu Bakr, Ibn al-Athir, al-Kāmil fī'l-Tarih

Bilişsel ve Motivasyonel Boyutta Ulusal ve Uluslararası Matematik Ders Kitaplarının Karşılaştırılmalı Analizi

Comparative Analysis of National and International Mathematics Textbooks in the Cognitive and Motivational Dimensions

Emre YILMAZ

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Özet

Bu çalışma, ulusal ve uluslararası matematik ders kitaplarını bilişsel ve motivasyonel açıdan inceleyip karşılaştırarak analizi yapmayı amaçlamıştır. Çalışma, nitel araştırmaya dayalı olarak yürütülüp doküman analizi yapılarak edinilen veriler betimsel analize tabi tutulacaktır. Öyle ki, kitapları hedef alınan ülkeler başta Papua Yeni Gine, Singapur ve Türkiye olmak üzere, kitapların ortak ele alınabilecek konuları ve ortak alınabilecek sınıf düzeylerinden hareketle çalışmanın organize edilmesi planlanmaktadır. Kitapların karşılaştırmalı analize tabi tutulacak bölümleri; etkinlikler, sorular, kitap sayfa sayısı, görsel kullanımı gibi bölümlerdir. Öte yandan gerek soruların türlerinden sorulma şekline gerek etkinliklerin öğrenciyi güdüleme tutumundan görsel kullanımı sıklığı ile disiplinler arası iletişimine kadar veri toplamaya ve bunların karşılaştırılmalı analizine istinaden yürütülmesi planlanmaktadır. Kitaplardaki hedef alınan bölümlerin bilişsel boyutta incelenirken hangi bilişsel düzeyde oldukları ve ne kadar sıklıkla ele alındıkları irdelenmiştir. Motivasyonel boyutta inceleme yapılırken ise kitaplarda hedef alınan bu bölümlerde John M. Keller tarafından geliştirilen ARCS modeline tabi tutularak verilerin bu öğretim modelindeki 4 adıma ithafen saptanıp veri toplanması hedeflenecektir. Çalışmanın aynı zamanda, eğitim açısından yatırım alan ve Japonya tarafından desteklenen Papua Yeni Gine'nin eğitim-öğretim programı başta olmak seçilen her ülke için incelenecektir. Elde edilecek bulguların yeni hazırlanacak olan ders kitaplarına tavsiye niteliği taşıyacağı düşünülmektedir.

Anahtar Kelimeler: Matematik ders kitapları, ulusal ve uluslararası matematik ders kitaplarının karşılaştırılması, bilişsel ve motivasyonel boyut, karşılaştırmalı analiz

Abstract

This study aims to analyze and compare national and international mathematics textbooks from both cognitive and motivational perspectives. The research is conducted within a qualitative research framework, utilizing document analysis, and the data obtained will be subjected to descriptive analysis. The study is planned to be organized based on common topics and shared grade levels identified across the textbooks of selected countries, primarily Papua New Guinea, Singapore, and Turkey. The sections of the textbooks to be analyzed comparatively include activities, questions, the number of pages, and the use of visuals. Furthermore, data collection and comparative analysis will be carried out regarding various elements

such as the types and phrasing of questions, the motivational aspects of activities, the frequency and quality of visual usage, and interdisciplinary connections. In the cognitive dimension, the targeted sections of the textbooks will be examined to determine their cognitive level and the frequency of their occurrence. In terms of motivational analysis, the study will apply the ARCS model developed by John M. Keller to the selected sections, aiming to collect data in relation to the four components of this instructional design model (Attention, Relevance, Confidence, and Satisfaction). Additionally, the study will examine the educational curricula of each selected country, with particular emphasis on Papua New Guinea—a country receiving educational investment and support, notably from Japan. The information obtained will be recommended for use in newly prepared textbooks.

Keywords: Mathematics textbooks, national and international textbook comparison, cognitive and motivational perspectives, analyzed comparatively

Üstün Yetenekli Öğrencilerin Matematiksel Akıl Yürütmelerinin İncelenmesi

Examining the Mathematical Reasoning of Gifted Students

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Özet

Bu araştırmanın amacı, üstün yetenekli ortaokul öğrencilerinin matematiksel akıl yürütme becerilerini orantısal, cebirsel, geometriksel ve istatistiksel problem türleri üzerinden incelemektir. Çalışma, İstanbul ili Bağcılar ilçesinde bulunan Bilim ve Sanat Merkezi'nde öğrenim gören dört sekizinci sınıf öğrencisiyle yürütülmüş ve nitel araştırma yöntemlerinden çoklu durum çalışması deseni kullanılmıştır. Katılımcılar, ölçüt örnekleme yoluyla seçilmiş olup, seçimde akademik başarı, öğretmen görüşleri ve resmî tanılama sürecindeki üstün yetenekli tanısı etkili olmuştur.

Veri toplama sürecinde her biri farklı alana ait toplam 16 problem (her alandan 4'er soru) uygulanmış, öğrencilerden yazılı cevaplar alınmış ve birebir görüşmelerle çözüm süreçlerini açıklamaları istenmiştir. Elde edilen veriler betimsel analiz ve içerik analiziyle çözümlenmiş; öğrencilerin stratejileri, gerekçelendirmeleri ve kullandıkları akıl yürütme bileşenleri değerlendirilmiştir.

Bulgular, öğrencilerin her alanda farklı stratejiler geliştirdiğini göstermektedir. Cebirsel akıl yürütmede denklem kurma ve ters işlem yapma, orantısalda içler-dışlar çarpımı ve denk kesir kullanımı öne çıkmıştır. Geometriksel akıl yürütmede sezgisel yaklaşımlar baskın olurken gerekçelendirme sınırlı kalmıştır. İstatistiksel akıl yürütmede ise çoğunlukla aritmetik ortalama tercih edilmiş, diğer ölçütler göz ardı edilmiştir.

Sonuç olarak, araştırma üstün yetenekli öğrencilerin matematiksel akıl yürütme süreçlerini çok boyutlu biçimde ortaya koymakta ve öğretim sürecine yönelik önemli öneriler sunmaktadır.

Sonuç olarak, bu tez çalışması üstün yetenekli öğrencilerin matematiksel akıl yürütme süreçlerini çok boyutlu biçimde ortaya koymakta; hem matematik eğitimi literatürüne katkı sağlamakta hem de öğretmenlere sınıf içi uygulamalarda yol gösterici nitelikte bulgular sunmaktadır.

Anahtar Kelimeler: Akıl Yürütme, Üstün Yetenekli öğrenciler, Akıl yürütme bileşenleri

Abstract

The purpose of this research is to examine the mathematical reasoning skills of gifted middle school students through proportional, algebraic, geometric, and statistical problem types. The study was conducted with four eighth-grade students attending the Science and Art Center in the Bağcılar district of Istanbul, and a multiple-case study design, a qualitative research method, was employed. Participants were selected through criterion sampling, influenced by academic achievement, teacher opinions, and official giftedness identification.

During the data collection process, a total of 16 problems (four from each area) were administered, each from a different domain. Students provided written responses and were asked to explain their solution processes through one-on-one interviews. The data obtained were analyzed using descriptive and content analysis, and the students' strategies, justifications, and reasoning components were evaluated.

The findings indicate that students developed different strategies in each domain. In algebraic reasoning, setting equations and performing inverse operations were prominent, while in proportional reasoning, using internal and external multiplication and equivalent fractions were prominent. In geometric reasoning, intuitive approaches dominated, while justification remained limited. In statistical reasoning, the arithmetic mean was often preferred, while other criteria were ignored.

In conclusion, the study reveals the mathematical reasoning processes of gifted students in a multidimensional manner and offers important recommendations for the teaching process.

