ISPEC INSTITUTE

BOOK OF

ABSTRACTS

11. INTERNATIONAL CONGRESS ON CONTEMPORARY SCIENTIFIC RESEARCH

JULY 01-07, 2026 | BALTIC STATES & FINLAND

EDITOR

Assoc. Prof. Dr. Ayhan DAĞDEVİREN

BOOK OF ABSTRACTS

11TH INTERNATIONAL

ISPEC CONGRESS ON CONTEMPORARY SCIENTIFIC RESEARCH

July 01-07, 2026 Baltic States and Finland

EDITOR

Assoc. Prof. Dr. Ayhan DAĞDEVİREN

Date: 30.07.2026

Liberty Publishing House

Water Street Corridor New York, NY 10038

www.libertyacademicbooks.com

+1 (314) 597-0372

ISBN: 979-8-89695-499-6

https://www.ispecongress.org/

BOOK OF ABSTRACTS · ispecongress.org

ISPEC 11TH INTERNATIONAL CONGRESS ON CONTEMPORARY SCIENTIFIC RESEARCH

July 01-07, 2026
Baltic States & Finland

ORGANIZING INSTITUTION

CONGRESS ID

CONGRESS TITLE
ISPEC 11TH INTERNATIONAL CONGRESS ON CONTEMPORARY SCIENTIFIC RESEARCH

DATE
July 01-07, 2026

PLACE
Baltic States & Finland
Face-to-face & Online (Zoom)

PARTICIPANT COUNTRIES (21)

Turkey, Morocco, Nigeria, Azerbaijan, India, Pakistan, Algeria, Bangladesh, Turkish Republic of Northern Cyprus, Georgia, Kazakhstan, Poland, Indonesia, Portugal, Albania, Vietnam, Ukraine, United States, Brunei, Romania, Hungary

164	28	79	85
TOTAL ACCEPTED PAPERS	TOTAL REJECTED PAPERS	PAPERS FROM TURKIYE	INTERNATIONAL PARTICIPANTS

EVALUATION PROCESS & PRESENTATION
All applications have undergone a double-blind peer review process · Oral Presentations

CONGRESS PRESIDENT & ORGANIZING COMMITTEE

Dr. Ayhan DAGDEVIREN
Congress President · Cankiri Karatekin University, Turkiye

Dr. Ahmet TAYFUN
Ankara Haci Bayram Veli University, Turkiye

Dr. Arzu HUSEYN
Azerbaijan Tourism and Management University, Azerbaijan

Dr. Derya OCAL
Ataturk University, Turkiye

Dr. Gamal A. EL-HITI
King Saud University, Saudi Arabia

Dr. Hiroshi SAKAGAMI
Meikai University Research Institute of Odontology, Japan

Dr. Huseyin OZDEMIR
Cankiri Karatekin University, Turkiye

Dr. Joel T. MAGUE
Tulane University, USA

Dr. Mahbub PARVEZ
Daffodil International University, Bangladesh

Dr. Mehmet Firat BARAN
Siirt University, Turkiye

Dr. Mehmet GUNES
Dicle University, Turkiye

Dr. Nada Kheira SEBBAR
Laboratoire de Chimie Organique, Morocco

Dr. Naryngul MARGAZIEVA
Kyrgyz-Turkish Manas University, Kyrgyzstan

Dr. Necmi DEGE
Ondokuz Mayis University, Turkiye

Dr. Noureddine ISSAOUI
University of Monastir, Tunisia

Dr. Sevgi KANSIZ
Samsun University, Turkiye

Dr. Silvia A. BRANDAN
Argentina

Dr. Tugce BASER
University of California San Diego, USA

Dr. Younos BOUZIAN
Universite Mohammed V in Rabat, Morocco

SCIENTIFIC AND ADVISORY BOARD

Dr. Abdullah KAPLAN
Suleyman Demirel University, Turkiye

Dr. Ahmet GOKCE
Cumhuriyet University, Turkiye

Dr. Ahmet Hakan YILMAZ
Karadeniz Technical University, Turkiye

Dr. Alexander RICHTER
Green Energy Geothermal Ltd.

Dr. Ali Ercan EKINCI
Erzincan University, Turkiye

Dr. Ali SARI
Ankara University, Turkiye

Dr. Alper BABA
Izmir Institute of Technology, Turkiye

Dr. Asim A. BALAKIT
Babylon University, Iraq

Dr. Asim SOYLU
Nigde Omer Halis Demir University, Turkiye

Dr. Ayhan KARA
Sinop University, Turkiye

Dr. Ayse GUNES TANIR
Gazi University, Turkiye

Dr. Ayse KASKAS
Ankara University, Turkiye

Dr. Ayse ORHAN
Nevsehir Haci Bektas Veli University, Turkiye

Dr. Bahattin GULLU
Aksaray University, Turkiye

Dr. Bulent GONUL
Gaziantep University, Turkiye

Dr. Cagri CIRAK
Erzincan University, Turkiye

Dr. Cagri SURUCU
Cankiri Karatekin University, Turkiye

Dr. Derya KOCA
Batman University, Turkiye

Dr. Dhaybia DOUCHE
Universite Mohammed V in Rabat, Morocco

Dr. Erol KURT
Gazi University, Turkiye

Dr. Fabio CRESPI
Universita Degli Studi Di Milano-INFN, Italy

Dr. Fatih UCUN
Suleyman Demirel University, Turkiye

Dr. Fetullah ARIK
Konya Teknik University, Turkiye

Dr. Gamal A. EL-HITI
King Saud University, Saudi Arabia

Dr. Gokhan KOCAK
Erciyes University, Turkiye

Dr. Gulcan BOZKAYA
Pamukkale University, Turkiye

Dr. Halil GOKCE
Giresun University, Turkiye

Dr. Halim MUTLU
Ankara University, Turkiye

Dr. Ibrahim DINCER
University of Ontario, Canada

Dr. Ihsan ULUER
Karabuk University, Turkiye

Dr. Ismail BOZTOSUN
Akdeniz University, Turkiye

Dr. Jaime MELLA
University of Valparaiso, Chile

Dr. Joel T. MAGUE Tulane University, USA	**Dr. Kadir ESMER** Marmara University, Turkiye
Dr. Katarzyna CZECH Warsaw University of Life Sciences, Poland	**Dr. Kerim COSKUN** Siirt University, Turkiye
Dr. Leyla KALENDER Firat University, Turkiye	**Dr. Losif VOLFSON** KTH Royal Institute of Technology, Sweden
Dr. Lutfi OKSUZ Suleyman Demirel University, Turkiye	**Dr. Mahendra MADEGOWDA** Karnataka, India
Dr. Mahmut DOGRU Bitlis Eren University, Turkiye	**Dr. Marilena FERBINTEANU** Romania
Dr. Mehmet ALTUNSOY Akdeniz University, Turkiye	**Dr. Mehmet CELIK** Ankara University, Turkiye
Dr. Mehmet ERTUGRUL Ataturk University, Turkiye	**Dr. Mehmet N. KUMRU** Ege University, Turkiye
Dr. Mehmet TUNCER Aksaray University, Turkiye	**Dr. Mehtap TUGRAK SAKARYA** Tokat Gaziosmanpasa University, Turkiye
Dr. Michal WOJTASZEK Warsaw University of Life Sciences, Poland	**Dr. Mikail KARA** Cankiri Karatekin University, Turkiye
Dr. Murat AYGUN Bitlis Eren University, Turkiye	**Dr. Murat BAYRAM** Pamukkale University, Turkiye
Dr. Mustafa KOSCU Suleyman Demirel University, Turkiye	**Dr. Nada Kheira SEBBAR** Laboratoire de Chimie Organique, Morocco
Dr. Necmi DEGE Ondokuz Mayis University, Turkiye	**Dr. Nils PAAR** University of Zagreb, Croatia
Dr. Nizamettin ERDURAN Istanbul Zaim University, Turkiye	**Dr. Noureddine ISSAOUI** University of Monastir, Tunisia
Dr. Nuri OZEK Suleyman Demirel University, Turkiye	**Dr. Nuri OZTURK** Giresun University, Turkiye
Dr. Olena MELNYK Sumy National Agrarian University, Ukraine	**Dr. Orhan BAYRAK** Akdeniz University, Turkiye
Dr. Omer BOZKAYA Pamukkale University, Turkiye	**Dr. Omer YAVAS** Ankara University, Turkiye
Dr. Pall THORDARSONG University of New South Wales, Australia	**Dr. Pervin AKTUNA ARIKAN** Gazi University, Turkiye
Dr. Saleh SULTANSOY TOBB University of Eco. & Technology, Turkiye	**Dr. Sambantham MUTHU** Aringnar Anna Govt. Arts College, India
Dr. Sefa ERTURK Nigde Omer Halis Demir University, Turkiye	**Dr. Selva BUYUKAKKAS** Nigde Omer Halis Demir University, Turkiye
Dr. Serkan AKKOYUN Cumhuriyet University, Turkiye	**Dr. Silvia A. BRANDAN** Argentina
Dr. Sinan ALTUNCU Nigde Omer Halis Demir University, Turkiye	**Dr. Sumer SAHIN** Atilim University, Turkiye
Dr. Sukru KOC Ankara University, Turkiye	**Dr. Tayfun AKYUREK** Marmara University, Turkiye
Dr. Tugce BASER University of California San Diego, USA	**Dr. Tuncay BAYRAM** Sinop University, Turkiye
Dr. Uner COLAK Istanbul Technical University, Turkiye	**Dr. Yann GARCIA** Louvain-la-Neuve, Belgium
Dr. Yasemin KUCUK Akdeniz University, Turkiye	**Dr. Yasar USLU** Anadolu University, Turkiye
Dr. Yasar EREN Konya Teknik University, Turkiye	**Dr. Yener EYUBOGLU** Karadeniz Technical University, Turkiye
Dr. Yesim OZEN Konya Teknik University, Turkiye	**Dr. Younos BOUZIAN** Universite Mohammed V in Rabat, Morocco
Dr. Yuriy DANKO Sumy National Agrarian University, Ukraine	**Dr. Yusuf Kagan KADIOGLU** Ankara University, Turkiye

11. INTERNATIONAL CONGRESS ON CONTEMPORARY SCIENTIFIC RESEARCH

JULY 01-07, 2026 / BALTIC STATES & FINLAND

PROGRAMME

SCIENCE • INNOVATION • COLLABORATION • IMPACT

ESTONIA | LATVIA | LITHUANIA | FINLAND

03.07.2026 / IN-PERSON SESSION-1

Riga Local Time: 09:00-11:30 | Radisson Blu Hotel & Spa, Daugava Riga

HEAD OF SESSION: Dr. DERYA OCAL

Authors	Affiliation	Presentation Title
OSMAN MERT YAZ BAHADIR DEMIREL	Erciyes University	Comparison of the physical and mechanical properties of pellets produced from safflower biomass prepared at different grinding sizes
BAHADIR DEMIREL OSMAN MERT YAZ	Erciyes University	Structural and functional evaluation of a robotic arm developed for an autonomous harvesting robot
SEMRA BENZER RECEP BENZER	Gazi University	Analysis of growth characteristics of invasive Atherina boyeri using artificial intelligence and classical methods
SERVET UZTEMUR ABDURRAHMAN ILGAN AYLIN KIRISCI-SARIKAYA	Anadolu University	Examining teachers' perceptions of school principals' hubristic behaviors by school level and teaching branch
DERYA OCAL	Ataturk University	Transhumanism and the biological limits of humanity: technological intervention, bodily transformation, and ethical debates
MURAT ATESLI	Anadolu University	Catastrophic images in contemporary Turkish painting
YASAR USLU	Anadolu University	An analysis of mayday posters within the framework of postcolonial theory
SERVET UZTEMUR ALI GOKALP MURAT POLAT FEYZA DALAYLI PO CHING HUANG DANIEL KWASI AHORSU CHUNG-YING LIN	Anadolu University	Measuring conspiracy beliefs in social media contexts: development and validation of the social media conspiracy beliefs scale
TURKAN PASALI KILIT IBRAHIM USLU BEYZA ORUC SUDE ORMECI DUYGUCAN KARAOGLAN MUHAMMED EMIN DEMIRCI BEGUM CALISKAN PERIHAN SECIL YACAN HATICE EZGI TURKDONMEZ MUSTAFA YAYLA UFUK ERKURT	Kutahya Health Sciences University	The effect of menopause duration on clinical, biochemical, menopausal symptom, and depression parameters in postmenopausal women: a comparison of early and late postmenopause
ÇAGLAR AKAR	Istanbul Okan University	Normative agent-based framework for policy prioritization under conflict and poverty shocks
OZBIL OZMEN	Istanbul Okan University	Comparative evaluation of 3D printed polymer materials using finite element analysis

03.07.2026 / IN-PERSON SESSION-2

Riga Local Time: 09:00-11:30 | Radisson Blu Hotel & Spa, Daugava Riga

HEAD OF SESSION: Dr. AYHAN DAGDEVIREN

Authors	Affiliation	Presentation Title
CIHAN YUKSEL	Mersin University	The real erosive effect of inflation on corporate income tax revenues: evidence from Türkiye
AYNUR PALA	Manisa Celal Bayar University	Examining the effects of distance education on values education
SELCUK KILIC	Erzincan Binali Yildirim University	Integrated in silico evaluation of the putative effect of e-6801 on β-secretase 1 (bace1), an Alzheimer's disease-associated enzyme, using DFT, ADME, and molecular docking approaches
SELCUK KILIC	Erzincan Binali Yildirim University	Computational Preliminary Insights into TLR7/8-Mediated Immunomodulation: A Schrödinger Glide-Based Molecular Docking Analysis of the Imidazo[4,5-c]quinoline Derivative IT-37 with Human Toll-like Receptor 8
YUSUF SERT	Yozgat Bozok University	DFT studies of 1,3-benzodioxole-5-sulfonamide
YUSUF SERT	Yozgat Bozok University	MEP and docking analysis of 1,3-benzodioxole-5-sulfonamide
AYHAN DAGDEVIREN IBRAHIM MERCIMEK	Cankiri Karatekin University	Latvian culinary culture
IBRAHIM MERCIMEK AYHAN DAGDEVIREN	Cankiri Karatekin University	Health tourism policies and practices in Lithuania
AHMET UNLU	Ministry Of Education	Traces of hunting culture in Satılmış Sen's poetry

Önemli, Dikkatle Okuyunuz Lütfen

- ✓ Kongremizde Yazım Kurallarına uygun gönderilmiş ve bilim kurulundan geçen bildiriler için online (video konferans sistemi üzerinden) sunum imkanı sağlanmıştır.
- ✓ Online sunum yapabilmek için **https://zoom.us/join** sitesi üzerinden giriş yaparak "Meeting ID or Personal Link Name" yerine ID numarasını girerek oturuma katılabilirsiniz.
- ✓ Zoom uygulaması ücretsizdir ve hesap oluşturmaya gerek yoktur.
- ✓ Zoom uygulaması kaydolmadan kullanılabilir.
- ✓ Uygulama tablet, telefon ve PC'lerde çalışıyor.
- ✓ Her oturumdaki sunucular, sunum saatinden 15 dk öncesinde oturuma bağlanmış olmaları gerekmektedir.
- ✓ Tüm kongre katılımcıları canlı bağlanarak tüm oturumları dinleyebilir.
- ✓ Moderatör – oturumdaki sunum ve bilimsel tartışma (soru-cevap) kısmından sorumludur.

Dikkat Edilmesi Gerekenler- TEKNİK BİLGİLER

- ✓ Bilgisayarınızda mikrofon olduğuna ve çalıştığına emin olun.
- ✓ Zoom'da ekran paylaşma özelliğine kullanabilmelisiniz.
- ✓ Kabul edilen bildiri sahiplerinin mail adreslerine Zoom uygulamasında oluşturduğumuz oturuma ait ID numarası gönderilecektir.
- ✓ Katılım belgeleri kongre sonunda tarafınıza pdf olarak gönderilecektir
- ✓ Kongre programında yer ve saat değişikliği gibi talepler dikkate alınmayacaktır

IMPORTANT, PLEASE READ CAREFULLY

- ✓ To be able to attend a meeting online, login via **https://zoom.us/join** site, enter ID "Meeting ID or Personal Link Name" and solidify the session.
- ✓ The Zoom application is free and no need to create an account.
- ✓ The Zoom application can be used without registration.
- ✓ The application works on tablets, phones and PCs.
- ✓ The participant must be connected to the session 15 minutes before the presentation time.
- ✓ All congress participants can connect live and listen to all sessions.
- ✓ Moderator is responsible for the presentation and scientific discussion (question-answer) section of the session.

Points to Take into Consideration - TECHNICAL INFORMATION

- ✓ Make sure your computer has a microphone and is working.
- ✓ You should be able to use screen sharing feature in Zoom.
- ✓ Attendance certificates will be sent to you as pdf at the end of the congress.
- ✓ Requests such as change of place and time will not be taken into consideration in the congress program.