Keywords: Reasoning, Gifted students, Reasoning components

Sağ Popülizm ve Göç: Farklı Bir Yaklaşım Olarak Türkiye'de AK Parti Örneği

Right-Wing Populism and Migration: The Case of the AK Party in Türkiye as a Distinct Approach

Hilal Demir

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Özet

Bu çalışma, Türkiye'de AK Parti iktidarı altında şekillenen göç söylemini, sağ popülizm bağlamında incelemeyi amaçlamaktadır. Popülizmin literatürde ideoloji, söylem ve strateji olarak ele alınması, kavramın tanımlanmasına ilişkin belirsizliği derinleştirirken aynı zamanda kavramın dinamik doğası, onu günümüz siyasetinde etkili kılmaktadır. Özellikle sağ popülizm, son yıllarda göçmen karşıtı ve yabancı düşmanı söylemlerle dikkat çekmektedir. Göçmen karşıtlığı ve yabancı düşmanlığı ile özdeşleşen sağ popülizm Batı için uygun bir model sağlamakla birlikte farklı siyasal ve kültürel bağlamlarda çeşitlenen pratikleri açıklamakta yetersiz kalabilmektedir. Literatürde sıklıkla sağ popülist olarak sınıflandırılan AK Parti'nin, yoğun göç dalgalarına rağmen göçmen karşıtı söylemlerden uzak ılımlı tutumu, çalışmada klasik sağ popülizmden farklılaşan bir örnek olarak değerlendirilmektedir.

Çalışma kapsamında AK Parti'nin göçmen kimliğini nasıl inşa ettiğini ve göçmenleri popülist söylemin klasik ikiliklerinde nasıl konumlandırdığı tematik analiz yöntemiyle incelenmektedir. Nitel yöntemle yürütülen bu çalışma, Türkiye'deki göç yönetiminin yerel dinamikler, dini-muhafazakâr siyasi gelenek ve ideolojik faktörler gibi çeşitli temalar altında nasıl şekillendiğine dair açıklayıcı bir anlayış sunmayı amaçlamaktadır. Sonuç olarak, çalışma Türkiye örneğini merkeze alarak, sağ popülizmin Batı dışı bağlamlarda nasıl farklılaştığını göstermeyi ve sağ popülizm-göç ilişkisine dair tartışmalara katkı sunmayı hedeflemektedir.

Anahtar Kelimeler: Sağ popülizm, Göç, Göçmen kimliği, Tematik analiz

Abstract

This study aims to examine the discourse on migration shaped under the rule of the AK Party in Türkiye within the context of right-wing populism. The literature often addresses populism as an ideology, discourse, and strategy, which deepens the ambiguity regarding its definition; nevertheless, its dynamic nature lends it significance in contemporary politics. Particularly, right-wing populism has gained attention with its anti-migrant and xenophobic rhetoric. While right-wing populism provides a suitable model for Western, it often falls short in explaining practices in different political and cultural contexts. Despite the massive waves of migration to Türkiye, the AK Party, often classified as

right-wing populist in the literature, maintains its moderate stance and avoids anti-migrant discourses, and is considered a distinct example diverging from classical right-wing populism in the study.

Using thematic analysis, the research investigates how the AK Party constructs the identity of migrants and positions them within the classic binaries of populist discourse. This qualitative study seeks to provide an understanding of how migration management in Türkiye is shaped by local dynamics, religious-conservative traditions, and ideological factors. Ultimately, the study aims to contribute to discussions on right-wing populism and migration in non-Western contexts by focusing on the case of Türkiye.

Keywords: Right-wing populism, Migration, Migrant identity, Thematic analysis

Analysis of Selected Myths about Singles based on Own Research

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Abstract

The aim of the presentation is to analyse selected myths circulating in public discourse about single people, compared with the results of my own research and an analysis of the literature on the subject. The main research question concerns the relationship between the preferred lifestyle of single people and social stereotypes and their demographic characteristics. The study was conducted using the CAWI method in 2022. Over a thousand singles from Poland took part in the study. The analyses show that being single does not oblige individuals to remain unmarried for their entire lives – this state can be long-term or only a short-term transitional stage. The study showed that singles live in both rural areas and large cities. A small percentage of respondents declared high earnings, which, according to popular opinion, is a characteristic feature of this category of people. The research proved that for the respondents, singleness does not mean sexual abstinence or a definitive renunciation of future romantic relationships. The research emphasises the need to move away from simplified narratives in favour of a more nuanced, scientific approach to this lifestyle. A research gap has also been identified in the field of research on singleness in Poland, particularly with regard to the use of mixed methods.

Keywords: singlism, single, lifestyle, sexuality

Erkek Tenisçi Çocuklarda Kuvvet ve Denge ile Vuruş Hızları Arasındaki İlişkinin İncelenmesi

Examınation of the Relationship Between Strength, Balance And Stroke Speeds in Boys Tennis Players

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Özet

Amaç: Bu çalışmanın amacı, tenisçi çocuklarda üst ekstremite kuvveti ve denge parametreleri ile forehand, backhand ve servis vuruş hızları arasındaki ilişkiyi incelemek ve hangi fiziksel özelliklerin vuruş hızını daha iyi yordadığını istatistiksel olarak değerlendirmektir.

Yöntem: Çalışmaya yaşları 9-12 arasında değişen 12 erkek tenisçi çocuk (Ort: 11.08 ± 1.08 yıl; boy: 1.47 ± 0.10 m, kilo: 39.87 ± 9.52 kg, VKİ: 18.22 ± 2.31) dahil edilmiştir. Katılımcıların izotonik ve izometrik şınav kuvveti, sağ-sol ve çift ayak denge ölçümleri ile forehand (FHAND), backhand (BHAND) ve servis vuruş hızları kaydedilmiştir. İlişkiler Pearson korelasyon katsayısı ile, vuruş hızını tahmin eden faktörler ise çoklu doğrusal regresyon analizi ile değerlendirilmiştir.

Bulgular: Korelasyon analizine göre; servis hızı ile çift ayak dengesi ($r=0.82$, $p<0.01$), izotonik kuvvet ($r=0.72$, $p<0.01$) ve sağ ayak dengesi ($r=0.78$, $p<0.01$) arasında güçlü pozitif ilişki bulunmuştur. Forehand hızı ile izotonik kuvvet ($r=0.68$, $p<0.05$) ve çift ayak dengesi ($r=0.71$, $p<0.05$) orta düzeyde ilişkiliyken, backhand hızı yalnızca sol ayak dengesi ($r=0.63$, $p<0.05$) ile anlamlı ilişki göstermiştir. Regresyon analizi sonuçlarına göre, servis hızının %79'unun izotonik kuvvet ve çift ayak dengesi ile açıklanabildiği görülmüştür.

Tartışma: Bulgular, üst vücut kuvveti ve dengenin tenis performansında özellikle servis ve forehand vuruşlarında belirleyici olduğunu ortaya koymaktadır. Backhand vuruşunun farklı fizyomekanik yapısı nedeniyle kuvvetten daha az, denge ve teknik becerilerden daha fazla etkilenebileceği düşünülmektedir.

Sonuç: Tenisçi çocuklarda servis ve forehand vuruş hızlarının artırılmasında izotonik kuvvet ve denge antrenmanlarına ağırlık verilmesi önerilmektedir. Backhand performansı için ise teknik çalışmalar ve unilateral denge egzersizleri daha etkili olabilir. Antrenman programlarının vuruş türüne özgü fiziksel gereksinimlere göre farklılaştırılması performans gelişimini destekleyecektir.