Before you login to Zoom please indicate your name_surname and HALL number, exp. Hall-1, Awais Khan

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

https://us02web.zoom.us/j/84460010824?pwd=szngkWyokXVOBDbeIkdwnaaxB08k1v.1

02.07.2026 / ONLINE SESSION-1 / HALL-1

Riga Local Time: 10:00-12:00 | Ankara Local Time: 10:00-12:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. GULLU ABDIYEVA

Authors	Affiliation	Presentation Title
OGUZHAN DANIS	Yozgat Bozok University	The problem of comparability of financial statements in a high-inflation environment: A literature review from the perspective of accounting standards and financial reporting
OGUZHAN DANIS	Yozgat Bozok University	The role of AI-supported management accounting information in strategic decision-making processes
FERHAT ATIK	Girne American University	Simulation of truth: Rethinking the relationships among reality, representation, and faith in post-truth regimes
GULLU ABDIYEVA	Azerbaijan Medical University	Botulinum toxin after hemorrhoidectomy
MUSTAFA MAJID MADLOOL AL_KHAZRAJI IRFAN KURTBAS	Hitit University	Experimental investigation of time-dependent heat and mass transfer behavior under frosting conditions in cryogenic ambient air vaporizers
DOGUKAN UZUNKAYA EBRU ACUNER TURET	Istanbul Technical University	Analysis of energy poverty and gender inequality
MUSTAFA DURSUNLAR	Yozgat Bozok University	Comparative analysis of manual and robotic welding applications in railway vehicle chassis manufacturing
ILHAN CAKIL MEHMET OZER FATIH BALIKOGLU	Balikesir University	Investigation of the quasi-static mechanical behavior of asymmetric inter-ply hybrid double-curved composite structures

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-1 / HALL-2

Riga Local Time: 10:00-12:00 | Ankara Local Time: 10:00-12:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. GAFARLI (QAFAROV) RAMAZAN

Authors	Affiliation	Presentation Title
FIDAN ASKEROVA	Azerbaijan University Of Languages	Opportunities for implementing the Education 4.0 model at the undergraduate level
BOLA CHRISTIE ATULOMAH ORJIME ANN NGUNAN	*Federal University of Technology Ilaro Ogun State*	Repositioning Academic Libraries in the Digital Age: Factors Influencing Low Library Patronage among Students in Nigerian Tertiary Institutions
GAFARLI (QAFAROV) RAMAZAN	Amea Institute Of Folklore	Folklore theories of epic memory: In the context of Turkic and European epics
AYTEN NAHIDE KORKMAZ MUSTAFA OZYESIL	Istanbul Aydin University	Climate policy uncertainty, green bonds, and stock market resilience: Evidence from European listed energy and utility firms
AYTEN NAHIDE KORKMAZ HASAN AGAN KARADUMAN	Istanbul Aydin University	A green approach to the circular bioeconomy, climate change, and the environment
AHMET KÖSE DENIZ ÖZGÜR BERFIN KILINÇ	Kırıkkale University	Comparison of the Effects of Different Inoculation Methods on *Fusarium oxysporum* f. sp. melongenae-Induced Disease Development and Morphological Parameters in Local Hasan Dede and Commercial Eggplant Cultivars
MUHAMMET TALHA ERIKEL ISMAIL ENES PARLAK	Bursa Technical University	A comparative evaluation of YOLOv8, YOLO11, and Faster R-CNN architectures for in-vehicle firearm and knife detection
DENIZ KIZIR MUSA ESIT OSMAN GUNAYDIN ZEYNEB KILIC	Adiyaman University	Multidimensional trend analysis of meteorological changes in the Thrace region, Türkiye (1965–2025)
OSMAN USLU	Afyon Kocatepe University	Demographic predictors of internet usage time and social comparison: A quantitative study

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-1 / HALL-3	
Riga Local Time: 10:00-12:00	Ankara Local Time: 10:00-12:00
Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456	

HEAD OF SESSION: Dr. HUSEYIN OZDEMIR

Authors	Affiliation	Presentation Title
OSMAN USLU	Afyon Kocatepe University	Is cyberloafing always harmful? Reconsidering positive outcomes in digital workplaces
BERKAY KARACOR MELTEM OZKAN	Cukurova University	Finite element analysis of low-bed trailer ramps with different design geometries using two different materials
BERKAY KARACOR MURAT SURKUC	Cukurova University	Investigation of the structural and weight optimization of vehicle roof-rack mounting brackets using finite element analysis
SERAP DUMAN GULUMSER GULTEKIN AKDUMAN	Gazi University	An examination of factors influencing peer relationships among preschool children using CHAID analysis
HUSEYIN OZDEMIR	Cankiri Karatekin University	The effect of entrepreneurship education on the entrepreneurial tendencies of tourism undergraduate students: The case of Cankiri Karatekin University
SEVGI KANSIZ	Samsun University	Theoretical calculations and in silico drug-likeness of a nitrophenyl schiff base
SEVGI KANSIZ	Samsun University	Molecular surface analysis, molecular docking, and adme investigation of a nitrothiophene-containing schiff base
HUSEYIN OZDEMIR	Cankiri Karatekin University	A study on health tourism awareness among tourism undergraduate students: The case of Cankiri Karatekin University
MURAT OLTULU	Ankara University	Bridge terms enabling conceptual transformation in Qur'anic semantics: 'Ilm, tilāwah, idhn, and waḥy
BUKET KAYIŞLI ARKADAŞ	*İnönü* University	The human–nature relationship in the context of sufi cosmic human understanding and modern human philosophy

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-1 / HALL-4

Riga Local Time: 10:00-12:00 | Ankara Local Time: 10:00-12:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. BUI XUAN VUONG

Authors	Affiliation	Presentation Title
INA ZELA	Mediterranean University of Albania	A comparative assessment of alternative methods for estimating the non-observed economy
ATULOMAH BOLA CHRISTIE KUMOYE DANIEL OLALEKAN	*Federal University of Technology Ilaro*	A review of open-source integrated library systems and sustainable library services in Nigerian universities
BOLA CHRISTIE ATULOMAH ODUMADE ADEPERO OLAJUMOKE	*Federal University of Technology Ilaro*	Information literacy skills and the management of fake news among university students in the post-truth era
BUI XUAN VUONG	*Sai Gon University*	Bleaching of kaolinite mineral to enhance whiteness and reduce iron oxide content
OKAILI OUMAIMA RAFII MOHAMED HATTABI MOHAMED	*Hassan II University*	Aeroelastic design of high-aspect-ratio wings incorporating structural batteries
OUASSILA RIOUCHI KHALID ELKALAY MOURAD BAGHOUR	*Cadi Ayyad University*	Dynamics of small pelagic fish and plastic debris distribution in marine ecosystems
OUASSILA RIOUCHI KHALID ELKALAY MOURAD BAGHOUR	*Cadi Ayyad University*	Ingestion of microplastics by fish
PRITHEERAJ SEN MAINAN RAY CAESAR ROY	*Amity University Kolkata*	Evaluating the effectiveness of Indians regulatory response to single-use plastics: strategies for adaptive capacity building and futuristic trends

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-1 / HALL-5

Riga Local Time: 10:00-12:00 | Ankara Local Time: 10:00-12:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. K.R. PADMA

Authors	Affiliation	Presentation Title
SUMON HOSSAIN SADIA ISLAM SHAKIL AHMED TARIQ-AL KASIF	*University of Rajshahi*	Biological traits of glossogobius giuris (hamilton, 1822) in a wetland ecosystem (nw bangladesh): implications for sustainable, fisheries management
I. EL FENGOUCHI N. LAHLOUHI R. HSISSOU L.C. COSTA M. EL HASNAOUI	*Ibn-Tofail University*	Novel pentafunctional epoxy polymer: preparation, structural and optical characterization
SONDE DIMEJI ROTIMI	*Sai Gon University*	Waiting for the truck: an evaluation of the psychological effects of delayed deliveries on customers and supply chain personnel in Nigeria
BUI XUAN VUONG	*Sai Gon University*	Bleaching of kaolinite mineral to enhance whiteness and reduce iron oxide content
OUASSILA RIOUCHI KHALID ELKALAY MOURAD BAGHOUR	*Cadi Ayyad University*	Transfer of microplastics from the marine environment to humans through the food chain
SANIA ABID SYED MOHSAN RAZA SHAH ARSHIA ZIA	*University Of Education*	Role of neem leaf extract in the morpho-anatomical and physiological response of pennisetum glaucum (l.) r. br. under water deficit conditions
OKAILI OUMAIMA RAFII MOHAMED HATTABI MOHAMED	*Hassan Ii University*	Aeroelastic design of high-aspect-ratio wings incorporating structural batteries
HANANE MAHROUG KHALIL OUKEBDANE CHERIFA HAKIMA MEMOU FATIMA ZAHRA BENHACHEM	*University Centre Of Maghnia*	Lignocellulosic sawdust as a low-cost adsorbent for the removal of brilliant green and bemacid blue
K.R. PADMA	*Women's University*	Reconceptualizing herbal knowledge: indigenous plant-derived remedies for covid-19 in India

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-1 / HALL-6

Riga Local Time: 10:00-12:00 | Ankara Local Time: 10:00-12:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. TUHINA SINHA

Authors	Affiliation	Presentation Title
BASHIR AHMAD USMAN YANKUZO ALHASSAN YUNUSA ALKALI MOHAMMED JIBRIL ABUBAKAR A. EJIKO MOHAMMED MAISHERA	*Federal University Of Technology Minna Niger State*	The impact of security challenges on emerging technology in mathematics, engineering, technology, and science (mets) education lecturers in universities
TUHINA SINHA	*Amity University Jharkhand*	Optimizing efficiency in cross-border trade: a transaction cost economics approach to online dispute resolution (odr)
NUNO BAPTISTA MÁRIO ANTÃO FIRMINO ALMEIDA	*Lusíada University*	Uncertainty in business strategy
NUNO BAPTISTA MÁRIO ANTÃO	*Lusíada University*	A social capital approach to study coopetition involving smes
MELIK SAMI KHELIL SARA TALLAL ABDEL KARIM BOUZIR	*Mohamed Khider Biskra University*	Illuminating experience: the role of light in shaping emotional and perceptual responses in architecture
MELIK SAMI KHELIL SARA TALLAL ABDEL KARIM BOUZIR	*Mohamed Khider Biskra University*	Fragmentation and continuity: reconciling cubist aesthetics with spatial coherence in architecture
MELIK SAMI KHELIL SARA TALLAL ABDEL KARIM BOUZIR	*Mohamed Khider Biskra University*	Computational morphogenesis in architecture: parametric strategies for integrating form and structural logic
MELIK SAMI KHELIL SARA TALLAL ABDEL KARIM BOUZIR	*Mohamed Khider Biskra University*	Bridging dimensions: methodologies for converting two-dimensional abstraction into three-dimensional architecture.
MELIK SAMI KHELIL SARA TALLAL ABDEL KARIM BOUZIR	*Mohamed Khider Biskra University*	Reconceptualizing architecture as art: integrating fine art methodologies into spatial design practice

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-1	
Riga Local Time: 12:30-14:30	Ankara Local Time: 12:30-14:30
Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456	

HEAD OF SESSION: Dr. CEMILE DURSUN

Authors	Affiliation	Presentation Title
SEVIN AKSOY SACIDE PEHLIVAN	Istanbul University	Beyond genetic determinism: A genomic and developmental framework for autism risk assessment
CEMILE DURSUN BEKIR GULER	Bartin University	Artificial intelligence and science education: current trends and a thematic review (2023–2026)
Z. GONUL BALKIR ALTAY ILTAN AKTURK ECEM KOCAOGLAN	Cyprus Aydin University	Communicative rationality and the problem of legal legitimacy in Habermas
Z. GONUL BALKIR ALTAY ILTAN AKTURK ECEM KOCAOGLAN	Cyprus Aydin University	Analysis of the impact of international law on the protection of marine ecosystems in Cyprus
GULSAH BALABAN AHMET SAIM GULSOY AZRA TOPCU KUBRA ISIK	Istanbul Sabahattin Zaim University	Childhood traumas and dream themes: The mediating role of belief in paranormal events
Mehmet Doğan Mehmet Zeki Acar	*Mardin Artuklu University*	Future professions: artificial intelligence and smart agriculture technologies in agriculture
SUHEDA GOKDAS MUSA ESIT ZEYNEB KILIC	Adiyaman University	The impact of climate change on hydro-meteorological parameters: Integration of classical tests with ITA and IPTA methods

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-2

Riga Local Time: 12:30-14:30 | Ankara Local Time: 12:30-14:30

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. NIHAL KILIC

Authors	Affiliation	Presentation Title
KUBRA KOC NIHAL KILIC	Tekirdag Namik Kemal University	Obligate ectoparasites of human skin: biology and ecology of demodex mites
NIHAL KILIC KUBRA KOC HAVVA GOKTEPE FATMA BETUL TIRPAN	Tekirdag Namik Kemal University	Effects of different doses of a locally produced diatomaceous earth (detech wp90) on *tetranychus urticae* koch (acari: tetranychidae) and the predatory mite phytoseiulus persimilis athias-henriot (acari: phytoseiidae) under laboratory conditions
MUSTAFA DEMIR ALI CAN TELLIOGLU AYLUT DANA MURAT SEN	Vehicle Systems Chief	Integrated evaluation of forklift fork design, analysis, and testing processes
AYSE GUL AKCA ASLI ERGENEKON ARSLAN	Bilecik Seyh Edebali University	Evaluation of teachers' psychological preparedness levels for disaster threats: the case of Eskişehir
YILMAZ ISIK MUSA ESIT MEHMET FATIH SAHAN	Adiyaman University	Statistical trend analysis of precipitation and temperature parameters in Türkiye's mediterranean region
ISMAIL YILDIRIM MUSA ESIT YALCIN YILMAZ	Adiyaman University	Long-term climate trends in Türkiye's southeastern Anatolia region using classical and innovative statistical methods
PETEK GOKCE OZUN OZAN ERCAN EMRE BICER	Sivas University of Science and Technology	Electrochemical modeling of li-ion batteries using comsol multiphysics

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-3

Riga Local Time: 12:30-14:30 | Ankara Local Time: 12:30-14:30

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. MEHMET FATIH CAN

Authors	Affiliation	Presentation Title
MEHMET FATIH CAN	Iskenderun Technical University	Fisheries management risk assessment under climate change: a conceptual framework for climate-resilient fisheries
HILAL AKCIL GOKHAN RIFAT KOCYIGIT ONDREJ HOJDA	Mimar Sinan Fine Arts University	Institutional challenges in architectural design competitions: a comparative analysis of Türkiye and European countries (2016–2024)
ABDURRAHMAN CELIK MUSA ESIT MEHMET FATIH SAHAN	Adiyaman University	Long-term trend analysis of annual precipitation and temperature data in Türkiye's eastern black sea region
ISMET ASIM ASLANGOZ MUSA ESIT MEHMET FATIH SAHAN	Adiyaman University	Multi-method trend analysis of temperature and precipitation trends in Türkiye's eastern Anatolia region: the cases of Ardahan, Erzurum, and Kars
DURSU KAZIM	Unec, Economy, Economic Policy	The impact of creating green jobs on social welfare
GULSAH BALABAN CHARISSA SERAVINNA AZZAHRA HANEEN HAMMADI	Istanbul Sabahattin Zaim University	Human–ai relationships: associations with personality, attachment, and psychological symptoms
ALZAKI ZAKARIA SULIMAN SALIH HASAN TERZI	*Karabuk University*	The effect of international experience and global orientation on business performance with mediating role of global market orientation: case study of Turkish food companies.

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-4

Riga Local Time: 12:30-14:30 | Ankara Local Time: 12:30-14:30

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. TUHINA SINHA

Authors	Affiliation	Presentation Title
MANAR ABID AMINA BENABDALLAH KHAOULA BOUDJABER GHANIA BOURZAMA LUIGI DEBELLIS	*Chadli Bendjedid University*	Chemical composition and antifungal properties of laurel leaves from El Tarff, Algeria
YOUSSEF TLEMSANI MOHAMED EBN TOUHAMI	*İbn Tofail University*	Evaluating the efficacy of ict-based interventions in physics education
TSIIREGZEN ANDARAI ENDRE DOMOKOS	*University Of Pannonia*	Gis-based spatial assessment of physicochemical and radiological characteristics of groundwater in darkhan-uul province, Mongolia
ELEMEHDI MAJDI HAMZA MAROUANI ALLOUN FOUAD SOUFIANE ZERRAF SAID BELAAOUAD	*Hassan II University Of Casablanca*	Crystal structure elucidation of a novel organic–inorganic hybrid material, 2-ethyl-n-phenylmethanaminium dihydrogen phosphite: an experimental and theoretical approach
MOHAMMED ALIYU SULEIMAN	*School Of Secondary Education*	Parental socio-economic status as a correlate of secondary school student's mathematical ability and academic achievement in quantitative economics in minna, Niger State
FATIMA MOUTAKIF SOUKAINA AMEUR ABDELLAH ZEROUAL HABIB EL ALAOUI EL ABDALLAOUI	*Chouaib Doukkali University*	DFT study of the regio- and chemo selective 1,3-dipolar cycloaddition between azomethine
TUHINA SINHA	*Amity University Jharkhand*	Subsidizing the green transition: reconciling climate-smart agriculture regulations with wto non-discrimination principles
ELMEHDI MAJDI HAMZA MAROUANI ALLOUN FOUAD SOUFIANE ZERRAF SAID BELAAOUAD	*Hassan Ii University Of Casablanca*	Synthesis, crystallographic characterization, and theoretical study of a novel $(C_7H_8NO_2)_2H_2P_2O_7$ single crystal
GIVI DUCHIDZE	*East European University*	Geopolitical competition and its impact on the global agenda for sustainable economic development
YUSUF AHMED TIJJANI ZAINAB IDRIS MOHAMMED NASIRU SADA	*Ahmadu Bello University*	Impact of customer awareness and perceived religious compatibility on the adoption of Islamic banking services in Nigeria

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-5

Riga Local Time: 12:30-14:30 | Ankara Local Time: 12:30-14:30

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. YEGANA AHMADOVA

Authors	Affiliation	Presentation Title
NODAR SULASHVILI MAGDA DAVITASHVILI EKATERINE LOMIA LALI PATSIA TAMAR OKROPIRIDZE DAVID APHKHAZAVA	*Georgian National University*	Translational assessment of epigenomic determinants of aging: large-scale
HAYAT MALGHI	*Sultan Moulay Slimane University*	Mild solutions for hybrid fractional differential equations
SAMIHA ISLAM BORSHA ALVI ISLAM SIFAT	*Daffodil Institute of It*	Human-ai collaboration in modern education: a review of emerging trends.
CHAIMAE EL YAACOUBI NIHADE BENSITEL PHUONG NGUYEN TRI ACHARF EL KASMI	*Abdelmalek Essaadi University*	Life cycle assessment of a wastewater treatment plant
KAWTHAR EL AHMADI KHADIJA HABOUBI PHUONG NGUYEN-TRI	*Abdelmalek Essaâdi University*	Green extraction of cannabis sativa l. using supercritical co_2: process optimization and evaluation of the antimicrobial potential of extracts and by- products
YEGANA AHMADOVA	*Azerbaijan State Pedagogical University*	Methods of implementing practical and independent activities in geography teaching
SAIDI MOHAMED	*Oran Graduate School of Economics*	Artificial intelligence and the economic efficiency of urban waste management
ANCA GATA	*University Of Galati*	Representations of linguistic constructions in teaching Romanian as a foreign language
PRAISE ENENCHE AGADA CHARLES YAKUBU MAKUN	*Federal University of Technology*	Impact of climate-responsive design strategies on thermal comfort in community civic centers in Abuja, Nigeria

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-2 / HALL-6

Riga Local Time: 12:30-14:30 | Ankara Local Time: 12:30-14:30

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. SUPOM ROY

Authors	Affiliation	Presentation Title
YUSUF AHMED TIJJANI ABDULKADIR AHMAD	*Ahmadu Bello University*	Does strategic alignment impact on operational efficiency of commercial banks in Nigeria?
SITI ZASKIA PELANGI PUTRI ALIYA FAZILA EFFENDI NALA NINDISA QANITAH IRAWAN	*Lampung University*	Social media as a tax education tool: it's impact among young people in Indonesia
FARRUKH MAHFOOX RIAZ AHMED	*Bahria University*	Importance of sustainability in seaports: evidence from Pakistan
SUMON HOSSAIN SADIA ISLAM SHAKIL AHMED TARIQ-AL KASIF	*University Of Rajshahi*	Biological traits of glossogobius giuris (hamilton, 1822) in a wetland ecosystem (nw bangladesh): implications for sustainable fisheries management
SUPOM ROY	*Trine University*	Ethical hacking and penetration testing: how organizations use ethical hackers to strengthen security
ARCHANA DIXIT	*Gurugram University*	Analysis of the $\lambda_s $cdm model with latest observational data sets
YEGANA AHMADOVA	*Azerbaijan State Pedagogical University*	Children and environmental education for a sustainable future
MOHAMMED DENZIRA MOHAMMED EL IDRISSI ABDELMALEK MATINE SAID ESSKALLI	*Sultan Moulay Slimane University*	DFT elucidation of the mechanism and stereoselectivity of the hydroboration–oxidation reaction of α′-trans-himachalene: molecular docking and admet assessment of the resulting derivatives
SOUMAYA TALBI AMAL EL KHANCHAOUI SALHA HAMRI ABDERRAFIA HAFID MOSTAFA KHOUILI SOUAD RABI ABDELLATIF ESSOUMHI	*Sultan Moulay Slimane University*	Enhanced adsorption of Congo red by multi-metal layered double hydroxides (ldhs).

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-3 / HALL-1

Riga Local Time: 15:00-17:00 | Ankara Local Time: 15:00-17:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. HATICE KANBUR CAVUS

Authors	Affiliation	Presentation Title
HATICE KANBUR CAVUS MURAT CAVUS	Yozgat Bozok University	Comprehensive analysis of low-frequency dielectric properties and charge-carrier dynamics in Schottky barrier heterostructures
HATICE KANBUR CAVUS MURAT CAVUS	Yozgat Bozok University	Dielectric response and charge-carrier dynamics in InGaAs Schottky barrier heterostructures
BIRCAN SAYAR RECEP SAHINGOZ MEHMET YAKAN	Yozgat Bozok University	Determination of changes in the optical properties of bacteria exposed to a magnetic field using ultraviolet–visible spectroscopy
METIN AKIZ HURMET FULYA AKIZ	Yozgat Bozok University	A homotopic model for historical cryptographic processes
HURMET FULYA AKIZ	Yozgat Bozok University	On convergence via δ-open sets in ideal topological spaces
ALI PEHLIVANLI RECEP SAHINGOZ	Yozgat Bozok University	The effect of heat-treatment duration on Vickers hardness and selected magnetic properties of $Fe_{39}Ni_{39}Mo_4Si_6B_{12}$ metallic glass alloy
EMINE TUGCE SARAC CEBECI FATIH TASTAN HATICE BAS	Yozgat Bozok University	Investigation of the effects of Medicago sativa L. methanol extract on mortality, acetylcholinesterase activity, and oxidative stress parameters in Galleria mellonella

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-3 / HALL-2

Riga Local Time: 15:00-17:00 | Ankara Local Time: 15:00-17:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Dr. BERNA YAVUZ PEHLIVANLI

Authors	Affiliation	Presentation Title
FATIH TASTAN EMINE TUGCE SARAC CEBECI HATICE BAS	Yozgat Bozok University	Evaluation of the inhibitory effects of trifolium campestre on selected enzymes
BERNA YAVUZ PEHLIVANLI	Yozgat Bozok University	From geological resources to advanced technology: nanotechnological applications of rare earth elements
MUSTAFA BATUHAN ERTEKIN BERNA YAVUZ PEHLIVANLI	Yozgat Bozok University	Investigation of the Neogene succession in the Niğde–Ulukışla basin: general geology, stratigraphy, and the evolution of bituminous shales within the Katrandedetepe formation
LEVENT YAZICI MEDINE COPUR DOGRUSOZ	Yozgat Bozok University	Evaluation of agro-industrial plant by-products as alternative feed sources in animal production
MEDINE COPUR DOGRUSOZ LEVENT YAZICI	Yozgat Bozok University	Potential utilization of hemp (cannabis sativa l.) plant residues as an alternative feed resource in animal production
ALI ONUR KAYA MERT CAN EMRE	Akdeniz University	Investigation of the effect of synthesis method on the magnetic properties of $COFe_2O_4$ nanoparticles
ALI ONUR KAYA MERT CAN EMRE	Akdeniz University	Machine learning applications in modern drug discovery: current advances, challenges, and future perspectives

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-3 / HALL-3

Riga Local Time: 15:00-17:00 | Ankara Local Time: 15:00-17:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Sadais Amjad

Authors	Affiliation	Presentation Title
Alexzender Anak Stapa Junaid M. Shaikh	Universiti Teknologi Brunei	Macroeconomic Determinants of Economic Growth: A Comparative Analysis of Brunei, Malaysia, and Singapore (2010–2023)
Yen Shin Chze@Amy Yen Junaid M. Shaikh	Universiti Teknologi Brunei	How Accounting Competencies Drive Audit Quality and IFRS Usefulness in Brunei and Malaysia
Abdul Wazeef A.M. Abdul Junaid M. Shaikh	Universiti Teknologi Brunei	Budgetary Practices and Financial Performance of Small and Medium Enterprises (SMEs) in Brunei Darussalam
Nurul Khairina binti Kamal Junaid M. Shaikh	Universiti Teknologi Brunei	Artificial Intelligence in Accounting Information Systems for ESG Reporting: Managerial and Economic Evidence from ASEAN
Anuar Gulshat Bekkozhanova Gulnar Manapova Gulzhan	Al-Farabi Kazakh National University	A Conceptual Analysis of the Binary Opposition “TRUTH/LIE” in English Literature: From Metaphysical Absolute to Postmodern Deconstruction
Aisha A. Ohieku Salisu Alhaji Nuhu	University of Abuja	Bridging nursing and engineering: advancing healthcare through innovation, ai, and human-centered design – a systematic review
Sadid Shahriyar	Sher-e-Bangla Agricultural University	Dendro-ecological zoning for semi-arid restoration: a data-driven species selection framework for the barind tract, bangladesh
Vyacheslav PRYLYUK	Taras Shevchenko University of Kyiv,	Hr management – key factor of competitiveness in modern business
Addra Noah Agbo	University Of Abuja,	Upholding Nursing Ethics: Maintaining Professional Boundaries in Practice. A study conducted in selected health Institutions in Nasarawa State, Nigeria
Sadais Amjad	The Islamia University of Bahawalpur,	Quantum-Enhanced AI: A Comparative Study of Classical and Quantum Machine Learning Models in Financial Applications
Palanisamy A. Deepak S. Muthuramalingam R.	Bharath institute of higher education and research Chennai	3D Printing of Medicines: Custom-Made Dosage Forms

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-3 / HALL-4

Riga Local Time: 15:00-17:00 | Ankara Local Time: 15:00-17:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION: Anna Kopiczko

Authors	Affiliation	Presentation Title
Anna Kopiczko Patrycja Widłak Joanna Cieplińska	*Józef Piłsudski University of Physical Education in Warsaw*	Determinants of skeletal health in elite athletes: associations among bone mineral density, lean mass, and bone stress injuries
Patrycja Widłak Anna Kopiczko Dariusz Boguszewski Aspasia Dania Piotr Bartnicki	*Józef Piłsudski University of Physical Education in Warsaw*	Multifactorial injury risk assessment in team sport athletes: integrating functional, morphological, and biochemical indicators
Anna Kopiczko Joanna Cieplińska Patrycja Widłak Artur Kruszewski	*Józef Piłsudski University of Physical Education in Warsaw*	Predictors of bone stress fractures in professional athletes: role of bone mineral density and muscle mass
Patrycja WIDŁAK Anna KOPICZKO Bartłomiej MICHALAK Marzena MALARA Joanna CIEPLIŃSKA	*Józef Piłsudski University of Physical Education in Warsaw*	Assessment of sports injury risk in professional karate athletes using fms and y-balance tests
Kamila Żarska Patrycja Widłak	*Józef Piłsudski University of Physical Education in Warsaw*	Eating disorders and body image in young female athletes: the impact of sports environment and type of discipline
Przemysław Kowalski Patrycja Widłak	*Józef Piłsudski University of Physical Education in Warsaw*	Lower limb injuries among male volleyball players in lower leagues: the scale of the problem and potential risk factors
Ayesha Batool Farkhanda Anjum Sobia Maqsood Shafiq-ur-Rehman Zia	University of Agriculture	Silent witnesses, hidden victims: examining the impact of domestic violence on children in punjab, Pakistan
N.K. Udaya Prakash Y. Gunashree S. Bhuvaneswari N. Preethi	Vels Institute of Science	Bio functional evaluation the biosoot of indian traditional medicine, vetiver
Fatima Mustapha Bindawa Abubakar Sani	Umaru Musa Yar'adua University	A Literature Review on Bauhinia rufescence leaves used for Anti-malarial activity
Inyang, B. U., Ekpo, E.I.	*Akwa Ibom State Polytechnic*	Mangrove-Inspired Design Strategies for Flood-Resilient Housing in the Niger Delta region of Nigeria

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

02.07.2026 / ONLINE SESSION-3 / HALL-5

Riga Local Time: 15:00-17:00 | Ankara Local Time: 15:00-17:00

Zoom Meeting ID: 844 6001 0824 / Zoom Passcode: 123456

HEAD OF SESSION:

Authors	Affiliation	Presentation Title
Lawal N.A. Omisande L.A.	*Federal Polytechnic Ilaro Ogun State*	The effectiveness of crystalline waterproofing admixture in hydrophobic concrete
Samira ZERBIB Khalid HILAL Ahmed KAJOUNI	*University Sultan Moulay Slimane*	Existence of Solutions for Nonlinear \(\psi\)-Hilfer Complex-Order Fractional Systems: An Integral Equation Approach
Khadija ELKHALLOUFY Manal MENCHIH Khalid HILAL Ahmed KAJOUNI	*University Sultan Moulay Slimane*	Linear Chaos and Strong Stability in the Conformable Von Foerster-Lasota Equation
Ozcan Mammadov, İsmail Karakaş, Fatma Aykut Tonk	*Ege University*	Characterization of some morphological characteristics and biological performance of Maize F3 Population under water stress condition
Mehmet Fatih YILMAZ Mahmut KAPLAN	*Malatya Turgut Özel University*	Seed Oil Quality of Hungarian Vetch (*Vicia pannonica* Crantz) Cultivars: Crude Oil Content and Fatty Acid Composition
Mehmet Fatih YILMAZ Mahmut KAPLAN Abdullah Yasin DALKILIÇ	*Malatya Turgut Özel University*	Characterization of Narrow-Leaved Vetch (*Vicia sativa* subsp. *nigra* (L.) Ehrh.) Genotypes Collected from Kahramanmaraş Natural Flora in Terms of Some Morphological and Seed Characteristics
Mesut TEKELİ İsmail KARAKAŞ Fatma AYKUT TONK	*Ege University*	A Study on the Agricultural and Technological Characteristics of Cotton F_2 Populations

(All speakers required to be connected to the session 10 min before the session starts)
Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

CONFERENCE GALLERY


11. ISPEC
INTERNATIONAL MODERN
ISPEC
VILNIUS , LITHUANIA
RIGA , LATVIA
HELSINKI, FINLAND


11. ISPEC
ISPEC
VILNIUS , LITHUANIA
HELSINKI, FINLAND


11. ISPEC
INTERNATIONAL MODERN
SCIENTIFIC RESEARCH CONG
ISPEC


11. ISPEC
INT ATIONAL MODERN
SCIENTIFIC EARCH CONGRESS


DFT, MEP AND MOLECULAR DOCKING ANALYSIS
1,3-BENZODIOXOLE-5-SULFONAMIDE
Geometry optimization • Theoretical IR/PED • FMO • MEP • hCA II docking
Dr. Yusuf SERT
Yozgat Bozok University, Yozgat, Türkiye


11.
ISPEC
INTERNATIONAL MODERN
ISPEC
VILNIUS , LITHUANIA
RIGA , LATVIA


11.
ISPEC
ISPEC
VILNIUS , LITHUANIA
HELSINKI, FINLAND


11. ISPEC
INTERNATIONAL MODERN
SCIENTIFIC RESEARCH CONGRES
VILNIUS , LITHUANIA
RIGA , LATVIA
HELSINKI, FINLAND
ISPEC

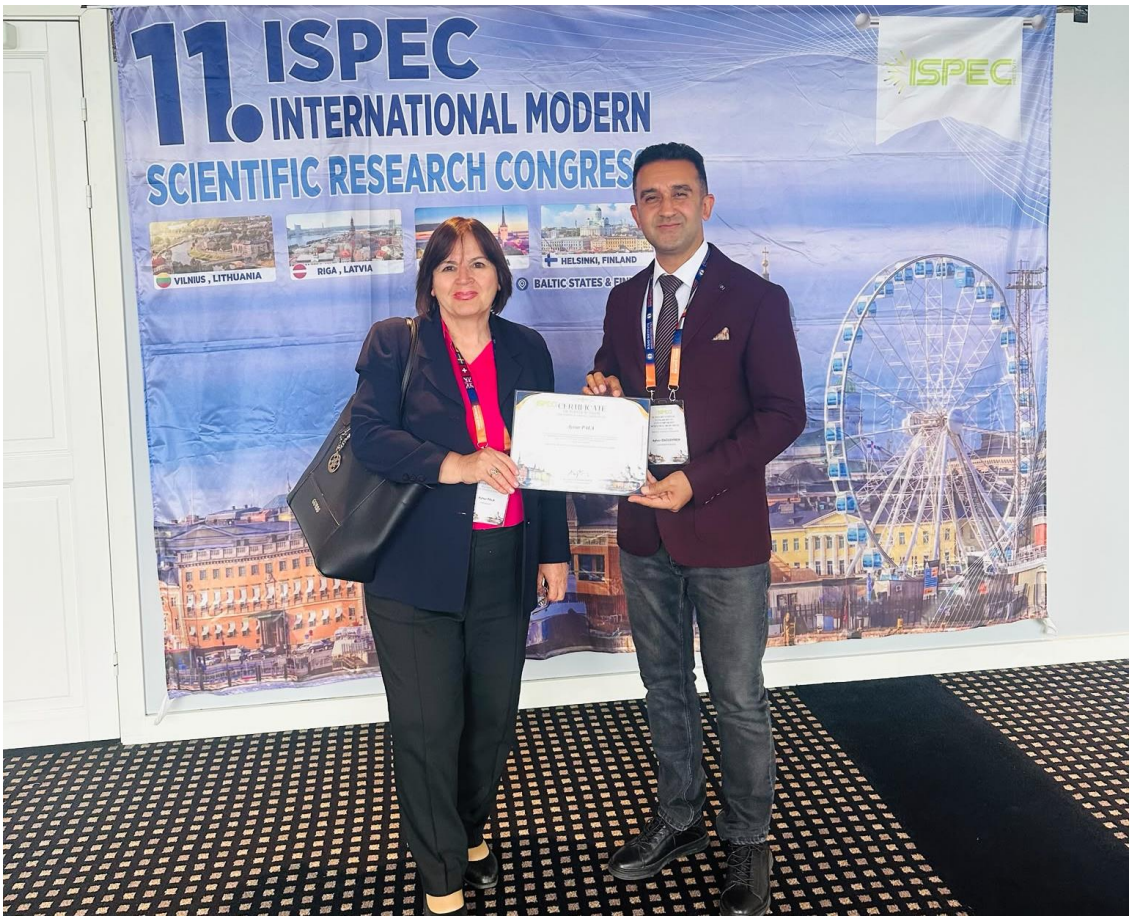
11. ISPEC
INTERNATIONAL MODERN
SCIENTIFIC RESEARCH CONGRES
VILNIUS , LITHUANIA
RIGA , LATVIA
HELSINKI, FINLAND
ISPEC

TABLE OF CONTENTS

Author(s)	Topic Title	No
Yusuf Sert	DFT studies of 1,3-benzodioxole-5-sulfonamide	23
Yusuf Sert	MEP and docking analysis of 1,3-benzodioxole-5-sulfonamide	24
Ayhan Dagdevıren Ibrahım Mercımek	Latvian culinary culture	25
Ibrahım Mercımek Ayhan Dagdevıren	Health tourism policies and practices in Lithuania	27
Ahmet Unlu	Traces of hunting culture in Satılmış Sen's poetry	28
Oguzhan Danıs	The problem of comparability of financial statements in a high-inflation environment: A literature review from the perspective of accounting standards and financial reporting	29
Oguzhan Danıs	The role of AI-supported management accounting information in strategic decision-making processes	31
Ferhat Atık	Simulation of truth: Rethinking the relationships among reality, representation, and faith in post-truth regimes	33
Gullu Abdıyeva	Botulinum toxin after hemorrhoidectomy	34
Mustafa Majıd Madlool Al_Khazrajı Irfan Kurtbas	Experimental investigation of time-dependent heat and mass transfer behavior under frosting conditions in cryogenic ambient air vaporizers	35
Dogukan Uzunkaya Ebru Acuner Turet	Analysis of energy poverty and gender inequality	37
Mustafa Dursunlar	Comparative analysis of manual and robotic welding applications in railway vehicle chassis manufacturing	39
Ilhan Cakıl Mehmet Ozer Fatıh Balıkoglu	Investigation of the quasi-static mechanical behavior of asymmetric inter-ply hybrid double-curved composite structures	41
Fıdan Askerova	Opportunities for implementing the Education 4.0 model at the undergraduate level	43
Bola Chrıstıe Atulomah Orjıme Ann Ngunan	Repositioning Academic Libraries in the Digital Age: Factors Influencing Low Library Patronage among Students in Nigerian Tertiary Institutions	45
Gafarlı (Qafarov) Ramazan	Folklore theories of epic memory: In the context of Turkic and European epics	46
Ayten Nahıde Korkmaz Mustafa Ozyesıl	Climate policy uncertainty, green bonds, and stock market resilience: Evidence from European listed energy and utility firms	47
Ayten Nahıde Korkmaz Hasan Agan Karaduman	A green approach to the circular bioeconomy, climate change, and the environment	49
Ahmet Köse Denız Özgür Berfin Kılınç	Comparison of the Effects of Different Inoculation Methods on Fusarium oxysporum f. sp. melongenae-Induced Disease Development and Morphological Parameters in Local Hasan Dede and Commercial Eggplant Cultivars	50
Muhammet Talha Erıkel Ismaıl Enes Parlak	A comparative evaluation of YOLOv8, YOLO11, and Faster R-CNN architectures for in-vehicle firearm and knife detection	52
Denız Kızır Musa Esıt Osman Gunaydın Zeyneb Kılıc	Multidimensional trend analysis of meteorological changes in the Thrace region, Türkiye (1965–2025)	54