Anahtar Kelimeler: Tenis, kuvvet, denge, vuruş hızı, çocuk, performans

Abstract

Purpose: This study aimed to examine the relationship between upper extremity strength and balance parameters and forehand, backhand, and serve speeds in children's tennis players and to evaluate which physical characteristics better predict hit speed statistically.

Method: Twelve male tennis players (mean: 11.08 ± 1.08 years; height: 1.47 ± 0.10 m, weight: 39.87 ± 9.52 kg, BMI: 18.22 ± 2.31) aged 9-12 were included in the study. Participants' isotonic and isometric push-up strength, right-left and double-foot balance measurements, and forehand (FHAND), backhand (BHAND), and serve speeds were recorded. Relationships were evaluated using Pearson's correlation coefficient, and factors predicting hit speed were assessed using multiple linear regression analysis.

Findings: According to the correlation analysis, A strong positive correlation was found between serve speed and double-foot balance ($r=0.82$, $p<0.01$), isotonic strength ($r=0.72$, $p<0.01$), and right-foot balance ($r=0.78$, $p<0.01$). Forehand speed was moderately correlated with isotonic strength ($r=0.68$, $p<0.05$) and double-foot balance ($r=0.71$, $p<0.05$), while backhand speed showed a significant correlation only with left-foot balance ($r=0.63$, $p<0.05$). Regression analysis results indicated that 79% of serve speed could be explained by isotonic strength and double-foot balance.

Discussion: The findings reveal that upper body strength and balance are decisive factors in tennis performance, particularly in serve and forehand strokes. Due to the different physiomechanical structure of the backhand stroke, it is thought that it may be less affected by strength and more by balance and technical skills.

Conclusion: It is recommended that tennis players prioritize isotonic strength and balance training to increase serve and forehand stroke speed. Technical training and unilateral balance exercises may be more effective for backhand performance. Differentiating training programs based on the physical requirements of each stroke type will support performance improvement.

Keywords: Tennis, strength, balance, stroke speed, child, performance

China's Rise in the 21st Century: Economic Power, Strategic Ambitions & Global Implications

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Abstract

The rise of China as a leading global power has generated significant debates in recent years. This study analyses multifaceted drivers of China's ascent, emphasizing economic, political, military, technological, diplomatic, and cultural dimensions. Economically, China's transformation began with the market-oriented reforms of 1979, which opened the country to global trade, and fostered infrastructure investments. Initiatives as the Belt and Road Initiative and the Digital Silk Road (2013) reflect China's global economic and digital footprint, highlighting its ambitions to shape international trade, and digital governance. Politically and diplomatically, China has expanded its influence through strategic partnerships while navigating complex relations with the EU and the United States. Militarily, China's modernization of its armed forces and assertive strategies underscore its growing capabilities, reinforcing its status as a major geopolitical actor. Culturally, China leverages soft power through education, and international exchanges. This study situates China's rise within an International Political Economy framework by integrating economic, political, military, technological, diplomatic, and cultural perspectives, which provides a comprehensive understanding of China's evolving role in the 21st-century global order and the shifting dynamics of EU-China relations. China's Rise, Economic & Technological Growth, diplomacy, EU-China Relations.

Keywords: China's Rise, Economic & Technological Growth, diplomacy & soft power, EU China Relations, Military Modernization

Oyunculuk Yöntemlerinin Sonu Mu? Yapay Zekâ Çağında Oyunculuk Sanatını Yeniden Düşünmek

The End of Acting Methods: Rethinking the Art of Acting in the Age of Artificial Intelligence

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Özet

Bu bildiri, Stanislavski Sistemi ve onun sinemadaki uzantısı olan Metot Oyunculuğu gibi geleneksel oyunculuk yöntemlerinin, önce sinema mecrasının endüstriyel üretim mantığı altında bir krize girdiğini, ardından yapay zekâ (YZ) ve dijital üretim teknolojilerinin etkisiyle "işlevsizleştirilme/ıskartaya çıkarılma" sürecine sürüklendiğini tartışmaktadır. Çalışma, oyunculuk sanatının doğasında bulunan temel paradokslardan hareketle, tiyatrodan sinemaya geçişte yaşanan mecrasal dönüşümün psikoteknik yöntemlerde yarattığı kırılmayı ortaya koyarak, bu kırılmanın dijital çağda derinleşen ikinci bir krizle nasıl iç içe geçtiğini incelemektedir. Performans yakalama, deepfake ve sentetik medya gibi teknolojiler, oyuncunun bedenini, emeğini ve yaratıcılığını veri setlerine indirgerken, oyunculuk sanatının insani özünü tehdit eden yeni bir temsil biçimi yaratmaktadır. Bu bağlamda bildiri, geleneksel psikoteknik yöntemlerin mevcut dijital gerçeklik karşısında yetersiz kaldığını öne sürerek; oyuncunun teknolojiyle eleştirel bir ilişki kurduğu, dijital varlığının farkında olduğu ve insani yaratıcılığını koruyan yeni bir paradigma gerekliliğini savunmaktadır.

Anahtar Kelimeler: Oyunculuk Yöntemleri, Yapay Zekâ, Temsil, Stanislavski, Metot Oyunculuğu

Abstract

This paper argues that traditional acting methods, such as the Stanislavski System and its cinematic extension, Method Acting, first entered a state of crisis under the industrial production logic of the cinema medium, and were later driven toward a stage of "dysfunctionalization" or "obsolescence" under the influence of artificial intelligence (AI) and digital production technologies. Drawing on the fundamental paradoxes inherent in the art of acting, the study explores the rupture within psychotechnical methods caused by the transformation of medium during the transition from theatre to cinema and examines how this rupture has become intertwined with a second, deepening crisis in the digital age. Technologies such as performance capture, deepfake, and synthetic media reduce the actor's body, labour, and creativity to data sets, generating a new form of representation that threatens the human essence of acting. In this context, the paper contends that traditional psychotechnical methods have become inadequate in addressing the current digital reality and calls for a new paradigm in which the actor engages critically with technology, remains conscious of their digital existence, and preserves their human creativity.

Keywords: Acting Methods, Artificial Intelligence (AI), Representation, Stanislavski, Method Acting

Self-efficacy in Artificial Intelligence Contexts: Recent Evidence in Education and Work

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Abstract

The increasing integration of artificial intelligence (AI) in educational and professional contexts has highlighted **self-efficacy** as a key factor influencing the acceptance, use, and learning of intelligent technologies. Recent studies show that technological or AI-related self-efficacy is positively associated with trust and favorable attitudes toward AI (Montag et al., 2023; Naiseh et al., 2025; Bewersdorff et al., 2025). In educational settings, the use of intelligent tutoring systems, such as ChatGPT, enhances computational thinking skills, motivation, and performance, mediated by self-efficacy in programming or AI (Yilmaz & Yilmaz, 2023; Wang et al., 2022). Furthermore, self-efficacy moderates negative effects of stress or anxiety related to AI, reducing burnout and strengthening motivated learning (Kim & Lee, 2024; Chen, Hu & Wei, 2024). Cultural, gender, and individual differences influence these effects, highlighting the need for adaptive approaches (Asio & Suero, 2024; Naiseh et al., 2025). Conversely, low self-efficacy can lead to greater dependence on AI for academic tasks, impairing creativity and critical thinking (Rodríguez-Ruiz, Marín-Lópes & Espejo-Siles, 2025; Zhang et al., 2024). These findings suggest that enhancing AI self-efficacy is crucial to maximize benefits, mitigate risks, and promote positive engagement in technological contexts.