Author(s)	Topic Title	No
Osman Uslu	Demographic predictors of internet usage time and social comparison: A quantitative study	55
Osman Uslu	Is cyberloafing always harmful? Reconsidering positive outcomes in digital workplaces	56
Berkay Karacor Meltem Ozkan	Finite element analysis of low-bed trailer ramps with different design geometries using two different materials	57
Berkay Karacor Murat Surkuc	Investigation of the structural and weight optimization of vehicle roof-rack mounting brackets using finite element analysis	59
Serap Duman Gulumser Gultekın Akduman	An examination of factors influencing peer relationships among preschool children using CHAID analysis	61
Huseyın Ozdemır	The effect of entrepreneurship education on the entrepreneurial tendencies of tourism undergraduate students: The case of Cankiri Karatekin University	62
Sevgı Kansız	Theoretical calculations and in silico drug-likeness of a nitrophenyl schiff base	64
Sevgı Kansız	Molecular surface analysis, molecular docking, and adme investigation of a nitrothiophene-containing schiff base	66
Huseyın Ozdemır	A study on health tourism awareness among tourism undergraduate students: The case of Cankiri Karatekin University	68
Murat Oltulu	Bridge terms enabling conceptual transformation in Qur'anic semantics: 'Ilm, tilāwah, idhn, and waḥy	70
Buket Kayışlı Arkadaş	The human–nature relationship in the context of sufi cosmic human understanding and modern human philosophy	72
Ina Zela	A comparative assessment of alternative methods for estimating the non-observed economy	74
Atulomah Bola Chrıstıe Kumoye Danıel Olalekan	A review of open-source integrated library systems and sustainable library services in Nigerian universities	75
Bola Chrıstıe Atulomah Odumade Adepero Olajumoke	Information literacy skills and the management of fake news among university students in the post-truth era	76
Buı Xuan Vuong	Bleaching of kaolinite mineral to enhance whiteness and reduce iron oxide content	77
Okaılı Oumaıma Rafıı Mohamed Hattabı Mohamed	Aeroelastic design of high-aspect-ratio wings incorporating structural batteries	78
Ouassıla Rıouchı Khalıd Elkalay Mourad Baghour	Dynamics of small pelagic fish and plastic debris distribution in marine ecosystems	79
Ouassıla Rıouchı Khalıd Elkalay Mourad Baghour	Ingestion of microplastics by fish	80
Prıtheeraj Sen Maınan Ray Caesar Roy	Evaluating the effectiveness of Indians regulatory response to single-use plastics: strategies for adaptive capacity building and futuristic trends	81
Sumon Hossaın Sadıa Islam	Biological traits of glossogobius giuris (hamilton, 1822) in a wetland ecosystem (nw bangladesh): implications for sustainable fisheries management	82

Author(s)	Topic Title	No
Shakıl Ahmed Tarıq-Al Kasıf		
I. El Fengouchı N. Lahlouhı R. Hsıssou L.C. Costa M. El Hasnaouı	Novel pentafunctional epoxy polymer: preparation, structural and optical characterization	83
Sonde Dımejı Rotımı	Waiting for the truck: an evaluation of the psychological effects of delayed deliveries on customers and supply chain personnel in Nigeria	84
Buı Xuan Vuong	Bleaching of kaolinite mineral to enhance whiteness and reduce iron oxide content	85
Okaılı Oumaıma Rafıı Mohamed Hattabı Mohamed	Aeroelastic design of high-aspect-ratio wings incorporating structural batteries	86
Ouassıla Rıouchı Khalıd Elkalay Mourad Baghour	Transfer of microplastics from the marine environment to humans through the food chain	87
Sanıa Abıd Syed Mohsan Raza Shah Arshıa Zıa	Role of neem leaf extract in the morpho-anatomical and physiological response of pennisetum glaucum (l.) r. br. under water deficit conditions	88
Hanane Mahroug Khalıl Oukebdane Cherıfa Hakıma Memou Fatıma Zahra Benhachem	Lignocellulosic sawdust as a low-cost adsorbent for the removal of brilliant green and bemacid blue	89
K.R. Padma	Reconceptualizing herbal knowledge: indigenous plant-derived remedies for covid-19 in India	90
Bashır Ahmad Usman Yankuzo Alhassan Yunusa Alkalı Mohammed Jıbrıl Abubakar A. Ejıko Mohammed Maıshera	The impact of security challenges on emerging technology in mathematics, engineering, technology, and science (mets) education lecturers in universities	91
Tuhına Sınha	Optimizing efficiency in cross-border trade: a transaction cost economics approach to online dispute resolution (odr)	92
Nuno Baptısta Márıo Antão Fırmıno Almeıda	Uncertainty in business strategy	93
Nuno Baptısta Márıo Antão	A social capital approach to study coopetition involving smes	94
Melık Samı Khelıl Sara Tallal Abdel Karım Bouzır	Illuminating experience: the role of light in shaping emotional and perceptual responses in architecture	95
Melık Samı Khelıl Sara Tallal Abdel Karım Bouzır	Fragmentation and continuity: reconciling cubist aesthetics with spatial coherence in architecture	96

Author(s)	Topic Title	No
Melık Samı Khelıl Sara Tallal Abdel Karım Bouzır	Computational morphogenesis in architecture: parametric strategies for integrating form and structural logic	97
Melık Samı Khelıl Sara Tallal Abdel Karım Bouzır	Bridging dimensions: methodologies for converting two-dimensional abstraction into three-dimensional architecture	98
Melık Samı Khelıl Sara Tallal Abdel Karım Bouzır	Reconceptualizing architecture as art: integrating fine art methodologies into spatial design practice	99
Sevın Aksoy Sacıde Pehlıvan	Beyond genetic determinism: A genomic and developmental framework for autism risk assessment	100
Cemıle Dursun Bekır Guler	Artificial intelligence and science education: current trends and a thematic review (2023–2026)	102
Z. Gonul Balkır Altay Iltan Akturk Ecem Kocaoglan	Communicative rationality and the problem of legal legitimacy in Habermas	104
Z. Gonul Balkır Altay Iltan Akturk Ecem Kocaoglan	Analysis of the impact of international law on the protection of marine ecosystems in Cyprus	106
Gulsah Balaban Ahmet Saım Gulsoy Azra Topcu Kubra Isık	Childhood traumas and dream themes: The mediating role of belief in paranormal events	108
Mehmet Doğan Mehmet Zeki Acar	Future professions: artificial intelligence and smart agriculture technologies in agriculture	109
Suheda Gokdas Musa Esıt Zeyneb Kılıc	The impact of climate change on hydro-meteorological parameters: Integration of classical tests with ITA and IPTA methods	111
Kubra Koc Nıhal Kılıc	Obligate ectoparasites of human skin: biology and ecology of demodex mites	113
Nıhal Kılıc Kubra Koc Havva Goktepe Fatma Betul Tırpan	Effects of different doses of a locally produced diatomaceous earth (detech wp90) on tetranychus urticae koch (acari: tetranychidae) and the predatory mite phytoseiulus persimilis athias-henriot (acari: phytoseiidae) under laboratory conditions	115
Mustafa Demır Alı Can Tellıoglu Aylut Dana Murat Sen	Integrated evaluation of forklift fork design, analysis, and testing processes	117
Ayse Gul Akca Aslı Ergenekon Arslan	Evaluation of teachers' psychological preparedness levels for disaster threats: the case of Eskişehir	119
Yılmaz Isık Musa Esıt Mehmet Fatıh Sahan	Statistical trend analysis of precipitation and temperature parameters in Türkiye's mediterranean region	121
Ismaıl Yıldırım Musa Esıt Yalcın Yılmaz	Long-term climate trends in Türkiye's southeastern Anatolia region using classical and innovative statistical methods	123

Author(s)	Topic Title	No
Petek Gokce Ozun Ozan Ercan Emre Bıcer	Electrochemical modeling of li-ion batteries using comsol multiphysics	124
Mehmet Fatıh Can	Fisheries management risk assessment under climate change: a conceptual framework for climate-resilient fisheries	125
Hılal Akcıl Gokhan Rıfat Kocyıgıt Ondrej Hojda	Institutional challenges in architectural design competitions: a comparative analysis of Türkiye and European countries (2016–2024)	126
Abdurrahman Celık Musa Esıt Mehmet Fatıh Sahan	Long-term trend analysis of annual precipitation and temperature data in Türkiye's eastern black sea region	127
Ismet Asım Aslangoz Musa Esıt Mehmet Fatıh Sahan	Multi-method trend analysis of temperature and precipitation trends in Türkiye's eastern Anatolia region: the cases of Ardahan, Erzurum, and Kars	128
Dursu Kazım	The impact of creating green jobs on social welfare	129
Gulsah Balaban Charıssa Seravınna Azzahra Haneen Hammadı	Human–ai relationships: associations with personality, attachment, and psychological symptoms	131
Alzakı Zakarıa Sulıman Salıh Hasan Terzı	The effect of international experience and global orientation on business performance with mediating role of global market orientation: case study of Turkish food companies	132
Manar Abıd Amına Benabdallah Khaoula Boudjaber Ghanıa Bourzama Luıgı Debellıs	Chemical composition and antifungal properties of laurel leaves from El Tarff, Algeria	133
Youssef Tlemsanı Mohamed Ebn Touhamı	Evaluating the efficacy of ict-based interventions in physics education	134
Tsıiregzen Andaraı Endre Domokos	Gis-based spatial assessment of physicochemical and radiological characteristics of groundwater in darkhan-uul province, Mongolia	135
Elemehdı Majdı Hamza Marouanı Alloun Fouad Soufiane Zerraf Saıd Belaaouad	Crystal structure elucidation of a novel organic–inorganic hybrid material, 2-ethyl-n-phenylmethanaminium dihydrogen phosphite: an experimental and theoretical approach	136
Mohammed Alıyu Suleıman	Parental socio-economic status as a correlate of secondary school student's mathematical ability and academic achievement in quantitative economics in minna, Niger State	137
Fatıma Moutakıf Soukaına Ameur Abdellah Zeroual Habıb El Alaouı El Abdallaouı	DFT study of the regio- and chemo selective 1,3-dipolar cycloaddition between azomethine	138
Tuhına Sınha	Subsidizing the green transition: reconciling climate-smart agriculture regulations with wto non-discrimination principles	139
Elmehdı Majdı Hamza Marouanı Alloun Fouad	Synthesis, crystallographic characterization, and theoretical study of a novel $(C_7H_8NO_2)_2H_2P_2O_7$ single crystal	140

Author(s)	Topic Title	No
Soufiane Zerraf Saıd Belaaouad		
Gıvı Duchıdze	Geopolitical competition and its impact on the global agenda for sustainable economic development	141
Yusuf Ahmed Tıjjanı Zaınab Idrıs Mohammed Nasıru Sada	Impact of customer awareness and perceived religious compatibility on the adoption of Islamic banking services in Nigeria	142
Nodar Sulashvılı Magda Davıtashvılı Ekaterıne Lomıa Lalı Patsıa Tamar Okropırıdze Davıd Aphkhazava	Translational assessment of epigenomic determinants of aging: large-scale	143
Hayat Malghı	Mild solutions for hybrid fractional differential equations	145
Samıha Islam Borsha Alvı Islam Sıfat	Human-ai collaboration in modern education: a review of emerging trends	146
Chaımae El Yaacoubı Nıhade Bensıtel Phuong Nguyen Trı Acharf El Kasmı	Life cycle assessment of a wastewater treatment plant	147
Kawthar El Ahmadı Khadıja Haboubı Phuong Nguyen-Trı	Green extraction of cannabis sativa l. using supercritical co_2: process optimization and evaluation of the antimicrobial potential of extracts and by-products	148
Yegana Ahmadova	Methods of implementing practical and independent activities in geography teaching	149
Saıdı Mohamed	Artificial intelligence and the economic efficiency of urban waste management	151
Anca Gata	Representations of linguistic constructions in teaching Romanian as a foreign language	152
Praıse Enenche Agada Charles Yakubu Makun	Impact of climate-responsive design strategies on thermal comfort in community civic centers in Abuja, Nigeria	153
Yusuf Ahmed Tıjjanı Abdulkadır Ahmad	Does strategic alignment impact on operational efficiency of commercial banks in Nigeria?	154
Sıtı Zaskıa Pelangı Putrı Alıya Fazıla Effendı Nala Nındısa Qanıtah Irawan	Social media as a tax education tool: it's impact among young people in Indonesia	155
Farrukh Mahfoox Rıaz Ahmed	Importance of sustainability in seaports: evidence from Pakistan	156
Sumon Hossaın Sadıa Islam Shakıl Ahmed Tarıq-Al Kasıf	Biological traits of glossogobius giuris (hamilton, 1822) in a wetland ecosystem (nw bangladesh): implications for sustainable fisheries management	157
Supom Roy	Ethical hacking and penetration testing: how organizations use ethical hackers to strengthen security	158
Archana Dıxıt	Analysis of the λs CDM model with latest observational data sets	159
Yegana Ahmadova	Children and environmental education for a sustainable future	160

Author(s)	Topic Title	No
Mohammed Denzıra Mohammed El Idrıssı Abdelmalek Matıne Saıd Esskallı	DFT elucidation of the mechanism and stereoselectivity of the hydroboration–oxidation reaction of α′-trans-himachalene: molecular docking and admet assessment of the resulting derivatives	161
Soumaya Talbı Amal El Khanchaouı Salha Hamrı Abderrafia Hafid Mostafa Khouılı Souad Rabı Abdellatıf Essoumhı	Enhanced adsorption of Congo red by multi-metal layered double hydroxides (ldhs)	162
Hatıce Kanbur Cavus Murat Cavus	Comprehensive analysis of low-frequency dielectric properties and charge-carrier dynamics in Schottky barrier heterostructures	163
Hatıce Kanbur Cavus Murat Cavus	Dielectric response and charge-carrier dynamics in InGaAs Schottky barrier heterostructures	164
Bırcan Sayar Recep Sahıngoz Mehmet Yakan	Determination of changes in the optical properties of bacteria exposed to a magnetic field using ultraviolet–visible spectroscopy	165
Metın Akız Hurmet Fulya Akız	A homotopic model for historical cryptographic processes	166
Hurmet Fulya Akız	On convergence via δ-open sets in ideal topological spaces	168
Alı Pehlıvanlı Recep Sahıngoz	The effect of heat-treatment duration on Vickers hardness and selected magnetic properties of $Fe_{39}Ni_{39}Mo_4Si_6B_{12}$ metallic glass alloy	169
Emıne Tugce Sarac Cebecı Fatıh Tastan Hatıce Bas	Investigation of the effects of Medicago sativa L. methanol extract on mortality, acetylcholinesterase activity, and oxidative stress parameters in Galleria mellonella	170
Fatıh Tastan Emıne Tugce Sarac Cebecı Hatıce Bas	Evaluation of the inhibitory effects of trifolium campestre on selected enzymes	171
Berna Yavuz Pehlıvanlı	From geological resources to advanced technology: nanotechnological applications of rare earth elements	172
Mustafa Batuhan Ertekın Berna Yavuz Pehlıvanlı	Investigation of the Neogene succession in the Niğde–Ulukışla basin: general geology, stratigraphy, and the evolution of bituminous shales within the Katrandedetepe formation	173
Levent Yazıcı Medıne Copur Dogrusoz	Evaluation of agro-industrial plant by-products as alternative feed sources in animal production	175
Medıne Copur Dogrusoz Levent Yazıcı	Potential utilization of hemp (cannabis sativa l.) plant residues as an alternative feed resource in animal production	177
Alı Onur Kaya Mert Can Emre	Investigation of the effect of synthesis method on the magnetic properties of $COFe_2O_4$ nanoparticles	178
Alı Onur Kaya Mert Can Emre	Machine learning applications in modern drug discovery: current advances, challenges, and future perspectives	179
Alexzender Anak Stapa Junaid M. Shaikh	Macroeconomic Determinants of Economic Growth: A Comparative Analysis of Brunei, Malaysia, and Singapore (2010–2023)	180

Author(s)	Topic Title	No
Yen Shin Chze@Amy Yen Junaid M. Shaikh	How Accounting Competencies Drive Audit Quality and IFRS Usefulness in Brunei and Malaysia	181
Abdul Wazeef A.M. Abdul Junaid M. Shaikh	Budgetary Practices and Financial Performance of Small and Medium Enterprises (SMEs) in Brunei Darussalam	182
Nurul Khairina Binti Kamal Junaid M. Shaikh	Artificial Intelligence in Accounting Information Systems for ESG Reporting: Managerial and Economic Evidence from ASEAN	183
Anuar Gulshat Bekkozhanova Gulnar Manapova Gulzhan	A Conceptual Analysis of the Binary Opposition "TRUTH/LIE" in English Literature: From Metaphysical Absolute to Postmodern Deconstruction	184
Aisha A. Ohieku Salisu Alhaji Nuhu	Bridging nursing and engineering: advancing healthcare through innovation, ai, and human-centered design – a systematic review	185
Sadid Shahriyar	Dendro-ecological zoning for semi-arid restoration: a data-driven species selection framework for the barind tract, bangladesh	186
Vyacheslav PRYLYUK	Hr management – key factor of competitiveness in modern business	187
Addra Noah Agbo	Upholding Nursing Ethics: Maintaining Professional Boundaries in Practice	189
Sadais Amjad	Quantum-Enhanced AI: A Comparative Study of Classical and Quantum Machine Learning Models in Financial Applications	190
Palanisamy A. Deepak S. Muthuramalingam R.	3D Printing of Medicines: Custom-Made Dosage Forms	191
Anna Kopiczko Patrycja Widłak Joanna Cieplińska	Determinants of skeletal health in elite athletes: associations among bone mineral density, lean mass, and bone stress injuries	192
Patrycja Widłak Anna Kopiczko Dariusz Boguszewski Aspasia Dania Piotr Bartnicki	Multifactorial injury risk assessment in team sport athletes: integrating functional, morphological, and biochemical indicators	193
Anna Kopiczko Joanna Cieplińska Patrycja Widłak Artur Kruszewski	Predictors of bone stress fractures in professional athletes: role of bone mineral density and muscle mass	195
Patrycja WIDŁAK Anna KOPICZKO Bartłomiej MICHALAK Marzena MALARA Joanna CIEPLIŃSKA	Assessment of sports injury risk in professional karate athletes using fms and y-balance tests	197
Kamila Żarska Patrycja Widłak	Eating disorders and body image in young female athletes: the impact of sports environment and type of discipline	199
Przemysław Kowalski Patrycja Widłak	Lower limb injuries among male volleyball players in lower leagues: the scale of the problem and potential risk factors	200
Ayesha Batool Farkhanda Anjum Sobia Maqsood	Silent witnesses, hidden victims: examining the impact of domestic violence on children in punjab, Pakistan	201

Author(s)	Topic Title	No
Shafiq-Ur-Rehman Zia		
N.K. Udaya Prakash Y. Gunashree S. Bhuvaneswari N. Preethi	Bio functional evaluation the biosoot of indian traditional medicine, vetiver	202
Fatima Mustapha Bindawa Abubakar Sani	A Literature Review on Bauhinia rufescence leaves used for Anti-malarial activity	203
Inyang B. U. Ekpo E.I.	Mangrove-Inspired Design Strategies for Flood-Resilient Housing in the Niger Delta region of Nigeria	204
Lawal N.A. Omisande L.A.	The effectiveness of crystalline waterproofing admixture in hydrophobic concrete	205
Samira ZERBIB Khalid HILAL Ahmed KAJOUNI	Existence of Solutions for Nonlinear ψ-Hilfer Complex-Order Fractional Systems: An Integral Equation Approach	206
Khadija ELKHALLOUFY Manal MENCHIH Khalid HILAL Ahmed KAJOUNI	Linear Chaos and Strong Stability in the Conformable Von Foerster-Lasota Equation	207
Ozcan Mammadov İsmail Karakaş Fatma Aykut Tonk	Characterization of some morphological characteristics and biological performance of Maize F3 Population under water stress condition	208
Mehmet Fatih Yılmaz Mahmut Kaplan	Seed Oil Quality of Hungarian Vetch (Vicia pannonica Crantz) Cultivars: Crude Oil Content and Fatty Acid Composition	209
Mehmet Fatih Yılmaz Mahmut Kaplan Abdullah Yasin Dalkılıç	Characterization of Narrow-Leaved Vetch (Vicia sativa subsp. nigra (L.) Ehrh.) Genotypes Collected from Kahramanmaraş Natural Flora in Terms of Some Morphological and Seed Characteristics	210
Mesut TEKELİ İsmail KARAKAŞ Fatma AYKUT TONK	A Study on the Agricultural and Technological Characteristics of Cotton F2 Populations	212

COMPARISON OF THE PHYSICAL AND MECHANICAL PROPERTIES OF PELLETS PRODUCED FROM SAFFLOWER BIOMASS PREPARED AT DIFFERENT GRINDING SIZES

FARKLI ÖĞÜTME BOYUTLARINDA HAZIRLANAN ASPİR BİYOKÜTLESİNDEN ÜRETİLEN PELETLERİN FİZİKSEL VE MEKANİK ÖZELLİKLERİNİN KARŞILAŞTIRILMASI

Res. Asst. Osman Mert YAZ
Erciyes University, Faculty of Agriculture, Department of Biosystems Engineering, Kayseri, Türkiye
ORCID: 0009-0003-3367-6656

Assoc. Prof. Dr. Bahadır DEMİREL
Erciyes University, Faculty of Agriculture, Department of Biosystems Engineering, Kayseri, Türkiye
ORCID: 0000-0002-2650-1167

ÖZET

Aspir bitkisi, yağ ekstraksiyonundan sonra geriye kalan lignoselülozik biyokütle kullanılarak enerji üretimi için değerlendirilebilen önemli bir tarımsal kaynaktır. Bu biyokütlenin peletleştirme yoluyla yoğunlaştırılması, hem enerji yoğunluğunu artırma hem de depolama ve taşınabilirliği iyileştirme açısından avantajlar sunar. Bu çalışmada, öğütme inceliğinin ayçiçeği biyokütlesinden üretilen peletlerin kalite özellikleri üzerindeki etkisi araştırılmıştır. Çalışma kapsamında, ayçiçeği materyali, 10 mm, 14 mm ve 18 mm'lik elek açıklıklarına sahip bıçaklı bir değirmende öğütülerek üç farklı parçacık boyutu hazırlanmıştır. Elde edilen hammaddeler kullanılarak 6 mm çapında peletler üretilmiştir. Üretilen peletlerin kalite özelliklerini belirlemek amacıyla çap, uzunluk, ağırlık, parçacık yoğunluğu, kırılma mukavemeti, mekanik dayanıklılık ve diğer fiziko-mekanik özellikler gibi parametreler analiz edilmiştir. Bulgular, öğütme inceliğinin peletlerin fiziksel bütünlüğünü ve mekanik mukavemetini önemli ölçüde etkilediğini göstermektedir. Daha ince öğütülmüş malzemelerden üretilen peletlerin daha homojen bir yapı ve daha yüksek yoğunluk değerleri sergilediği gözlemlenmiştir. Buna karşın, daha iri taneli malzemelerden üretilen peletler, daha fazla yapısal düzensizlik ve daha düşük mekanik mukavemet sergilemiştir. Ayrıca, öğütme inceliğinin peletlerin boyut ve ağırlık dağılımını da etkilediği tespit edilmiştir. Bu sonuçlar, pelet üretiminde hammaddenin parçacık boyutunun optimize edilmesinin kalite parametreleri açısından kritik bir rol oynadığını göstermektedir. Çalışma, pelet yakıtı olarak kavak biyokütlesinin potansiyelini vurgulamakta ve uygun öğütme koşullarının belirlenmesine ilişkin önemli bilgiler sunmaktadır. Bulguların, enerji üretiminde tarımsal atıkların daha verimli kullanımına katkıda bulunacağı öngörülmektedir.

Anahtar kelimeler: Yenilenebilir enerji, biyokütle, tarımsal atık, pelet yakıtı, aspir, öğütme inceliği

ABSTRACT

The safflower plant is an important agricultural resource that can be utilized for energy production using the lignocellulosic biomass remaining after oil extraction. Concentrating this biomass through pelletization offers advantages in terms of both increasing energy density and improving storage and transportability. In this study, the effect of grinding fineness on the quality characteristics of pellets produced from sunflower biomass was investigated. As part of the study, sunflower material was ground in a knife-type mill with screen apertures of 10 mm, 14 mm, and 18 mm to prepare three different particle sizes. Using the resulting raw materials, pellets with a diameter of 6 mm were produced. To determine the quality characteristics of the produced pellets, parameters such as diameter, length, weight, particle density, breaking strength, mechanical durability, and other physico-mechanical properties were analyzed. The findings indicate that the fineness of grinding significantly affects the physical integrity and mechanical strength of the pellets. It was observed that pellets produced from finer-ground materials exhibited a more homogeneous structure and higher density values. In contrast, pellets produced from coarser particle materials exhibited greater structural irregularities and lower mechanical strength. Additionally, it was found that grinding fineness also affects the size and weight distribution of the pellets. These results demonstrate that optimizing the particle size of the raw material in pellet production plays a critical role in terms of quality parameters.

The study highlights the potential of aspen biomass as a pellet fuel and provides important insights into determining appropriate grinding conditions. It is anticipated that the findings will contribute to the more efficient use of agricultural waste in energy production.
Keywords: Renewable energy, biomass, agricultural waste, pellet fuel, safflower, grinding fineness

STRUCTURAL AND FUNCTIONAL EVALUATION OF A ROBOTIC ARM DEVELOPED FOR AN AUTONOMOUS HARVESTING ROBOT

OTONOM BİR HASAT ROBOTU İÇİN GELİŞTİRİLEN ROBOTİK KOLUN YAPISAL VE İŞLEVSEL DEĞERLENDİRİLMESİ

Assoc. Prof. Dr. Bahadır DEMİREL
Erciyes University, Faculty of Agriculture, Department of Biosystems Engineering, Kayseri, Türkiye
ORCID: 0000-0002-2650-1167

Res. Asst. Osman Mert YAZ
Erciyes University, Faculty of Agriculture, Department of Biosystems Engineering, Kayseri, Türkiye
ORCID: 0009-0003-3367-6656

ÖZET
Modern tarım uygulamalarında otomasyonun yaygınlaşması, bitki üretiminde tekrarlayan ve hassas görevleri yerine getirmek üzere robotik sistemlerin kullanımına yönelik araştırmaları hızlandırmıştır. Bu sistemlerde, bitkiyi sadece tespit etmek yeterli değildir; bitkiye fiziksel olarak ulaşmak ve ona zarar vermeden hasat etmek de büyük önem taşımaktadır. Bu nedenle, robotik kol tasarımı, hasat robotlarının performansını doğrudan belirleyen temel faktörlerden biridir. Bu çalışma, ekibimiz tarafından geliştirilen otonom hasat robotunun robotik kol yapısını ve bunun sistemle entegrasyonuna yönelik yaklaşımı ele almaktadır. Robotik kolun tasarım sürecinde, sera ortamlarındaki çalışma koşulları, bitki yapısı ve hasat senaryoları dikkate alınarak uygun hareket kabiliyeti ve erişim aralığı sağlanmıştır. Hedef mahsulün hassas bir şekilde işlenebilmesini sağlamak için eklem yapısı, bağlantı elemanları ve uç efektör uyumluluğu değerlendirilmiştir. Ayrıca, robot kolunun görüntü işleme biriminden gelen konum verileriyle senkronize çalışabilmesini sağlamak amacıyla algılama ve hareket kontrol alt sistemleri arasındaki veri akışı incelenmiştir. Bu bağlamda, algılanan ürünün koordinat bilgilerinin robot koluna aktarılması ve uygun hareket komutlarının üretilmesi süreci ele alınmıştır. Bulgular, robot kolun yalnızca mekanik bir yapı olarak değil, algılama ve kontrol sistemleriyle birlikte çalışan entegre bir bileşen olarak değerlendirilmesi gerektiğini göstermektedir. Bu yaklaşım, hasat robotlarının daha istikrarlı ve hassas çalışmasına katkıda bulunmaktadır. Bu çalışmanın, sera koşullarında kullanıma uygun otonom hasat sistemleri geliştirmeyi amaçlayan tasarım ve uyarlama süreçleri için bir kılavuz görevi göreceğine inanılmaktadır.
Anahtar kelimeler: Akıllı tarım, tarım robotları, robotik kol, kinematik yapı, hareket kontrolü

Teşekkür: Bu proje, Erciyes Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi tarafından FOA-2025-15106 proje koduyla finanse edilmiştir.

ABSTRACT
The spread of automation in modern agricultural practices has accelerated research into the use of robotic systems to perform repetitive and precise tasks in crop production. In these systems, it is not sufficient merely to detect the crop; physically accessing it and harvesting it without causing damage is also of great importance. For this reason, robotic arm design is one of the key factors that directly determines the performance of harvesting robots. This study addresses the robotic arm structure for the autonomous harvesting robot developed by our team, as well as the approach to its integration with the system. During the robotic arm's design process, appropriate mobility and access range were ensured by considering the working conditions in greenhouse environments, plant structure, and harvesting scenarios. The joint structure, connection elements, and end-effector compatibility were evaluated to enable precise manipulation of the target crop. Additionally, the data flow between the sensing and motion control subsystems was examined to ensure the robotic arm could operate in sync with the position data from the image processing unit. In this context, the process of transferring the detected product's coordinate information to the robotic arm and generating appropriate motion commands was addressed. The findings indicate that the robotic arm should be considered not merely as a mechanical structure, but as an integrated component that works in conjunction with sensing and control systems. This approach contributes to more stable, precise operation of harvesting robots.

It is believed that this study serves as a guide for the design and adaptation processes aimed at developing autonomous harvesting systems suitable for use in greenhouse conditions.

Keywords: Smart agriculture, agricultural robots, robotic arm, kinematic structure, motion control

Acknowledgments This Project was funded by the Erciyes University, Scientific Research Projects Coordination Unit, under the Project code FOA-2025-15106

SIR BARAJ GÖLÜ'NDEKİ İSTILACI *ATHERINA BOYERI*'NİN BÜYÜME ÖZELLİKLERİNİN GELENEKSEL VE YAPAY ZEKÂ TABANLI YAKLAŞIMLARLA MODELLENMESİ

ANALYSIS OF GROWTH CHARACTERISTICS OF INVASIVE ATHERINA BOYERI USING ARTIFICIAL INTELLIGENCE AND CLASSICAL METHODS

Prof. Dr Semra BENZER
Gazi Üniversitesi, Gazi Eğitim Fakültesi, Fen Bilgisi Eğitimi, Ankara, Türkiye.
ORCID: 0000-0002-8548-8994

Prof. Dr. Recep BENZER
Ankara Medipol Üniversitesi, İktisadi, İdari ve Sosyal Bilimler Fakültesi, Yönetim Bilişim Sistemleri, Ankara, Türkiye.
ORCID: 0000-0002-5339-0554

ÖZET

İstilacı türler, yer aldıkları ekosistemlerde biyolojik çeşitlilik üzerinde baskı oluşturarak ekolojik dengeyi olumsuz yönde etkileyen önemli faktörler arasında bulunmaktadır. Türkiye iç sularında yayılım gösteren *Atherina boyeri*, yüksek adaptasyon yeteneği ve hızlı populasyon artışı ile öne çıkan istilacı balık türlerinden biridir. Bu çalışmada, Sır Baraj Gölü'nde bulunan *Atherina boyeri* bireylerinin büyüme özellikleri farklı modelleme yaklaşımları kullanılarak incelenmiştir. Araştırma kapsamında toplam boy, standart boy, çatal boy, ağırlık ve cinsiyet gibi biyometrik veriler değerlendirilmiştir. Geleneksel yaklaşımlar çerçevesinde büyüme parametreleri klasik istatistiksel modeller ile analiz edilirken, yapay zekâ temelli yöntem olarak çok katmanlı yapay sinir ağları algoritması Weka yazılımı kullanılarak değerlendirilmiştir. Elde edilen model sonuçları; doğruluk, hata oranı ve tahmin performansı açısından karşılaştırılmıştır. Çalışma sonuçlarının, istilacı türlerin populasyon dinamiklerinin daha iyi anlaşılmasına katkı sağlayacağı, büyüme modellemelerinde alternatif yöntemlerin kullanımına yönelik bilimsel bir çerçeve sunacağı ve sürdürülebilir balıkçılık yönetimine veri temelli katkılar sağlayacağı öngörülmektedir. Bunun yanında, yapay zekâ tabanlı yaklaşımın bu alanda alternatif ve etkili bir modelleme aracı olarak değerlendirilebileceği belirlenmiştir.
Anahtar Kelimeler: istilacı tür, *Atherina boyeri*, geleneksel yaklaşım, yapay zekâ yaklaşım, büyüme,

ABSTRACT

Invasive species are among the major factors that negatively affect ecological balance by exerting pressure on biodiversity within the ecosystems they invade. *Atherina boyeri*, which has spread throughout Turkish inland waters, is one of the most prominent invasive fish species due to its high adaptability and rapid population growth. In this study, the growth characteristics of *Atherina boyeri* individuals inhabiting Sır Dam Lake were investigated using different modeling approaches. Biometric variables, including total length, standard length, fork length, body weight, and sex, were evaluated. Within the framework of conventional approaches, growth parameters were analyzed using classical statistical models, while a multilayer artificial neural network (ANN) algorithm implemented in the WEKA software was employed as the artificial intelligence-based approach. The performance of the developed models was compared in terms of prediction accuracy, error rates, and overall predictive capability. The findings are expected to contribute to a better understanding of the population dynamics of invasive species, provide a scientific framework for the application of alternative modeling approaches in growth prediction, and support sustainable fisheries management through data-driven decision-making. Furthermore, the results demonstrate that the artificial intelligence-based approach can serve as an effective and reliable alternative tool for growth modeling.
Keywords: invasive species; *Atherina boyeri*; conventional approach; artificial intelligence approach; growth modeling.

OKUL MÜDÜRLERİNİN GÜÇ ZEHİRLENMESİ DAVRANIŞLARINA YÖNELİK ÖĞRETMEN ALGILARININ OKUL KADEMESİ VE BRANŞA GÖRE İNCELENMESİ

EXAMINING TEACHERS' PERCEPTIONS OF SCHOOL PRINCIPALS' HUBRISTIC BEHAVIORS BY SCHOOL LEVEL AND TEACHING BRANCH

Servet Üztemur
Prof. Dr. Anadolu Üniversitesi Eğitim Fakültesi, Türkçe ve Sosyal Bilmler Eğitimi, Türkiye
ORCID: 0000-0002-1580-9123

Abdurrahman İlğan
Prof. Dr. Eğitim Bilimleri Bölümü, Eğitim Fakültesi, İzmir Demokrasi Üniversitesi, Türkiye,
ORCID:0000-0002-2972-7727

Aylin Kirişçi-Sarıkaya
Doç. Dr. Eğitim Bilimleri Bölümü, Eğitim Fakültesi, İzmir Demokrasi Üniversitesi, Türkiye,
ORCID:0000-0001-7443-8433

ÖZET
Bu çalışmanın amacı, öğretmenlerin okul müdürlerinin güç zehirlenmesi davranışlarına yönelik algılarının okul kademesi ve branşa göre anlamlı biçimde farklılaşıp farklılaşmadığını incelemektir. Güç zehirlenmesi, liderin yetkisini aşırı özgüven, kibir, geri bildirime kapalı olma, kendini kurumun önüne koyma ve astları üzerinde baskı kurma eğilimiyle kullanması olarak ele alınmaktadır. Eğitim örgütlerinde bu tür davranışlar, okul iklimini, öğretmenlerin yönetimle kurduğu ilişkiyi ve okul içi profesyonel etkileşimi olumsuz etkileyebilecek önemli bir liderlik riski olarak değerlendirilebilir. Araştırma, Türkiye'de kamu okullarında görev yapan 525 öğretmenden çevrim içi olarak toplanan veriler üzerinde yürütülmüştür. Öğretmenlerin güç zehirlenmesi algıları, 14 maddelik Okul Müdürleri Hubris Sendromu ölçeğinde elde edilen ortalama puanlarla hesaplanmıştır. Ölçeğin bu çalışmadaki iç tutarlılık katsayısı oldukça yüksek bulunmuştur (Cronbach alfa =.944). Verilerin analizinde betimsel istatistikler, Levene testi, Welch ANOVA ve anlamlı farklılıkların kaynağını belirlemek için Tukey HSD testi kullanılmıştır. Bulgular, öğretmenlerin okul müdürlerinin güç zehirlenmesi davranışlarına yönelik algılarının okul kademesine göre anlamlı biçimde farklılaştığını göstermiştir. En yüksek ortalama meslek lisesi öğretmenlerinde, en düşük ortalama ise lise öğretmenlerinde görülmüştür. Post-hoc sonuçları, meslek lisesi öğretmenlerinin algılarının ortaokul öğretmenlerinden anlamlı biçimde yüksek olduğunu ortaya koymuştur. Branşa göre de anlamlı farklılık saptanmış; sanat, müzik ve beden eğitimi alanındaki öğretmenlerin güç zehirlenmesi algılarının Türkçe-edebiyat, yabancı dil ve rehberlik/özel eğitim alanlarındaki öğretmenlerden daha yüksek olduğu belirlenmiştir. Sonuçlar, güç zehirlenmesi algısının yalnızca bireysel öğretmen deneyimleriyle değil, öğretmenin görev yaptığı okul bağlamı ve branşın okul içindeki konumuyla da ilişkili olabileceğini düşündürmektedir.
Anahtar kelimeler: Güç Zehirlenmesi, Okul Müdürü, Öğretmen Algısı, Okul Kademesi, Branş

ABSTRACT
The aim of this study is to examine whether teachers' perceptions of school principals' hubristic behaviors differ significantly across school levels and teaching branches. Hubris is conceptualized as a leader's tendency to use authority in ways characterized by excessive self-confidence, arrogance, resistance to feedback, prioritizing personal interests over institutional goals, and exerting pressure on subordinates. In educational organizations, such behaviors can constitute a significant leadership risk, as they may negatively affect school climate, teachers' relationships with the administration, and professional interactions within the school. The study used data collected online from 525 teachers working in public schools in Türkiye. Teachers' perceptions of hubris were calculated from the mean scores on the 14-item School Principals' Hubris Syndrome Scale. The internal consistency coefficient of the scale was quite high in this study (Cronbach's alpha = .944).
Descriptive statistics, Levene's test, Welch ANOVA, and Tukey HSD tests were employed for data analysis.