Keywords: Self-efficacy, artificial intelligence, education

From Social Innovation to Digital Governance: Lessons from Gendered Fear of Crime Research in Colombo

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Abstract

This study explores how insights from gendered fear of crime research in Colombo, Sri Lanka, can inform debates on social innovation and digital governance. Drawing on interviews (n = 50), survey data (n = 100), and observational fieldwork, the analysis applies the Gendered Spatial Autonomy Model (GSAM) to examine how gender norms, urban infrastructures, and governance practices shape women's fear of crime and spatial mobility. The results highlight three key themes. First, communities developed grassroots social innovations, such as trust circles and neighborhood information-sharing, that enhance resilience but remain fragmented without institutional support. Second, women increasingly relied on digital platforms—including social media groups and mobile safety applications—to share information and mitigate fear, though limited institutional responsiveness and unequal access restricted their effectiveness. Third, fear was deeply gendered and intersectional, disproportionately affecting poorer women who lacked digital access and reinforcing structural inequalities in mobility. By linking criminology, gender studies, and governance research, the study contributes theoretically by extending the GSAM as a framework that situates fear of crime within broader power relations while identifying empowerment pathways through social innovation and digital participation. For policy and practice, the findings underscore the importance of integrating grassroots innovations, enhancing responsiveness in digital governance, and embedding gender-sensitive safety considerations into urban planning. Although focused on Colombo, the study provides broader lessons on how inclusive and participatory governance can transform urban safety into a foundation for democratic and sustainable cities.

Keywords: Digital governance, Gendered fear of crime, Intersectionality, Social innovation, Spatial autonomy, Urban safety

İlk Yetişkinlik Dönemindeki Bireylerin Dua Tutumunun Depresyonla Başa Çıkma ve Psikolojik İyi Oluşla İlişkisi

The Relationship Between Prayer Attitude Of Individuals In Early Adulthood And Coping With Depression And Psychological Well-Being

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Özet

Bu çalışma, erken yetişkinlik dönemindeki bireylerde dua tutumları, depresyonla başa çıkma ve psikolojik iyilik hali arasındaki ilişkiyi incelemektedir. Nicel bir araştırma çerçevesinde yürütülen çalışmada, ilişkisel tarama modeli kullanılmıştır. Veriler 164 katılımcıdan çevrimiçi olarak toplanmıştır. Kullanılan araçlar, Ahmet Albayrak (2014) tarafından geliştirilen Dua Tutum Ölçeği, Bülent Baki Telef (2013) tarafından geliştirilen Psikolojik İyi Oluş Ölçeği ve Hisli (1988) tarafından Türkçeye uyarlanan Beck Depresyon Envanteri'dir.

Bulgular, dua tutumları arttıkça psikolojik iyilik halinin artma eğiliminde olduğunu, depresyon düzeylerinin ise azalma eğiliminde olduğunu; ancak bu ilişkilerin istatistiksel olarak anlamlı olmadığını göstermiştir. Buna karşılık, psikolojik iyilik hali ve depresyon arasında anlamlı ve negatif bir korelasyon bulunmuştur. Cinsiyet, yaş, medeni durum ve eğitim düzeyi gibi demografik değişkenler, kadınların erkeklerden daha yüksek depresif semptomlar bildirmesi ve 30-35 yaş aralığındaki bireylerin daha yüksek psikolojik iyilik hali göstermesi dışında, anlamlı bir fark ortaya koymamıştır.

Genel olarak, bulgular dua tutumlarının sıkıntı karşısında duygusal dengeyi, iç huzuru ve dayanıklılığı destekleyen psikolojik bir kaynak işlevi görebileceğini vurgulamaktadır. Duanın etkileri bireysel ve durumsal faktörlere bağlı olarak değişse de, olumlu ruh sağlığını desteklemedeki rolü kavramsal ve pratik olarak önemini korumaktadır. Sonuç olarak, dua, manevi yönelimlerin ruh sağlığıyla nasıl etkileşime girdiğini anlamada anlamlı bir değişken olarak değerlendirilebilir ve psikolojik danışmanlık ve manevi refah araştırmaları için potansiyel fikirler sunabilir.

Anahtar Kelimeler: Din Psikolojisi, Erken Yetişkinlik, Dua, Depresyon, Psikolojik İyi Oluş

Abstract

This study investigates the relationship between prayer attitudes, coping with depression, and psychological well-being among individuals in early adulthood. Conducted within a quantitative research framework, the study employed a correlational survey model. Data were collected online from 164 participants. The instruments used were the Prayer Attitude Scale developed by Ahmet Albayrak (2014),

the Psychological Well-Being Scale developed by Bülent Baki Telef (2013), and the Beck Depression Inventory adapted into Turkish by Hisli (1988).

The findings indicated that as prayer attitudes increased, psychological well-being tended to improve, while depression levels tended to decrease; however, these relationships were not statistically significant. In contrast, a significant and negative correlation was found between psychological well-being and depression. Demographic variables such as gender, age, marital status, and educational level did not reveal significant differences, except that women reported higher depressive symptoms than men, and individuals aged 30–35 demonstrated higher levels of psychological well-being.

Overall, the findings highlight that prayer attitudes may serve as a psychological resource that supports emotional balance, inner peace, and resilience in times of distress. Although the effects of prayer vary depending on individual and situational factors, its role in promoting positive mental health remains conceptually and practically important. Consequently, prayer can be regarded as a meaningful variable for understanding the interaction between spiritual orientation and mental health, offering potential insights for psychological counseling and research on spiritual well-being.

Keywords: Psychology of Religion, Early Adulthood, Prayer, Depression, Psychological Well-Being

Analysis of Environmental Factors Influencing Directional Drilling

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Abstract

Horizontal directional drilling (HDD) has become a technology for executing underpasses of energy networks (oil and natural gas pipelines, electrical power cables) but also for ensuring citizen comfort (communication systems, water supply and sewage systems, etc.), without executing trenches.

The method is often preferred over traditional open-pit methods due to its perceived environmental advantages, mainly due to the significant reduction in surface disturbance.

This minimally invasive approach promises to preserve green spaces, landscapes and ecosystems by avoiding subsurface obstacles without disturbing the surface above.

However, although HDD is considered a less intrusive technique, it is essential to recognize that, if not properly managed, it can pose significant environmental risks.

For example, even a less intrusive technique has the potential to modify ecosystems and affect species behavior and migration.

Therefore, it is imperative to conduct a comprehensive analysis of the environmental factors influencing HDD projects.

This article aims to provide a detailed analysis of the relevant environmental factors that influence directional drilling operations.

We will thus examine how these factors can affect the planning, execution and costs of HDD projects.

The paper will also present specific case studies where environmental factors have had a significant impact, the solutions adopted and the lessons learned.

Finally, best practices and technologies to minimize environmental impacts will be identified and the importance of environmental factors in HDD projects will be assessed.

Keywords: Horisontal drilling, environment risk assesment, projects

CO2 foam Storage in Oil Fields for Enhanced Oil Recovery and Carbon Storage

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Abstract

Carbon dioxide (CO_2) foam technology represents a significant innovation within Enhanced Oil Recovery (EOR) technologies, offering a dual solution to two fundamental challenges of the contemporary oil industry: maximizing hydrocarbon extraction efficiency and reducing the carbon footprint through the geological capture and storage of CO_2. This approach integrates economic and environmental perspectives in an advanced technological framework that meets both operational performance and sustainability requirements.

In the context of conventional crude oil production methods, such as primary and secondary recovery, a significant volume of unrecovered crude oil remains in the reservoir, estimated at 50–70% of the original volume in the reservoir. This loss highlights the limitations of traditional methods and outlines the urgent need for more efficient EOR technologies, capable of valorizing residual resources in a sustainable and economic way. Among the new generation EOR techniques, CO_2 injection stands out as an extremely promising option, due to its ability to modify the physicochemical properties of crude oil. CO_2 dissolved in crude oil reduces its viscosity, causes volumetric expansion, and reduces the interfacial tension between crude oil and water, thus facilitating the mobilization of crude oil retained in the pores of the rock. However, the use of CO_2 in pure form is affected by a series of technological limitations: its high mobility, density differences with reservoir fluids, and the tendency to form viscous flow channels or migrate vertically. These phenomena cause a decrease in process efficiency and favor premature gas penetration into production wells, which compromises the overall performance of the recovery operation.

In this paper analysis CO_2 foam technology because it is emerging as a strategic solution for the future of the oil industry, combining energy efficiency objectives with environmental imperatives. Its integration into the technological portfolio of oil companies not only increases the profitability of extraction operations, but also actively contributes to reducing climate impact, transforming the industry into a more responsible and adaptable actor in the era of energy transition.

Keywords: foam, carbon dioxide, environment, oil recovery, reability

Particularities of the Mixture of Natural Gas with Hydrogen

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Abstract

Globally, the energy sector is facing an unprecedented challenge, namely the need to transition from an energy system based mainly on fossil fuels to a sustainable, low-carbon system. Climate change generated by human activities, pollution in various forms, especially through the massive burning of fossil fuels, has led to the intensification of extreme weather events, the increase in global average temperatures and climate instability.

All this has led governments, international organizations and scientific communities to adopt urgent measures to reduce greenhouse gas emissions and limit global warming to at least 2°C below pre-industrial levels, as stated in the 2015 Paris Agreement.

Thus, hydrogen is emerging as an essential energy vector in the energy architecture of the future. Hydrogen is a clean-burning fuel that does not emit carbon dioxide when used, and its potential to contribute to the decarbonization of sectors that are difficult to electrify, such as heavy transport, the chemical industry, or the gas sector, is increasingly recognized. In this context, mixtures of hydrogen and natural gas are gaining importance, offering the possibility of capitalizing on existing gas transport and distribution infrastructure, thus reducing the carbon footprint. For several countries, the implementation of these mixtures represents an intermediate step between fossil fuels and pure hydrogen scenarios. At the same time, hydrogen produced from renewable sources (green hydrogen) is considered an ideal solution for storing intermittent energy from wind or solar sources.

Therefore, the theme of this scientific endeavor falls within the global energy transition effort, aiming to investigate the influence of hydrogen in the mixture with natural gas, tracking the changes in the physical properties of the mixture, the thermodynamic characteristics and also the risks that arise with the changes occurring in the mixture.

Keywords: hydrogen, environment, blending, methane

Analysis of Environmental Factors Influencing the Use of Drilling Fluids

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Abstract

A drilling fluid is a polydisperse colloidal system composed of a continuous phase (made up of water or petroleum products in which additives such as sodium hydroxide, salt, gypsum, surface active agents, etc. are dissolved and/or dispersed) and a solid dispersed phase (made up of clays, weighting materials, etc.).

In recent times, the use of artificial intelligence to create drilling fluids, absolutely necessary for applications in the exploration or exploitation of oil and/or gas deposits, as well as ensuring compositions of these fluids depending on the disturbing factors that affect the drilling process, has gained particularly strong momentum.

A classic example of the use of artificial intelligence is the increase in the viscosity of the drilling fluid during the passage of the column through an unconsolidated layer.

As a result of the penetration of fine particles into the fluid composition, its addition with fluidizers such as lignosulfonates, phosphates, humates, etc. will take place.

Thus, in the presence of hydroxides (pH>8.5), we obtain an increase in the fluid's capacity to incorporate clay solids (there are cases when clay solids were incorporated up to 15% of the volume of the drilling fluid). In the article we will discuss the properties of drilling fluid, its physicochemical characteristics, the analysis of drilling fluid types, and the presentation of factors that influence drilling fluids.

Keywords: oil drilling, polydisperse colloidal, fluid, environment

Underground Natural Gas Storage in Salt Reservoirs

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Abstract

Natural gas represents that energy potential that can be stored in large quantities, in the same state in which it is used by the final consumer, without being subjected to transformations and interruptions.

One of the fundamental problems of the gas industry is taking over hourly and seasonal consumption peaks, caused by the random nature of gas demand, depending on the nature of industrial consumers (with a relatively constant demand) and non-industrial (mainly households, with large hourly and seasonal fluctuations) and import possibilities, with approximately uniform and limited capacities, during a day or the entire cold season.

Underground storage of natural gas represents a solution for supplying gas to consumers in case of damage to large gas pipelines and covering consumption peaks in the cold season. Compensation of gas flows necessary for heating is done by transferring gas from fields with a high dynamic potential to underground storages located near large consumers.

This paper analysis natural gas storage (in underground or above-ground reservoirs) because is an efficient process that combines the constant supply of natural gas, through transmission pipelines, with variable market demands, which depend on weather or economic considerations. In addition to the function of covering consumption peaks, gas storages also have the strategic role of ensuring gas supply in emergency cases (disasters, earthquakes, etc.). During the summer, when the transport capacity of the pipelines far exceeds consumption demand, natural gas is stored and will most often be extracted in the winter, when gas consumption increases greatly, or depending on the economic considerations of the respective period. Covering seasonal consumption peaks can be done by underground gas storage in storages located near large consumption centers.

Keywords: saline, natural gas, storage, energy

Determining the Influence Areas of Wells in a Depleted Reservoir

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Abstract

In order to validate the models presented over the decades, many modelings were performed, which validated the theoretical assumptions. Of course, the degree of approximation of the models to the reality in the deposit was always closely related to the quantity and quality of the primary data, resulting from the geological and geophysical research existing on the deposit, as well as the availability of credible production data.

The present work attempts, by developing and carrying out a rigorous research program over a deposit from the Sarmatian deposits of the Transylvanian basin, to supplement some contributions to the chapter called numerical modeling of depleted deposits. The studied deposit is part of the structures created over the salt domes in the central-eastern part of the basin. It is a mature deposit, with production data of over 50 years.

The gases are poor gases, with an exclusive methane content (99%). The origin of the gases is largely thermogenic, according to the TOC research carried out, but the existence of biogenic sources, which may be responsible for filling the deposits in a proportion of 10-15%, is not excluded either.

The main sources for the gases are the marly shales of the Lower Badenian, located at a depth of over 3000 m. The migration paths to the gas traps are the fault planes due to the combined effect of regional tectonics and salt movement. The deposits are made up of shelf-edge turbidite sandstones and mid-shelf depositional systems, with some advanced prodeltas. The shielding is achieved by marine clay layers developed between active sedimentation cycles.

The gas displacement mechanism is their elastic expansion, without significant advances of marginal water.

For the experiment, a complex consisting of 4 sandy packages, numbered Sarmațian -1, Sarmațian -2, Sarmațian -3 and Sarmațian -4, was chosen. 4 wells open this complex, which still have production today.