The findings revealed that teachers' perceptions of school principals' hubristic behaviors differed significantly by school level. The highest mean score was observed among vocational high school teachers, while the lowest was among high school teachers. Post-hoc results indicated that perceptions of vocational high school teachers were significantly higher than those of middle school teachers. Significant differences were also found across branches; teachers in art, music, and physical education reported higher levels of perceived hubris compared to those in Turkish language and literature, foreign languages, and guidance/special education. The results suggest that perceptions of hubris are not solely shaped by individual teacher experiences but are also influenced by the school context and the position of the teaching branch within the school structure.

Keywords: School Principal, Hubris Syndrome, Hubristic Leadership, Teacher, Scale Development

TRANSHÜMANİZM VE İNSANLIĞIN BİYOLOJİK SINIRLARI: TEKNOLOJİK MÜDAHALE, BEDENSEL DÖNÜŞÜM VE ETİK TARTIŞMALAR

TRANSHUMANISM AND THE BIOLOGICAL LIMITS OF HUMANITY: TECHNOLOGICAL INTERVENTION, BODILY TRANSFORMATION, AND ETHICAL DEBATES

Prof. Dr. Derya ÖCAL
Atatürk University Faculty of Communication, Department of Public Relations and Publicity, Erzurum, Türkiye.
ORCID:0000-0003-0401-2917

ABSTRACT

Transhumanism, as a philosophical and scientific approach aiming to transcend the biological limits of the human being and enhance human capacity through technology, points to a mode of thinking whose roots extend as far back as human history itself. According to this perspective, humans are not entirely independent from natural limitations such as disease, aging, death, cognitive constraints, and physical inadequacies; however, these boundaries are expected to be overcome through fields such as biotechnology, artificial intelligence, genetic engineering, neurotechnology, and cybernetics. Within the scope of transhumanism, controversial topics such as the prevention of hereditary diseases through gene-editing technologies (CRISPR), mind-controlled device interaction via brain–computer interfaces, life extension through artificial organs and bioengineering, and AI-supported cognitive enhancement are actively being explored. Transhumanist thought does not regard humans as fixed biological entities but rather as continuously improvable beings. However, this approach also raises debates concerning the transformation of human nature, the deepening of inequalities, the ambiguity of ethical boundaries, and the redefinition of what it means to be "human."

This study examines transhumanism in the context of attempts to transcend human biological limitations and questions the transformative effects of technological developments on the human body. From this perspective, the human being is redefined not as a fixed biological entity but as a continuously improvable "project." The study highlights the ethical, social, and ontological consequences of this transformation of humanity. While the alteration of human nature blurs the boundaries of the concept of "human," it also introduces new areas of debate such as increasing inequalities, issues of access justice, and identity problems. Furthermore, the question of whether technological enhancements should be limited solely to medical purposes or considered a broader field of human empowerment gains significance. In this framework, transhumanism's claim to liberate humans from biological constraints is critically evaluated as both a promising and a risk-bearing paradigm. Consequently, it becomes essential to reconsider ethical principles, social equality, and philosophical boundaries related to the definition of humanity in the process of technologically redesigning the human being.

Keywords: Transhumanism, Human Nature, Biotechnology, Human Enhancement, Ethic.

ÖZET

İnsanın biyolojik sınırlarını aşmak ve kapasitesini teknoloji aracılığıyla geliştirmek amacı taşıyan felsefi ve bilimsel bir yaklaşım olarak "transhümanizm", kökleri insanlık tarihi kadar eski bir düşünüş biçimine işaret etmektedir. Bu düşünceye göre insan; hastalık, yaşlanma, ölüm, bilişsel sınırlılıklar ve fiziksel yetersizlikler gibi doğal sınırlardan tamamen bağımsız değildir, ancak biyoteknoloji, yapay zekâ, genetik mühendisliği, nöroteknoloji ve sibernetik gibi alanlar sayesinde bu sınırlar ortadan kalkacaktır. Transhümanizm kapsamında günümüzde gen düzenleme teknolojileri (CRISPR) ile kalıtsal hastalıkların önlenmesi, beyin-bilgisayar arayüzleri ile düşünceyle cihaz kontrolü, yapay organlar ve biyomühendislik ile yaşam süresinin uzatılması ve yapay zekâ destekli bilişsel artırımlar gibi tartışmaya açık konular üzerinde çalışılmaktadır. Transhümanist düşünce, insanı "değişmez biyolojik bir varlık" olarak değil, sürekli geliştirilebilir bir varlık olarak görür. Ancak bu yaklaşım; insan doğasının değişmesi, eşitsizliklerin artması, etik sınırların belirsizleşmesi ve "insan olma" tanımının yeniden yapılması gibi tartışmaları da beraberinde getirmektedir.

Bu çalışma, transhümanizm düşüncesini insanın biyolojik sınırlarını aşma girişimi bağlamında ele almakta ve teknolojik gelişmelerin insan bedeni üzerindeki dönüştürücü etkilerini sorgulamaktadır.

Bu düşünce tarzına göre insan, sabit bir biyolojik varlık olmaktan ziyade sürekli geliştirilebilir bir "proje" olarak yeniden tanımlanmaktadır. Çalışma, insana dair bu dönüşümün etik, toplumsal ve ontolojik sonuçlarına dikkat çekmektedir. İnsan doğasının değiştirilmesi, "insan" kavramının sınırlarını belirsizleştirirken, eşitsizliklerin derinleşmesi, erişim adaleti ve kimlik sorunları gibi yeni tartışma alanlarını da ortaya çıkarmaktadır. Ayrıca teknolojik iyileştirmelerin yalnızca tıbbi amaçlarla mı sınırlandırılması gerektiği yoksa insan kapasitesini artırmaya yönelik genişletici bir özgürlük alanı mı olarak değerlendirilmesi gerektiği sorusu önem kazanmaktadır. Bu çerçevede transhümanizmin insanı biyolojik sınırlardan kurtarma iddiasının hem umut verici hem de risk barındıran bir paradigma olduğu yönünde bir sorgulama önem kazanmaktadır. Sonuç olarak, insanın teknolojik olarak yeniden tasarlanması sürecinde etik ilkeler, toplumsal eşitlik ve insanlık tanımına ilişkin felsefi sınırların yeniden düşünülmesi gerektiği üzerine düşünmek zaruridir.

Anahtar Kavramlar: Transhümanizm, İnsan Doğası, Biyoteknoloji, İnsan Artırımı, Etik.

ÇAĞDAŞ TÜRK RESMİNDE KATASTROFİK İMGELER

CATASTROPHIC IMAGES IN CONTEMPORARY TURKISH PAINTING

Doç. Murat ATEŞLİ
Anadolu Üniversitesi, Güzel Sanatlar Resim Bölümü, Eskişehir, Türkiye.
ORCID: 0000-0003-3954-100X

ÖZET

Resim sanatında sanatçıların önemli bir kısmı güzellik kavramını ve estetik bakış açışıyla ilişkili temaları ele almasına karşın bazı sanatçılar da toplumsal kırılma anlarını, siyasi ve iktisadi dönüşümlere sebep olan tarihsel olayları katastrofik imgeler biçiminde betimlemişlerdir. Katastrofik imgeler büyük yangınlar, depremler gibi önemli ekolojik yıkımlar ile savaşlar, kıtlık ve salgın hastalıklar gibi toplumsal çöküşler olarak tasvir edilir. Bununla beraber kuramsal açıdan sanat alanında katastrofi kavramı, salt bir yıkım tasvirinin ötesine geçerek; temsili sistemlerin, aşina olunan biçimlerin ve toplumsal-mekânsal düzenin beklenmedik bir zamanda bozulması olarak da tanımlanır. Fransız düşünür Gilles Deleuze'ün resim düzleminde "klişelerin yerle bir olduğu kaos anı" olarak kavramsallaştırdığı katastrofik imge, Türkiye'nin tarihsel süreçte karşılaştığı, savaşlar, modernleşme sancıları, düzensiz kentleşme politikaları ve doğal felaketlerin yarattığı travmalarıyla birleşerek çağdaş Türk resminde özgün bir dille betimlenmiş olup; Erken dönem Türk resminde yangın, savaş ve göç gibi temalarla "tarihsel bir hüzün ve belge" seviyesinde kalan felaket olgusunun, çağdaş dönemde felsefi ve plastik bir biçimsel anlatıya dönüşmüştür. Türk sanatçılarının yapıtlarında felaketi görselleştirirken ya mesafeli bir çevre-kent analizi ürettikleri ya da travmanın tinsel yasını tuttukları fark edilir. Görsel kültür veri incelemesiyle yapıt okumaları üzerinden oluşturulmuş nitel bir araştırma olan bu çalışmanın amacı, Türk resminde sanatçıların çevresel felaketler, ekolojik yıkımlar ve deprem gibi katastrofik unsurların plastik açıdan ele alınış biçimlerini ortaya çıkarmaktır. Araştırma, katastrofik imge kavramını içeren çağdaş Türk sanatçıların yapıtlarıyla sınırlandırılmıştır.
Anahtar Kelimeler: Çağdaş Türk Resmi, Felaketler, İmge, Katastrofi.

ABSTRACT

While a significant number of artists in the painting art address the concept of beauty and themes related to an aesthetic perspective, some artists have depicted moments of social upheaval and historical events that have led to political and economic transformations through catastrophic imagery. Catastrophic images are depicted as major ecological disasters such as large-scale fires and earthquakes, as well as social collapses such as wars, famines, and epidemics. However, from a theoretical perspective in the field of art, the concept of catastrophe goes beyond a mere depiction of destruction; it is also defined as the disruption of representational systems, familiar forms, and the socio-spatial order at an unexpected moment.

The catastrophic image, conceptualized by the French philosopher Gilles Deleuze as "the moment of chaos when clichés are shattered" within the pictorial plane, has been depicted in contemporary Turkish painting with a unique language, merging with the traumas created by wars, the pains of modernization, chaotic urbanization policies, and natural disasters that Türkiye has faced throughout its historical process; In early Turkish painting, the phenomenon of catastrophe -which remained at the level of "historical sorrow and documentation" through themes such as fire, war, and migration- has transformed into a philosophical and plastic formal narrative in the contemporary period. It is evident that when Turkish artists visualize disaster in their works, they either produce a detached analysis of the environment and the city or observe a spiritual mourning for the trauma.

This qualitative study, which is based on visual culture data analysis and artwork interpretations, aims to reveal how artists in Turkish painting address catastrophic elements such as environmental disasters, ecological destruction, and earthquakes from a plastic arts perspective. The research is limited to the works of contemporary Turkish artists that incorporate the concept of the catastrophic image.
Keywords: Contemporary Turkish Painting, Disasters, Image, Catastrophe.

POSTKOLONYAL TEORİ ÇERÇEVESİNDE 1 MAYIS AFİŞLERİNİN ÇÖZÜMLENMESİ

AN ANALYSIS OF MAYDAY POSTERS WITHIN THE FRAMEWORK OF POSTCOLONIAL THEORY

Prof. Yaşar USLU
Anadolu Üniversite, Güzel Sanatlar Fakültesi, Grafik Sanatlar Bölümü, Eskişehir, Türkiye.
ORCID: 0000-0002-0787-7150

ÖZET

Bu çalışma, 1 Mayıs (Uluslararası Emek ve Dayanışma Günü) afişlerinin postkolonyal teori çerçevesinde kültürel ve ideolojik çözümlemesini amaçlamaktadır. Araştırmanın yöntemi, nitel içerik çözümlemesi ve görsel söylem çözümlemesi yöntemlerinin bir kombinasyonu olarak tasarlanmıştır. Çalışmada, 1 Mayıs afişlerinde yer alan görsel temsiller, renk kullanımı, tipografi, beden imgesi ve ideolojik anlatı unsurları olarak yorumlanmıştır. Çalışmada, afişlerin içerdiği temsillerin Batı-merkezci modernlik, güzellik ve ilerleme anlayışlarını nasıl yeniden ürettikleri sorgulanmaktadır. Postkolonyal teori, özellikle Edward Said'in Oryantalizm (1978) kavramı, Gayatri Chakravorty Spivak'ın subaltern özne tartışması (1988) ve Homi K. Bhabha'nın kültürel melezlik (1994) yaklaşımı üzerinden ele alınmıştır. Bu çerçevede rastgele, 1953 tarihli Doğu Almanya (DDR) afişi ve 1970'ler Türkiye'sinden beş adet afiş seçilmiş 1 Mayıs afişleri karşılaştırmalı olarak incelenmiştir. Bulgular, afişlerin ideolojik olarak Batı kapitalizmine karşı bir direniş söylemi üretmelerine rağmen, estetik düzlemde Batı'nın modernlik ve "evrensel insan" ideallerini yeniden ürettiklerini göstermektedir. Bu durum, postkolonyal kuramın "merkez–çevre" ilişkilerinin sadece politik değil, estetik bir düzlemde de sürdüğüne işaret etmektedir.

Anahtar Kelimeler: Postkolonyal teori, bir mayıs afişleri, temsil, modernlik, ideoloji, görsel kültür.

ABSTRACT

This study aims to analyze the cultural and ideological dimensions of May Day (International Workers' Day) posters within the framework of postcolonial theory. The research adopts a combined methodological approach of qualitative content analysis and visual discourse analysis. The visual representations, color schemes, typography, body imagery, and ideological narratives in the posters are interpreted through this lens. The study questions how the representations within these posters reproduce Western-centric notions of modernity, beauty, and progress.

The theoretical framework draws upon Edward Said's concept of Orientalism (1978), Gayatri Chakravorty Spivak's discussion of the subaltern subject (1988), and Homi K. Bhabha's notion of cultural hybridity (1994). Within this framework, a total of six posters the 1953 East German (DDR) poster and five Turkish posters from the 1970s were randomly selected and analyzed comparatively. The findings indicate that although these posters construct an ideological discourse of resistance against Western capitalism, they simultaneously reproduce the aesthetic norms and ideals of Western modernity and the concept of the "universal human." This reveals that the "center–periphery" relations identified by postcolonial theory persist not only on a political level but also within aesthetic and visual dimensions.

Keywords: Postcolonial theory, May Day posters, representation, modernity, ideology, visual culture.