Keywords: gas well rehabilitation, environment, depleted reservoires

Kuantum Naive Bayes ile Veri Sınıflandırması: Elektron Çarpışma Verileri Üzerine Bir Uygulama

Data Classification with Quantum Naive Bayes: An Application on Electron Collision Data

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Özet

Kuantum Naive Bayes yöntemi, kuantum süperpozisyon ve paralel hesaplama avantajlarını kullanarak aynı anda birden fazla olasılığı işleyebilmesiyle klasik yöntemden ayrılmaktadır. Bu özellik, özellikle büyük ölçekli ve yüksek boyutlu veri kümelerinde daha yüksek hesaplama verimliliği sunmaktadır. Bu çalışma, hızlandırılmış elektronların çarpıştırılması sonucu elde edilen parçacıkların enerji değerlerini içeren CERN kaynaklı bir veri seti üzerinde Naive Bayes sınıflandırma yöntemlerinin uygulanmasına odaklanmaktadır. Çarpışma öncesi elektronlar kütlelerine hafif ve ağır olarak sınıflandırılmıştır. Ürün parçacıkları içinde aynı sınıflandırma gerçekleştirilmiştir. Veri seti üzerinde yapılan analizde, çarpışmaya giren elektronların hafif ya da ağır olma durumuna göre ortaya çıkan ürünün sınıfı kestirilmeye çalışılmıştır. Sınıflandırma süreci hem klasik Naive Bayes hem de Kuantum Naive Bayes yöntemleri kullanılarak gerçekleştirilmiş ve sonuçlar karşılaştırılmıştır. Analizler, her iki yaklaşımın da sınıflandırma doğruluğu açısından tutarlı sonuçlar ürettiğini göstermektedir. Sonuç olarak bu uygulama, parçacık fiziği tabanlı bir veri seti üzerinden Kuantum Naive Bayes yönteminin klasik Naive Bayes'e kıyasla sağladığı üstünlüğü göstermektedir. Bu çalışma, kuantum hesaplama yöntemlerinin performans açısından önemli avantajlar sunduğunu bir kez daha ortaya koymaktadır. Bu bulgular, kuantum yapay zekânın gelecekteki olası katkılarının güçlü bir göstergesi niteliğindedir.

Anahtar Kelimeler: Kuantum Makine Öğrenmesi, Naive Bayes, Parçacık Çarpışmaları

Abstract

Quantum Naive Bayes differs from the classical method by leveraging the advantages of quantum superposition and parallel computation, allowing it to process multiple probabilities simultaneously. This feature provides higher computational efficiency, especially for large-scale and high-dimensional datasets. This study focuses on applying Naive Bayes classification methods to a CERN-based dataset containing the energy values of particles obtained from the collision of accelerated electrons. The electrons prior to collision were classified according to their masses as light and heavy. The same classification was also performed for the resulting product particles. In the analysis conducted on the dataset, the aim was to predict the

class of the resulting product based on whether the colliding electrons were light or heavy. The classification process was carried out using both classical Naive Bayes and Quantum Naive Bayes methods, and the results were compared. The analyses show that both approaches produce consistent results in terms of classification accuracy. Consequently, this application demonstrates the superiority of the Quantum Naive Bayes method compared to the classical Naive Bayes when applied to a particle-physics-based dataset. This study once again reveals that quantum computing methods offer significant performance advantages. These findings serve as a strong indicator of the potential future contributions of quantum artificial intelligence.

Keywords: Quantum Machine Learning, Naive Bayes, Particle Collisions

AI-Driven Arbitration: The Role of Large Language Models in the Construction Arbitration

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Abstract

There are many reasons why disputes occur in construction, including going over budget, delays, contractual misinterpretations, and technical problems. To settle these disagreements, people often use binding resolution methods, such as arbitration and litigation. Among these, arbitration stands out as the best option because it is fast, cost-effective, preserves relationships, involves decision-makers with specialized construction knowledge, and is confidential. This is especially true for international contractors who are hesitant to litigate under foreign laws. However, the effectiveness of arbitration is mainly dependent on the skills and traits of the tribunal members. Previous studies have demonstrated a mismatch between the intricacy of conflict cases and the proficiency of the designated tribunal members. Thus, a novel approach is required to improve the efficiency of the arbitration from the initial stage of tribunal formation to the final stage of delivering a binding resolution. Integrating AI into arbitration could speed up the process, make data analysis more accurate, and lessen the impact of human bias at all stages of the arbitration process. Large Language Models (LLMs), especially Generative Pre-trained Transformers (GPTs), are a big step forward for AI and natural language processing. This study examines the role of LLMs across various stages of arbitration, including legal research, document examination, data processing, arbitrator selection, and support in the formulation and justification of arbitral decisions. The goal of this method is to make arbitration more efficient and transparent by using data-driven decision-making and intelligent automation.

Keywords: Construction disputes, Arbitration, Large language model, Artificial inteligence

Galleria mellonella Larvalarında Çok Duvarlı Karbon Nanotüplerin Pro-antioksidan Etkilerinin İncelenmesi

Investigation of the Pro-antioxidant Effects of Multi-walled Carbon Nanotubes in Galleria Mellonella Larvae

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Özet

Çok duvarlı karbon nanotüplerin (MWCNT) kronik olarak solunum, sinir, kalp-damar ve üreme sistemlerinde bozulmalara yol açabileceği, bağışıklığı baskılayabileceği ve oksidatif stresi artırabileceği bildirilmiştir, ancak canlılar üzerindeki etkileri henüz yeterince aydınlatılamamıştır. Bu nedenle model organizmalar üzerinde bu tür nanomalzemelerin etkilerinin belirlenmesi oldukça önemlidir. Mevcut çalışmamızda *Galleria mellonella* larval dokularında MWCNT'lerin pro-antioksidan etkileri incelendi. Larvalar beş gruba ayrıldı: kontrol, 50, 100, 500, 1000 ppm. MWCNT'ler, larval gelişim süreleri boyunca larvalara besin yoluyla verildi ve larval homojenatları elde edilmiştir. Doku homojenatlarında malondialdehit (MDA), katalaz (CAT), glutatyon (GSH) ve protein miktarları spektrofotometrik olarak ölçüldü. MDA miktarları 100 ppm ve üzeri dozlarda önemli artışlar gösterdi. CAT aktivitesi ve GSH miktarı tüm MWCNT gruplarında azaldı. Protein miktarı ise en yüksek dozda önemli bir azalma gösterdi. MWCNT uygulanan *G. mellonella* larvalarında doza bağlı bir şekilde pro-antioksidan sistemini etkilediği görüldü. Elde edilen bulgular, MWCNT'nin biyolojik risk oluşturabileceğini ve *G. mellonella*'nın nanomateryallerin nanotoksikolojik etkilerini değerlendirmede güçlü ve uygulanabilir bir model olabileceğini göstermektedir. Aynı zamanda MWCNT'lerin potansiyel sağlık risklerinin altında yatan moleküler mekanizmaların aydınlatılması ile birlikte daha güvenli nanomalzeme tasarımına ve kullanımına katkı sağlayabilmektedir.

Anahtar Kelimeler: Karbon nanotüp, *Galleria mellonella*, malondialdehit, katalaz, glutatyon

Abstract

Multi-walled carbon nanotubes (MWCNT) have been documented to potentially cause impairments in the respiratory, nervous, cardiovascular, and reproductive systems, suppress immunity, and increase oxidative stress, when chronically inhaled;

however, their effects on living organisms have not yet been sufficiently elucidated. Therefore, determining the effects of such nanomaterials on model organisms is crucial. In our current study, the pro-antioxidant effects of MWCNTs were investigated in *Galleria mellonella* larval tissues. Larvae were divided into five groups: control, 50, 100, 500, 1000 ppm. MWCNTs were fed to the larvae via diet throughout their larval development period, and larval homogenates were obtained. Malondialdehyde (MDA), catalase (CAT), glutathione (GSH), and protein levels were determined spectrophotometrically in the homogenates. MDA increased significantly at doses of 100 ppm and above. CAT activity and GSH decreased in all MWCNT groups. Protein decreased substantially at the highest dose. MWCNT affected the pro-antioxidant system in *G. mellonella* larvae in dose-dependent manner. Results indicate that MWCNT may create biological risks and that *G. mellonella* may serve as a robust and applicable model for evaluating the nanotoxicological effects of nanomaterials. Furthermore, elucidating the molecular mechanisms underlying the potential health risks of MWCNT could contribute to the design and usage of safer nanomaterials.

Keywords: Carbon nanotube, *Galleria mellonella*, malondialdehyde, catalase, glutathione

Soğuk Dumanlanmış Atlantik Somon (*Salmo salar* L., 1758) Balığının Tüketim Süreci İçerisindeki Oksidatif Değişimlerin İncelenmesi

Investigation of Oxidative Changes in the Consumption Process of Cold-Smoked Atlantic Salmon (Salmo salar L., 1758)

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Özet

Salmonidae familyasında bulunan ve yaygın olarak tüketilen Atlantik somonu (*Salmo salar*), doymamamış yağ asitleri, yüksek kaliteli protein, vitamin ve mineraller bakımından zengin olması nedeniyle insan sağlığı için önemlidir. Bu nedenle soğuk dumanlanmış somon balığında optimum raf ömrü ve soğuk muhafaza ortamında protein ve oksidatif parametrelerdeki değişimlerin belirlenmesi amaçlandı. Dumanlanmış somon örnekleri 45 gün boyunca 4 ± 1 °C'de saklandı. Belirli günlerde (0, 21 ve 45) alınan dumanlanmış örnekler ile kontrol grubunun protein miktarı, ileri oksidasyon protein ürünleri (AOPP), demir indirgeyici antioksidan gücü (FRAP) ve lipit peroksidasyon ürünü malondialdehit (MDA) spektrofotometrik olarak ölçüldü. Protein miktarı tüm deney gruplarda benzerdi. Soğuk dumanlanmış (0 ve 21.gün) ve kontrol grubunun AOPP miktarları benzer düzeylerde gözlenirken uzun süreli (45. gün) saklamada AOPP artış gösterdi. FRAP miktarında kısa süreli (0. gün) saklamada anlamlı artış gözlenirken uzun süreli (21 ve 45. gün) saklamada anlamlı olmayan azalmalar görüldü. Dumanlanmış örneklerde MDA seviyelerinin daha düşük olduğu görüldü. Soğuk dumanlama işlemi örneklerin protein yapısını ve antioksidan kapasitesini koruyarak oksidatif bozulmayı geciktirdi. Bu durum raf ömrünün uzatılmasına ve tüketiciye daha kaliteli ürün sunulmasına katkı sağlamaktadır.

Anahtar Kelimeler: Atlantik somonu, Dumanlama, Oksidatif stres, Besin değeri.

Abstract

Atlantic salmon (*Salmo salar*), a widely consumed species belonging to the Salmonidae family, is essential for human health due to its richness in unsaturated fatty acids, high-quality protein, vitamins, and minerals. Therefore, the aim was to determine the optimal storage period for cold-smoked salmon and changes protein

and oxidative parameters during cold storage. Smoked salmon samples were stored at 4 ± 1 °C for 45 days. The protein content, advanced oxidation protein products (AOPP), ferric reducing antioxidant power (FRAP), and lipid peroxidation product malondialdehyde (MDA) of smoked samples taken on specific days (0, 21, and 45) and the control group were measured spectrophotometrically. The protein content was similar in all experimental groups. AOPP levels in the cold-smoked (0 and 21 days) and control groups were observed to be at similar levels, while AOPP increased during long-term (45 days) storageFRAP levels were significantly increased during short-term (0 days) storage, while long-term (21 and 45 days) storage caused insignificant decreases. MDA content was lower in smoked samples. Cold smoked samples delayed oxidative deterioration by preserving protein structure and antioxidant capacity. This contributes to extending storage period and providing consumers with higher quality products.

Keywords: Atlantic salmon, Smoking, Oxidative stress, Nutritional value.

AI as Cognitive Extension: Enhancing Human Abilities in Healthcare and Education

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Abstract

As artificial intelligence increasingly integrates into daily life, it raises questions about its potential to augment human cognition and to enhance cognitive abilities. This research explores whether AI can effectively extend human cognitive processes and revolutionise the sectors of healthcare and education. Drawing on the Extended Mind Thesis, augmented intelligence, and cognitive prosthetics frameworks, this study employs a mixed-methods interdisciplinary approach. Quantitative data will be gathered through surveys and experiments measuring AI's impact on cognitive tasks such as memory and decision-making among participants from healthcare and education fields, where AI integration is prominent. Qualitative analysis will examine ethical and social implications through expert interviews with AI ethics and technology specialists. Statistical methods will analyse quantitative data, while thematic analysis will be applied to qualitative findings. This research aims to provide insights into AI's capacity to serve as a cognitive extension tool and its broader implications for human capability enhancement.

Keywords: artificial intelligence, cognitive enhancement, Extended Mind Thesis, augmented intelligence, cognitive prosthetics

Land-use Planning for Morus sp. Cultivation under Natura 2000 Environmental Regulations

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Abstract

Integrating agricultural development with biodiversity conservation in Natura 2000 sites presents significant planning challenges. This research introduces a GIS-based spatial classification system that categorizes land parcels according to the intensity of environmental regulatory requirements for Morus sp. cultivation. The methodology establishes a three-tier framework addressing constraints related to protected territories, permanently grassed areas, forests, waterbodies, and species habitats.

Testing the methodology in a Bulgarian protected area (BG0000254 Besaparski vazvishenita) through GIS database analysis reveals substantial spatial variability in permissible land uses. The analysis identifies that approximately 23.6% of the territory is under strict protection (Tier 1), where cultivation is prohibited. About 21.3% falls under Tier 2 constraints, requiring comprehensive Appropriate Assessment procedures to demonstrate non-significant environmental impact. The remaining 56.4% is classified as Tier 3, where cultivation is permissible with standard environmental notification and screening processes.

The findings demonstrate that strategic land-use planning can identify suitable cultivation areas while respecting conservation priorities. This GIS-based decision-support framework assists evidence-based choices for sustainable agricultural expansion within the Natura 2000 network. The methodology is transferable to other permanent crops and protected areas.

Keywords: Environmental constraints, *Morus* sp., cultivation, Natura 2000

Integrated Urban Flood Governance with an Emphasis on Collaborative Spatial Decision-Making

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Abstract

Urban flood management increasingly relies on adaptive and integrated systems alongside conventional structural measures. This paper proposes a novel, integrated spatial decision-making approach to enhance flood governance. The study emphasizes collaborative stakeholder engagement within a GIS-based multi-criteria decision analysis (MCDA) framework. A toolbox developed within the GIS environment employs the Analytic Hierarchy Process (AHP). The proposed model in this research integrates spatial analysis and stakeholder participation into a spatial planning support system. The case study results in Tehran, Iran demonstrate the practical application of this approach in the field of urban flood governance. A final flood hazard map was produced, classifying the study area into six distinct risk levels. Approximately 6% of the area was classified as very high risk, primarily located in low-slope, high-density regions with inadequate drainage infrastructure. Classes two and three, indicating moderate to high risk, encompassed around 43% of the area, while 42% fell into the low-risk category. A least-cost path analysis was conducted, incorporating land use, slope, and geological criteria, to identify optimal urban runoff collection routes. The analysis reveals that immediate intervention in the drainage system of southeastern areas is essential, and the selected routes, relying on existing infrastructure and favorable topography, resulted in the lowest construction costs. The proposed model provides a replicable approach for integrating expert knowledge and local priorities in flood governance.

Keywords: Flood Governance, Collaborative Planning, GIS, Multi-Criteria Decision Analysis, Urban Resilience

The Relationship between Nutritional Status and the Prevention of Respiratory Infections and Falls in the Elderly Population in Care Homes

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Abstract

Background: Malnutrition in old age is a serious public health problem and has a significant negative impact on the physical, psychological, and social functioning of older people. This study aimed to determine the prevalence of malnutrition in independently mobile nursing home residents and its association with the incidence of falls and respiratory infections.