SOSYAL MEDYA BAĞLAMINDA KOMPLO İNANÇLARININ ÖLÇÜMÜ: SOSYAL MEDYA KOMPLO İNANÇLARI ÖLÇEĞİ'NİN GELİŞTİRİLMESİ VE PSİKOMETRİK OLARAK DOĞRULANMASI

MEASURING CONSPIRACY BELIEFS IN SOCIAL MEDIA CONTEXTS: DEVELOPMENT AND VALIDATION OF THE SOCIAL MEDIA CONSPIRACY BELIEFS SCALE

Prof. Dr. Servet Üztemur
Anadolu Üniversitesi Eğitim Fakültesi, Türkçe ve Sosyal Bilmler Eğitimi, Türkiye ORCID:0000-0002-1580-9123

Assoc. Prof. Dr. Ali Gökalp
Gaziantep Üniversitesi Eğitim Fakültesi, Sosyal Bilgiler Eğitimi, Türkiye
ORCID:0000-0002-3301-8392

Assoc. Prof. Dr. Murat Polat
Department of Educational Sciences, Niğde Ömer Halisdemir University, Niğde,Türkiye,
ORCID:0000-0002-2921-7831

Assoc. Prof. Dr. Feyza Dalaylı
Anadolu University, Faculty of Communication, Department of New Media and Communication, Eskişehir, Türkiye,
ORCID:0000-0003-2193-8236

Asst. Prof. Dr. Po Ching Huang
Department of Physiotherapy, School of Nursing and Health Sciences, Hong Kong Metropolitan University, Hong Kong,
ORCID:0000-0002-2047-2246

Asst. Prof. Dr. Daniel Kwasi Ahorsu
Department of Special Education and Counselling, The Education University Hong Kong, Hong Kong,
ORCID:0000-0003-0530-8138

Prof. Dr. Chung-Ying Lin
Institute of Allied Health Sciences, College of Medicine, National Cheng Kung University,
ORCID:0000-0002-2129-4242

ÖZET

Sosyal medya, komplo teorilerinin yalnızca dolaşıma girdiği bir mecra olmaktan çıkmış; bilginin görünürlüğünü, güvenilirliğini ve toplumsal dolaşımını biçimlendiren aktif bir ekosisteme dönüşmüştür. Bu çalışma, sosyal medya bağlamında ortaya çıkan komplo inançlarını ölçmeye yönelik çok boyutlu bir araç geliştirmeyi ve psikometrik olarak doğrulamayı amaçlamaktadır. Mevcut komplo inancı ölçekleri genellikle genel komplo zihniyetine ya da siyaset, sağlık ve yapay zekâ gibi belirli alanlara odaklanmakta; ancak sosyal medya platformlarının algoritmik yapısı, içerik görünürlüğü, trend mekanizmaları ve gizli aktör algısı gibi dijital bağlama özgü kuşkuları yeterince yakalayamamaktadır. Bu boşluktan hareketle geliştirilen Sosyal Medya Komplo İnançları Ölçeği, kullanıcıların sosyal medyayı ne ölçüde manipülatif, güvenilmez ve gizli güçler tarafından yönlendirilen bir bilgi ortamı olarak algıladığını değerlendirmektedir. Araştırma, çevrim içi olarak ulaşılan 715 katılımcıdan elde edilen verilerle yürütülmüştür. Ölçek geliştirme sürecinde veri seti iki bağımsız alt örnekleme ayrılmış; ilk grupta açımlayıcı faktör analizi, ikinci grupta ise doğrulayıcı faktör analizi gerçekleştirilmiştir. Bulgular, ölçeğin 16 maddeden ve üç alt boyuttan oluşan güçlü bir yapıya sahip olduğunu göstermiştir: Kaynak Şüpheciliği, Algılanan Gizli Aktörler ve Algı Yönetimi ile Sistematik Manipülasyon. Açımlayıcı faktör analizi sonucunda üç faktörlü yapı toplam varyansın %61.21'ini açıklamış; doğrulayıcı faktör analizi ise modelin kabul edilebilir olduğunu ve güçlü uyum değerlerine sahip

olduğunu ortaya koymuştur. Ölçeğin toplam iç tutarlılığı yüksek bulunmuş, alt boyutların güvenirlik değerleri de yeterli düzeyde desteklenmiştir. Ayrıca ölçek, Genel Komplo İnançları Ölçeği-5, Yapay Zekâ Komplo İnançları Ölçeği-5 ve Doomscrolling Ölçeği ile anlamlı ilişkiler göstermiştir. Cinsiyete göre yapılan ölçme değişmezliği analizleri, ölçeğin kadın ve erkek katılımcılar için eşdeğer biçimde işlediğini göstermiştir. Sonuç olarak bu çalışma, sosyal medya bağlamında gelişen dijital güvensizlik ve komplo inançlarını ölçmek için geçerli, güvenilir ve bağlama duyarlı bir araç sunmaktadır.
Anahtar Kelimeler: sosyal medya, komplo inançları, ölçek geliştirme, psikometrik geçerlik, dijital güvensizlik, yanlış bilgi

ABSTRACT

Social media has evolved from being a simple channel through which conspiracy theories circulate into a complex digital environment that actively shapes how information is produced, amplified, and legitimized. This study aims to develop and validate a multidimensional instrument designed specifically to measure conspiracy beliefs in social media contexts. Existing measures of conspiracy beliefs generally focus on broad conspiracist ideation or domain-specific concerns such as politics, health, or artificial intelligence. However, they often fail to capture the distinctive forms of suspicion produced by the architecture of social media platforms, including algorithmic opacity, manipulated visibility, coordinated trends, and the perceived presence of hidden actors behind digital information flows. To address this measurement gap, the Social Media Conspiracy Beliefs Scale was developed to assess the extent to which users perceive social media as an unreliable, manipulated, and covertly controlled information ecosystem. The study was conducted with data collected online from 715 participants. To ensure a rigorous validation process, the full sample was divided into two independent subsamples. Exploratory factor analysis was performed with the first subsample, whereas confirmatory factor analysis was conducted with the second. The findings supported a robust 16-item, three-factor structure consisting of Source Skepticism, Perceived Hidden Agencies, and Perception Management and Systematic Manipulation. The exploratory factor analysis indicated that the three-factor solution explained 61.21% of the total variance. Confirmatory factor analysis further demonstrated satisfactory model fit, with strong comparative fit indices and acceptable error estimates. The scale also showed high internal consistency, with strong reliability coefficients for the total scale and adequate to excellent reliability across its subdimensions. Evidence for criterion-related validity was obtained through positive associations with the Generic Conspiracist Beliefs Scale-5, the Artificial Intelligence Conspiracy Beliefs Scale-5, and the Doomscrolling Scale. In addition, gender-based measurement invariance analyses supported configural, metric, scalar, and strict invariance, indicating that the scale operates equivalently across male and female participants. Overall, the Social Media Conspiracy Beliefs Scale provides a valid, reliable, and context-sensitive tool for examining how conspiracy beliefs manifest within contemporary digital ecosystems.
Keywords: social media, conspiracy beliefs, scale development, psychometric validation, digital distrust, misinformation.

POSTMENOPOZAL KADINLARDA MENOPOZ SÜRESİNİN KLİNİK, BİYOKİMYASAL, MENOPOZ SEMPTOMLARI VE DEPRESYON PARAMETRELERİ ÜZERİNE ETKİSİ: ERKEN VE GEÇ POSTMENOPOZ KARŞILAŞTIRMASI

THE EFFECT OF MENOPAUSE DURATION ON CLINICAL, BIOCHEMICAL, MENOPAUSAL SYMPTOM, AND DEPRESSION PARAMETERS IN POSTMENOPAUSAL WOMEN: A COMPARISON OF EARLY AND LATE POSTMENOPAUSE

Türkan Paşalı KİLİT
Doç. Dr., Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Dahili Tıp Bilimleri, İç Hastalıkları Bölümü, Kütahya, Türkiye.
ORCID: 0000-0003-1126-7336

İbrahim USLU
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Beyza ORUÇ
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Sude ÖRMEC
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Duygucan KARAOĞLAN
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Muhammed Emin DEMİRCİ
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Begüm ÇALIŞKAN
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Perihan Seçil YACAN
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Hatice Ezgi TÜRKDÖNMEZ
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Mustafa YAYL
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

Ufuk ERKURT
Lisans Öğrencisi, Kütahya Sağlık Bilimleri Üniversitesi, Tıp Fakültesi, Kütahya, Türkiye.

ÖZET
Bu prospektif çalışmada, postmenopozal kadınlarda menopoz süresinin klinik, biyokimyasal parametreler, menopozal semptomları ve depresyon düzeyleri üzerindeki etkilerinin değerlendirilmesi amaçlanmıştır. İç hastalıkları polikliniğine başvuran, yaş ortalaması 54,4 olan 69 postmenopozal hasta, menopoz sürelerine göre Erken Postmenopoz (1–5 yıl, n=32) ve Geç Postmenopoz (6–10 yıl, n=37) olarak iki grupta incelenmiştir. Hastalara Beck Depresyon Ölçeği ve Menopoz Semptom Anketi uygulanmış ve rutin laboratuvar verileri analiz edilmiştir. Gruplar arasında yaş ve medeni hal açısından anlamlı fark saptanırken ($p<0,05$); diyabet ve hipertansiyon prevalansındaki sayısal artış istatistiksel olarak anlamlı bulunmamıştır ($p>0,05$). Menopoz süresi uzadıkça osteoporoz taranma oranının %25'ten %54'e yükseldiği görülmüştür ($p=0,027$). Laboratuvar bulgularında; geç postmenopoz grubunda renal fonksiyon göstergesi olan eGFR değerinin (89,0±17,2 mL/dk), erken gruba (99,0±10,1 mL/dk) kıyasla anlamlı derecede düşük olduğu ($p=0,005$) ve eozinofil düzeylerinin arttığı ($p=0,034$) saptanmıştır.

Erken postmenopoz döneminde cinsel sorunlar semptom skoru daha yüksek bulunurken (p=0,036), toplam menopoz semptom puanları ve depresyon skorlarında gruplar arasında anlamlı fark izlenmemiştir (p>0,05). Sonuç olarak, postmenopozal sürecin ilerlemesi özellikle renal fonksiyonlarda belirgin bir gerileme ile ilişkilidir. Postmenopozal takibin erken dönemlerinde cinsel disfonksiyona, ilerleyen yıllarında ise renal fonksiyon takibine ve osteoporoz taramalarına odaklanılması multidisipliner hasta yönetimi açısından kritik öneme sahiptir.
Anahtar Kelimeler: Postmenopoz, eGFR, Menopozal Semptomlar, Osteoporoz, Depresyon.

ABSTRACT

This prospective study aimed to evaluate the effects of menopause duration on clinical and biochemical parameters, menopausal symptoms, and depression levels in postmenopausal women. A total of 69 postmenopausal patients with a mean age of 54.4 years who admitted to the internal medicine outpatient clinic were examined in two groups according to their menopause duration: Early Postmenopause (1–5 years, n=32) and Late Postmenopause (6–10 years, n=37). The Beck Depression Inventory and Menopause Symptom Questionnaire were administered to the patients, and routine laboratory data were analyzed. While a significant difference was found between the groups in terms of age and marital status (p<0.05), the numerical increase in the prevalence of diabetes and hypertension was not statistically significant (p>0.05).

It was observed that as the duration of menopause prolonged, the osteoporosis screening rate significantly increased from %25 to %54 (p=0.027). In laboratory findings, the eGFR value, an indicator of renal function, was significantly lower in the late postmenopause group (89,0±17,2 mL/min) compared to the early group (99,0±10,1 mL/min) (p=0.005), and eosinophil levels were found to be increased (p=0.034) in late group. While the sexual problems symptom score was higher in the early postmenopausal period (p=0.036), no significant difference was observed between the groups in terms of total menopause symptom scores and depression scores (p>0.05). In conclusion, the progression of the postmenopausal process is associated with a distinct decline, particularly in renal functions. Focusing on sexual dysfunction in the early stages of postmenopausal follow-up, and on renal function monitoring and osteoporosis screening in the later years, is of critical importance for multidisciplinary patient management.
Keywords: Postmenopause, eGFR, Menopausal Symptoms, Osteoporosis, Depression.

ÇATIŞMA VE YOKSULLUK ŞOKLARI ALTINDA POLİTİKA ÖNCELİKLENDİRMESİ İÇİN NORMATİF AJAN-TEMELLİ BİR ÇERÇEVE

NORMATIVE AGENT-BASED FRAMEWORK FOR POLICY PRIORITIZATION UNDER CONFLICT AND POVERTY SHOCKS

Çağlar AKAR
Dr. Öğr. Üyesi Çağlar AKAR, İstanbul Okan Üniversitesi, Meslek Yüksekokulu, Bilgisayar Teknolojileri Bölümü, İstanbul, Türkiye.
ORCID: 0000-0001-8176-2805

ÖZET
Bu çalışma, kırılgan ve çatışmadan etkilenen ülkelerde politika önceliklendirmesini değerlendirmek amacıyla bir karar destek çerçevesi geliştirmektedir. Araştırma, nedensel etki tahmini yapmaktan ziyade, belirsizlik koşulları altında politika seçeneklerinin nasıl karşılaştırılabileceği ve sistematik biçimde önceliklendirilebileceği sorusuna odaklanmaktadır. 2000–2024 dönemini kapsayan ülke-yıl panel veri seti, çatışma verileri, makroekonomik göstergeler, insani gelişme ölçütleri ve uluslararası yoksulluk istatistiklerinin birleştirilmesiyle oluşturulmuştur. Gözlemlenen yoksulluk değişimleri temel alınarak kural temelli bir politika karşılaştırma yapısı kurulmuştur. Bu yapı nedensel bir iddia sunmamakta, yalnızca geçmiş refah sonuçlarına göre politika alternatiflerini sıralamaktadır. Ardından denetimli öğrenme yaklaşımıyla geliştirilen model, bu sıralama mantığını öğrenerek sonuçların henüz ortaya çıkmadığı yeni durumlara uygulamaktadır. Bulgular, politika önceliklerinin bağlama göre değiştiğini göstermektedir. Görece istikrarlı dönemlerde sosyal yardım politikaları öne çıkarken, ekonomik bozulma ve çatışma şoklarının yaşandığı dönemlerde fiyat istikrarı ve güvenlik odaklı müdahaleler daha belirgin hale gelmektedir. Modelin ülkeler arası genellenebilirliğinin zamansal genellenebilirliğe göre daha yüksek olması, zaman içindeki yapısal oynaklığın daha belirleyici bir unsur olduğunu ortaya koymaktadır. Çalışma, kırılgan ortamlarda politika alternatiflerini karşılaştırmaya yönelik şeffaf ve uygulanabilir bir çerçeve sunmaktadır.
Anahtar Kelimeler: Normatif politika öğrenimi, Ajan temelli karar çerçevesi, Yoksulluk dinamikleri, Silahlı çatışma şokları, Politika önceliklendirmesi.

ABSTRACT
This paper proposes a decision-support framework for policy prioritization in fragile and conflict-affected countries. Instead of estimating causal effects, the study focuses on how policy choices can be compared and structured when decision-makers operate under uncertainty. A country–year panel covering the period 2000–2024 is constructed by combining conflict data, macroeconomic indicators, development measures, and international poverty statistics. On this basis, a rule-based policy benchmark is defined using observed changes in poverty outcomes. This benchmark does not claim to identify causal impacts; it simply ranks policy options according to realized welfare patterns. A supervised learning model is then trained to approximate this ranking logic and apply it to situations where future outcomes are unknown. The results suggest that policy priorities shift in response to contextual conditions. Social assistance is more prominent during relatively stable periods, whereas price stabilization and conflict-related interventions become more relevant in times of economic distress or heightened violence. The model generalizes more effectively across countries than across time, indicating that temporal instability presents a greater challenge than cross-country heterogeneity. Overall, the framework offers a structured and transparent tool for comparing policy alternatives in environments characterized by fragility and uncertainty.
Keywords: Normative policy learning, Agent-based decision framework, Poverty Dynamics, Armed conflict shocks, Policy prioritization.

3B BASKI İLE ÜRETİLMİŞ POLİMER MALZEMELERİN SONLU ELEMANLAR ANALİZİ İLE KARŞILAŞTIRMALI DEĞERLENDİRİLMESİ

COMPARATIVE EVALUATION OF 3D PRINTED POLYMER MATERIALS USING FINITE ELEMENT ANALYSIS

Özbil ÖZMEN
Öğretim Görevlisi, İstanbul Okan Üniversitesi, Meslek Yüksekokulu, Makine ve Metal Teknolojileri Bölümü, İstanbul, Türkiye.

ÖZET

Bu çalışmada, eklemeli imalat yöntemiyle üretilmiş polimer esaslı yapısal bileşenlerde, farklı termoplastik malzemelerin sonlu elemanlar analizi sonuçları üzerindeki etkisi sayısal olarak incelenmiştir. Çalışma kapsamında, ABS, PETG, PLA ve PLA+ filamentler için tanımlanan malzeme özelliklerinin, basma yükü altında kanat bileşeni üzerinde oluşan gerilme dağılımları ile ilişkisi ele alınmıştır. Bu amaçla, insansız hava aracı kanat bileşenlerini temsil eden bir yapısal geometri kullanılarak, aynı sınır şartları altında karşılaştırmalı sonlu elemanlar analizleri gerçekleştirilmiştir. Sonlu elemanlar analizleri kapsamında, tüm malzemeler homojen ve izotrop kabul edilerek sayısal değerlendirmeler yapılmıştır. Temel mekanik parametreler modele tanımlanarak, basma yükü altındaki eşdeğer gerilme dağılımları incelenmiştir. Analizlerde maksimum eşdeğer gerilme değerleri esas alınarak malzemeler arası karşılaştırmalar yapılmıştır. Elde edilen sayısal sonuçlar, malzeme özelliklerindeki farklılıkların kanat bileşeni üzerinde hesaplanan gerilme seviyeleri ve gerilme dağılım karakteristiği üzerinde etkili olduğunu göstermektedir. Basma yükü altındaki sonlu elemanlar analizleri, eşdeğer gerilme seviyelerinin en yüksekten en düşüğe doğru PLA+, PLA, ABS ve PETG malzemeleri şeklinde sıralandığını ortaya koymuştur. Ayrıca, daha rijit davranış gösteren malzemelerde gerilme yoğunlaşmalarının belirli bölgelerde toplandığı, nispeten daha sünek davranış sergileyen malzemelerde ise gerilmenin daha geniş alanlara yayıldığı gözlenmiştir. Bu bulgular, kanat bileşenleri için gerçekleştirilen sonlu elemanlar analizleri arasındaki ilişkiyi ortaya koymakta ve malzeme seçiminin yapısal gerilme davranışı üzerindeki etkisini vurgulamaktadır. Bununla birlikte, malzeme özelliklerinin sayısal olarak önceden değerlendirilmesi, eklemeli imalat süreçlerinde deneme, yanılma ihtiyacını azaltarak üretim sürecinde oluşabilecek malzeme israfının sınırlandırılmasına katkı sağlayabilir. Bu yönüyle çalışma, eklemeli imalat tabanlı tasarım yaklaşımlarının daha sürdürülebilir ve kaynak verimliliği yüksek uygulamalara yönlendirilmesine yönelik sayısal bir çerçeve sunmaktadır.

Anahtar Kelimeler: Eklemeli imalat, 3B baskı, sonlu elemanlar analizi, termoplastik malzemeler, basma analizi.

ABSTRACT

In this study, the effect of different thermoplastic materials on the finite element analysis results of polymer-based structural components manufactured by additive manufacturing was numerically investigated. Within the scope of the study, the relationship between the material properties defined for ABS, PETG, PLA, and PLA+ filaments and the stress distributions occurring on the wing component under compressive loading was examined. For this purpose, comparative finite element analyses were carried out under identical boundary conditions using a structural geometry representing unmanned aerial vehicle wing components. Within the finite element analyses, all materials were assumed to be homogeneous and isotropic, and numerical evaluations were performed accordingly. Fundamental mechanical parameters were defined in the model, and the equivalent stress distributions under compressive loading were analyzed. Comparisons among the materials were conducted based on maximum equivalent stress values. The obtained numerical results indicate that differences in material properties significantly affect the calculated stress levels and stress distribution characteristics on the wing component. The finite element analyses under compressive loading revealed that the equivalent stress levels were ranked from highest to lowest as PLA+, PLA, ABS, and PETG.

Furthermore, stress concentrations were observed to accumulate in specific regions for materials exhibiting more rigid behavior, whereas in relatively more ductile materials, stresses were distributed over wider areas. These findings demonstrate the relationship between the finite element analyses conducted for the wing components and emphasize the effect of material selection on structural stress

behavior. In addition, the numerical pre-evaluation of material properties may contribute to limiting material waste during production by reducing the need for trial and error processes in additive manufacturing. In this respect, the study provides a numerical framework for guiding additive manufacturing-based design approaches toward more sustainable and resource efficient applications.

Keywords: Additive manufacturing, 3D printing, finite element analysis, thermoplastic materials, compressive analysis.