Methods: The study was conducted on a sample of 148 people of both sexes over the age of 65 living in the nursing homes in Primorje-Gorski Kotar County, Croatia. The standardised questionnaire Mini Nutritional Assessment – Short Form was used to assess nutritional status. Data on the number of infections and falls during the six months from 1 January 2024 to 30 June 2024 were collected retrospectively from the medical records.

Results: Most of the participants were women (75.7%). The average age was 83.6 years. A total of 4.7% of the participants were malnourished, while 35.8% were at risk of malnutrition. Statistical analysis revealed a negative correlation ($r = -0.37$) between the number of respiratory tract infections and cases of malnutrition. However, no correlation was found between the frequency of falls and malnutrition ($r = 0.01$).

Conclusions: Malnutrition and the associated risk are common in elderly care home residents and have a negative impact on respiratory health. Although not associated with falls, the importance of nutrition in maintaining health and preventing complications is critical.

Keywords: fall, malnutrition, mobility, nursing home, older adults, respiratory infections

Helichrysum orientale L.'nin Kozmetikte Kullanım Potansiyelinin Araştırılması

Investigation of the Potential Use of Helichrysum orientale L. in Cosmetics

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Özet

Bu çalışma, Asteraceae familyasına ait daha önce hiç çalışılmamış *Helichrysum orientale* türünün kozmetikte kullanım potansiyelini değerlendirmek amacıyla yürütülmüştür. Bitkinin herba (HOH) ve kapitulum (HOK) kısımlarından elde edilen ekstreler fenolik ve flavonoid içerikleri açısından incelenmiş, antioksidan aktiviteleri (ABTS, DPPH, CUPRAC yöntemleri) ve tirozinaz enzimi üzerindeki inhibitör etkileri araştırılmıştır. Bulgular, HOK ekstresinin en yüksek toplam fenolik (289,52 mg GAE/g) ve flavonoid (91,15 mg QE/g) içeriğe sahip olduğunu göstermiştir. Antioksidan testlerinde HOH ekstresi DPPH yönteminde %46,81 ile en yüksek aktiviteyi gösterirken, HOK ekstresi ABTS (1,18 mg TE/g) ve CUPRAC (2,77 mg TE/g) yöntemlerinde öne çıkmıştır. Her iki ekstre de tirozinaz enzimi üzerinde yaklaşık %64 inhibisyon göstermiş, IC_{50} değerleri HOK için 238 µg/mL, HOH için 293 µg/mL olarak bulunmuştur. LC-MS analizleri, özellikle astragalin'in kapitulum ekstresinde 93,49 mg/g gibi oldukça yüksek konsantrasyonda bulunduğunu ortaya koymuş ve bu bulgu literatürde ilk kez rapor edilmiştir. Elde edilen sonuçlar, *H. orientale*'nin antioksidan, tirozinaz inhibitör özellikleri ve zengin flavonoid içeriğiyle kozmetik formülasyonlarda yeni bir doğal aktif bileşen olarak kullanılabileceğini göstermektedir.

Anahtar Kelimeler: Helichrysum orientale; antioksidan aktivite; tirozinaz inhibisyonu; astragalin; kozmetik potansiyel

Abstract

This study aimed to evaluate the potential use of *Helichrysum orientale* (Asteraceae) in cosmetics, which has not been previously investigated in this context. Extracts prepared from the herba (HOH) and capitulum (HOK) parts of the plant were examined for their phenolic and flavonoid contents, antioxidant activities (ABTS, DPPH, CUPRAC assays), and inhibitory effects on tyrosinase enzyme. The results showed that the HOK extract had the highest total phenolic (289.52 mg GAE/g) and flavonoid (91.15 mg QE/g) contents. In antioxidant assays, HOH exhibited the highest activity in the DPPH method (46.81%), whereas HOK demonstrated superior activity in ABTS (1.18 mg TE/g) and CUPRAC (2.77 mg TE/g) assays. Both extracts inhibited tyrosinase enzyme activity by approximately 64%, with IC_{50} values of 238 µg/mL (HOK) and 293 µg/mL (HOH). LC-MS analyses revealed remarkably high levels of astragalin, particularly in the capitulum extract (93.49 mg/g), which is reported for the first time in *H. orientale*. These findings indicate that *H. orientale*, with its strong antioxidant and tyrosinase inhibitory activities and rich flavonoid profile, has significant potential as a novel natural active ingredient in cosmetic formulations.

Keywords: Helichrysum orientale; antioxidant activity; tyrosinase inhibition; astragalin; cosmetic potential

Cone Beam Computed Tomography (CBCT): A Useful Tool in Pediatric Dentistry

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Abstract

Introduction: Cone Beam Computed Tomography (CBCT) is increasingly used in pediatric dentistry, offering three-dimensional (3D) imaging of the maxillofacial skeleton, dentition, and surrounding structures. It enhances diagnosis and treatment planning for various pediatric conditions, including supernumerary and impacted teeth, root resorption, craniofacial anomalies, Trauma and hard tissue lesions.

Observation: This presentation discusses three pediatric case reports demonstrating the clinical value of CBCT:

- **Case 1**: A patient with supernumerary teeth, where CBCT allowed precise localization and evaluation of the supernumerary tooth's position relative to adjacent structures.
- **Case 2**: A case involving an endodontic lesion that developed after dental trauma. CBCT provided detailed imaging of the lesion and periapical area, aiding in accurate diagnosis and guiding the endodontic treatment plan.
- **Case 3**: A mandibular trauma case, where CBCT revealed the extent of the fracture and the condition of surrounding bone and dentition, facilitating appropriate management.

Discussion: CBCT has proven to be a powerful diagnostic tool in pediatric dentistry, particularly in complex or unclear cases. However, its use must be justified due to radiation exposure, particularly in children. The presented cases illustrate how CBCT contributes to precise diagnosis, improved treatment planning, and better clinical outcomes when appropriately applied in pediatric dental care.

Keywords: CBCT, Pediatric denttistry, Trauma, Endodontic treatment, supernumrary teeth, diagnosis, treatment

The Relationship of Quorum Sensing Genes and Drug Resistance in Clinically Significant Strains of Pseudomonas Aeruginosa

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Abstract

Pseudomonas aeruginosa is a major opportunistic pathogen and part of the ESKAPE group of bacteria known for high levels of antibiotic resistance and mortality. This study investigates the relationship between quorum sensing (QS) genes, biofilm formation, and antimicrobial resistance in clinical strains of P. aeruginosa. QS Systems, including Las, Rhl, Iqs, and Pqs, regulate virulence factors and enhance biofilm development, which in turn protects bacteria against third- and fourth-generation cephalosporin and other antibiotics. In 2023, 23 isolates were collected from patients of the urology department at SRBHI NRH, and resistance was evaluated using the VITEK analyzer. Genetic determinants were further analyzed in 132 isolates by PCR. Results revealed high resistance to aztreonam and multidrug resistance in several strains. Metallo-β-lactamase genes, particularly NDM, were dominant, being present in 98.43% of isolates, while VIM was detected in 1.56%. These findings confirm the strong correlation between QS-controlled biofilm formation and resistance mechanisms, highlighting the emergence of “superbugs” resistant to nearly all available antibiotics. The study emphasizes the urgent need for molecular genetic monitoring and targeted infection control strategies to combat rising nosocomial infections caused by P. aeruginosa.

Keywords: Quorum sensing, P.aeruginosa, antibiotic resistance, multidrug resistance, nosocomial infections