THE REAL EROSIVE EFFECT OF INFLATION ON CORPORATE INCOME TAX REVENUES: EVIDENCE FROM TÜRKİYE

Assoc. Prof. Dr. Cihan YÜKSEL
Mersin University, Faculty of Economics and Administrative Sciences,
Department of Public Finance, Mersin-Türkiye
ORCID: 0000-0003-1959-1245

ABSTRACT
The loss in the real value of tax revenues arising from the time lag between the generation of taxable economic activity and the actual collection of taxes has been widely discussed in the public finance literature within the framework of the Olivera–Tanzi effect. This study examines the real erosion of corporate tax revenues caused by inflation in Türkiye over the period 2012Q4–2025Q4 using quarterly data. The main objective is to measure the extent to which inflation reduces the real value of corporate tax revenues by accounting for differences in collection lags across the components of the corporate tax system and to discuss the implications of this process for the class distribution of the tax burden.
The analysis utilizes quarterly Consumer Price Index (CPI) data and general government budget statistics for Türkiye. Different collection lags are assigned to the subcomponents of corporate taxation: declarative corporate income tax is assumed to have an average collection lag of three quarters, while provisional corporate tax is assigned a lag of one quarter. Corporate tax withholding is excluded from the erosion calculations because it is collected at source and therefore involves no collection lag. Real erosion rates are calculated separately for each component and then aggregated into a composite erosion rate for total corporate tax revenues using their respective shares in total collections.
The findings indicate that corporate tax revenues experience substantial real value losses during periods of high inflation. In contrast, wage income taxes collected through withholding are not subject to comparable erosion because they are collected immediately at the source. This asymmetry suggests that inflation, through the timing structure of tax collection, effectively reduces the real tax burden on capital while increasing the relative contribution of labor income to public revenues. The study therefore argues that inflation should be understood not only as a macroeconomic phenomenon but also as a fiscal mechanism that influences the distribution of the tax burden across social classes.
Keywords: Inflation, Corporate Income Tax, Tax Collection Lags, Real Tax Erosion.

EXAMINING THE EFFECTS OF DISTANCE EDUCATION ON VALUES EDUCATION

Dr. Aynur PALA
Manisa Celal Bayar University, Educational Faculty, Educational Sciences Department, Manisa
ORCID:0000-0003-4889-7438

ABSTRACT
Distance education has expanded rapidly in higher education, yet its implications for students' interpersonal relationships remain underexplored. The aim of this study is to examine the effects of distance education on students' friendship relationships. The study focuses on how students establish, maintain, and develop friendships during the distance education process. A qualitative research method was employed, and data were collected through eight open-ended questions and analyzed using content analysis. The findings reveal that distance education weakens the quality of friendships due to the lack of face-to-face interaction, although digital communication tools play a significant role in maintaining social connections.
Keywords: Distance education, friendship relationships, social interaction, university students, values education.

INTEGRATED IN SILICO EVALUATION OF THE PUTATIVE EFFECT OF E-6801 ON B-SECRETASE 1 (BACE1), AN ALZHEIMER'S DISEASE-ASSOCIATED ENZYME, USING DFT, ADME, AND MOLECULAR DOCKING APPROACHES

Lecturer Dr. Selçuk Kılıç
Erzincan Binali Yildirim University, Health Services Vocational School
Erzincan- Türkiye
ORCID: 0000-0002-5261-6291

ABSTRACT

Alzheimer's disease is a progressive neurodegenerative disorder characterized by multiple interrelated pathological mechanisms, including amyloid-beta (Aβ) accumulation, tau pathology, synaptic loss, cholinergic dysfunction, oxidative stress, and neuroinflammation. β-Secretase 1 (BACE1) is regarded as a major target for disease-modifying therapeutic strategies aimed at reducing Aβ production because it catalyzes the initial and rate-limiting proteolytic step of amyloid precursor protein processing through the amyloidogenic pathway (Vassar et al., 1999; Yan et al., 1999; Selkoe & Hardy, 2016). In the present study, the putative binding profile of E-6801 [6-chloro-N-(3-(2-(dimethylamino)ethyl)-1H-indol-5-yl)imidazo[2,1-b]thiazole-5-sulfonamide], a molecule previously associated with procognitive effects through serotonin 5-HT6 receptor modulation, was investigated against BACE1 using the crystal structure with PDB ID: 7D2V within a molecular docking framework (Kendall et al., 2011; Fujimoto et al., 2021).

The optimized geometry of E-6801 was examined at the DFT/B3LYP/6-311++G(d,p) level, and its electronic reactivity profile was evaluated using HOMO–LUMO, molecular electrostatic potential (MEP), dipole moment, polarizability, and first hyperpolarizability parameters. The MEP analysis indicated that the sulfonyl oxygen atoms and heteroatom-rich regions exhibited negative electrostatic potential, whereas the protonatable dimethylaminoethyl center displayed positive electrostatic character. Molecular docking analysis suggested that E-6801 may form electrostatic, hydrogen-bonding, cation–π, π-based, and hydrophobic interactions with residues such as Asp32, Asp228, Tyr71, Thr232, Phe108, Trp115, and Tyr198 within the BACE1 binding pocket. The calculated docking score was −4.014 kcal/mol. This value should not be interpreted as evidence of potent experimental BACE1 inhibition, but rather as a moderate theoretical binding tendency requiring further validation. In the corrected ADME/drug-likeness assessment, the molecular weight of E-6801 was confirmed as 423.93 g/mol, indicating that the previously reported value of 252.272 g/mol was inconsistent with the identity of the compound. Overall, E-6801 represents a meaningful preliminary candidate for multitarget *in silico* investigations involving 5-HT6 receptor-mediated cognitive modulation and the BACE1-related amyloidogenic pathway. However, no therapeutic efficacy claim should be made before validation through enzymatic BACE1 inhibition assays, cell-based Aβ production analyses, blood–brain barrier permeability studies, and long-timescale molecular dynamics simulations.

Keywords: E-6801; Alzheimer's disease; BACE1; 7D2V; molecular docking; DFT; MEP; NLO; ADME

COMPUTATIONAL PRELIMINARY INSIGHTS INTO TLR7/8-MEDIATED IMMUNOMODULATION: A SCHRÖDINGER GLIDE-BASED MOLECULAR DOCKING ANALYSIS OF THE IMIDAZO[4,5-C]QUINOLINE DERIVATIVE IT-37 WITH HUMAN TOLL-LIKE RECEPTOR 8

Dr. Selçuk Kılıç
Erzincan Binali Yıldırım University, Vocational School of Health Services, Erzincan, Türkiye
ORCID: 0000-0002-5261-629

ABSTRACT

This study presents a preliminary computational analysis evaluating the putative binding orientation of IT-37, an imidazo[4,5-c]quinoline derivative, within the ligand-binding pocket of human Toll-like receptor 8 (TLR8) using a Schrödinger Maestro/Glide-based molecular docking approach. The crystal structure of human TLR8 complexed with resiquimod/R848 (PDB ID: 3W3M) was selected as the target structure. Unlike catalytically active enzymes, 3W3M represents a dimeric, agonist-responsive endosomal innate immune receptor. Therefore, the findings of this study were interpreted not in terms of "active site," "enzyme inhibition," or "inhibitory activity," but rather within the framework of an "agonistic ligand-recognition pocket," "receptor modulation," and a "computational binding hypothesis." In the current docking output, IT-37 exhibited a Glide docking score of -5.106 kcal/mol, a Glide Emodel value of -37.754 kcal/mol, and a Glide energy of -26.421 kcal/mol. These values suggest that IT-37 may adopt a structurally plausible binding pose within the ligand-recognition pocket located at the TLR8 dimer interface. However, these docking results alone should not be considered definitive evidence of TLR8 agonism, biological activity, or therapeutic efficacy. In the literature, IT-37 has been discussed by Sabet et al. in the context of TLR-related immunomodulation using a murine macrophage/Bacillus anthracis infection model; however, this evidence does not directly demonstrate experimental activity against human TLR8. Accordingly, rather than claiming direct experimentally confirmed activity of IT-37 on human TLR8, the present study proposes a structure-based computational hypothesis associated with the broader literature on TLR7/8-mediated immunomodulation. To strengthen the translational and publication value of this work, further validation is recommended through R848 redocking, comparative scoring analysis with R848, MM-GBSA binding free energy estimation, 50–100 ns molecular dynamics simulations, and confirmation using a cell-based TLR8 reporter assay.

Keywords: IT-37; TLR8; 3W3M; R848; resiquimod; imidazoquinoline; molecular docking

DFT STUDIES OF 1,3-BENZODIOXOLE-5-SULFONAMIDE

Prof. Dr. Yusuf SERT
Yozgat Bozok University, Sorgun Vocational School, Yozgat, Türkiye
ORCID: 0000-0001-8836-8667

ÖZET
Bu çalışmada, biyolojik açıdan ilgi çekici bir sülfonamit türevi olan 1,3-benzodioksol-5-sülfonamit molekülünün yapısal, titreşimsel ve elektronik özellikleri tamamen kuramsal bir yaklaşımla incelenmiştir. Öncelikle molekülün başlangıç geometrisi oluşturulmuş ve DFT/B3LYP yöntemiyle 6 311++G(d,p) baz seti kullanılarak gaz fazında geometri optimizasyonu gerçekleştirilmiştir. Optimize edilen yapıda bağ uzunlukları, bağ açıları ve dihedral açılar değerlendirilerek molekülün minimum enerji konformasyonu ortaya konmuştur. Ardından teorik IR spektrumuna karşılık gelen harmonik titreşim frekansları hesaplanmış; elde edilen normal titreşim modları VEDA4 programı aracılığıyla potansiyel enerji dağılımı (PED) katkıları temelinde ayrıntılı biçimde atanmıştır. Özellikle N-H, C-H, C-C, S=O, S-N ve C-O titreşimleri molekülün karakteristik spektroskopik atamaları olarak belirlenmiştir. Bu yaklaşım, yalnızca frekans değerlerinin raporlanmasıyla sınırlı kalmayıp, her bir bandın moleküler hareket içindeki fiziksel karşılığını da açıklamaya olanak sağlamıştır. Çalışmanın elektronik yapı kısmında ise frontier molecular orbital (FMO) analizi uygulanmış; HOMO ve LUMO enerji düzeyleri, enerji aralığı ve temel global reaktivite parametreleri hesaplanmıştır. HOMO-LUMO enerji farkının 5.24 eV olarak bulunması, molekülün belirgin kinetik kararlılığa ve sınırlı kimyasal yumuşaklığa sahip olduğunu göstermektedir. Literatürde bu moleküle ait sistematik bir DFT, teorik IR/PED ve FMO çalışmasına rastlanmaması, mevcut araştırmanın özgün değerini artırmaktadır. Bu nedenle çalışma, deneysel veri üretmeden önce molekülün yapısal ve elektronik davranışını anlamaya yönelik düşük maliyetli ve güvenilir bir ön değerlendirme sunmaktadır. Elde edilen sonuçlar, ileride yapılacak deneysel FT-IR/Raman çalışmaları ve sülfonamit temelli moleküler tasarım araştırmaları için güvenilir bir kuramsal referans sunmaktadır.
Anahtar Kelimeler: 1,3-Benzodioksol-5-sülfonamit; DFT; Teorik IR spektrum; VEDA 4; FMO analizi.

ABSTRACT
This study presents a purely theoretical investigation of the structural, vibrational and electronic properties of 1,3-benzodioxole-5-sulfonamide, a sulfonamide derivative of potential scientific and biological interest. The initial molecular geometry was constructed and fully optimized in the gas phase using the DFT/B3LYP method with the 6-311++G(d,p) basis set. The optimized structure was evaluated in terms of bond lengths, bond angles and dihedral angles, providing a reliable minimum energy conformation for the molecule. Subsequently, the theoretical IR spectrum was obtained from harmonic vibrational frequency calculations, and the corresponding normal modes were assigned in detail using the VEDA4 program on the basis of potential energy distribution (PED) contributions. The N-H, C-H, C-C, S=O, S-N and C-O vibrational modes were identified as the main spectroscopic signatures of the compound. In addition, frontier molecular orbital (FMO) analysis was carried out to clarify the electronic structure and reactivity behavior of the optimized molecule. The calculated HOMO and LUMO energies, energy gap and related global reactivity descriptors revealed that the compound has a relatively stable electronic framework. In particular, the HOMO-LUMO gap of 5.24 eV indicates pronounced kinetic stability and limited chemical softness. Since no systematic DFT based geometry optimization, theoretical IR/PED assignment and FMO analysis appears to have been reported for this molecule, the present work provides an original theoretical contribution. The obtained data may serve as a useful reference for future FT-IR/Raman measurements and for the rational design of sulfonamide-based molecular systems.
Keywords: 1,3-Benzodioxole-5-sulfonamide; DFT; Theoretical IR spectrum; VEDA4; FMO analysis.

MEP AND DOCKING ANALYSIS OF 1,3-BENZODIOXOLE-5-SULFONAMIDE

Prof. Dr. Yusuf SERT
Yozgat Bozok University, Sorgun Vocational School, Yozgat, Türkiye
ORCID: 0000-0001-8836-8667

ÖZET
Bu çalışmada, 1,3-benzodioksol-5-sülfonamit molekülünün elektrostatik yüzey özellikleri ve olası biyomoleküler etkileşim eğilimi tamamen kuramsal bir yaklaşımla araştırılmıştır. Çalışmanın temelini, DFT/B3LYP yöntemi ve 6-311++G(d,p) baz seti kullanılarak elde edilen optimize moleküler geometri oluşturmuştur. Optimize yapı üzerinden moleküler elektrostatik potansiyel (MEP) haritası hesaplanmış ve molekülün elektronca zengin/elektronca fakir bölgeleri üç boyutlu elektrostatik yüzey üzerinde yorumlanmıştır. MEP dağılımı, sülfonil oksijenleri ve benzodioksol halkasındaki oksijen atomlarının güçlü elektron yoğunluğuna sahip başlıca hidrojen bağı kabul edici merkezler olduğunu; sülfonamit grubuna bağlı N-H hidrojenlerinin ise elektrofilik karakter göstererek hidrojen bağı verici bölgeler oluşturduğunu ortaya koymuştur. Bu elektrostatik davranış, molekülün hedef biyomakromoleküllerle yönlenmiş ve seçici etkileşimler kurabileceğini göstermektedir. Çalışmanın ikinci aşamasında, optimize ligand yapısı moleküler docking analizine tabi tutulmuş ve seçilmiş biyolojik hedef proteinin aktif bölgesindeki bağlanma eğilimi değerlendirilmiştir. Docking sonuçları; sülfonamit fonksiyonel grubunun hidrojen bağı, dipol-dipol ve polar temaslar açısından önemli bir rol oynadığını, benzodioksol halkasının ise hidrofobik ve olası pi-temelli etkileşimlerle bağlanma kararlılığına katkı sağlayabileceğini göstermiştir. MEP analizi ile docking etkileşim profili arasındaki uyum, molekülün elektrostatik tanınma bölgelerinin bağlanma modunu yönlendirdiğini desteklemektedir. Literatürde bu molekül için MEP ve docking sonuçlarını birlikte değerlendiren sistematik çalışmaların sınırlı olması, mevcut araştırmanın özgün değerini artırmaktadır. Bu çalışma, deneysel uygulamalardan önce 1,3 benzodioksol-5-sülfonamit molekülünün etkileşim potansiyelini anlamaya yönelik düşük maliyetli, güvenilir ve sürdürülebilir bir teorik ön değerlendirme sunmaktadır.
Anahtar Kelimeler: 1,3-Benzodioksol-5-sülfonamit; MEP analizi; Moleküler docking; DFT; Hesaplamalı kimya.

ABSTRACT
In this study, the electrostatic surface characteristics and possible biomolecular interaction tendency of 1,3-benzodioxole-5-sulfonamide were investigated using a fully theoretical approach. The optimized molecular geometry obtained at the DFT/B3LYP level with the 6-311++G(d,p) basis set was used as the structural basis of the calculations. Molecular electrostatic potential (MEP) analysis was performed on the optimized structure to identify electron-rich and electron-deficient regions on the three dimensional electrostatic surface. The MEP distribution indicated that the sulfonyl oxygen atoms and the oxygen atoms of the benzodioxole ring represent the main electron-rich hydrogen-bond acceptor sites, whereas the N-H hydrogens of the sulfonamide group behave as electrophilic hydrogen-bond donor regions. This electrostatic profile suggests that the molecule may establish directional and selective interactions with biological macromolecular environments. In the second stage, the optimized ligand was subjected to molecular docking analysis, and its binding tendency within the active region of a selected biological target protein was evaluated. The docking results suggest that the sulfonamide moiety may play a key role through hydrogen bonding, dipole-dipole interactions and polar contacts, while the benzodioxole ring may contribute to binding stabilization through hydrophobic and possible pi-related interactions. The consistency between the MEP profile and the docking interaction pattern supports the idea that electrostatic recognition sites govern the binding orientation of the molecule. Since systematic studies combining MEP and docking analyses for this molecule appear to be limited, the present work provides an original theoretical contribution. Overall, this study offers a low-cost, reliable and sustainable preliminary evaluation for understanding the interaction potential of 1,3-benzodioxole-5-sulfonamide before experimental applications.
Keywords: 1,3-Benzodioxole-5-sulfonamide; MEP analysis; Molecular docking; DFT; Computational chemistry.

LETONYA MUTFAK KÜLTÜRÜ
LATVIAN CULINARY CULTURE

Doç. Dr. Ayhan DAĞDEVİREN
Çankırı Karatekin Üniversitesi, Turizm Fakültesi,
Turizm İşletmeciliği Bölümü, Çankırı-Türkiye
ORCID: 0000-0003-0004-8007

İbrahim MERCİMEK
Çankırı Karatekin Üniversitesi, Lisansüstü Eğitim Enstitüsü,
Sağlık Turizmi Anabilim Dalı, Çankırı-Türkiye
ORCID: 0009-0003-3518-7493

ÖZET
Bu çalışmanın amacı, Letonya mutfak kültürünü tarihsel gelişimi, öne çıkan yiyecek ve içecekleri, günlük öğün düzeni ile gastronomi mekânları ve etkinlikleri çerçevesinde incelemektir. Letonya mutfak kültürünün biçimlenmesinde ülkenin coğrafi konumu, iklim koşulları, tarımsal üretim olanakları ve farklı toplumlarla kurduğu tarihsel ilişkiler belirleyici olmuştur. Uzun ve soğuk kışlar ile kısa üretim dönemleri, yerel ve mevsimsel ürünlerin kullanılmasına; tuzlama, tütsüleme, salamura ve fermantasyon gibi saklama yöntemlerinin yaygınlaşmasına zemin hazırlamıştır. Bu doğrultuda Letonya mutfağı, tahıllar, hayvansal ürünler, dayanıklı sebzeler ve doğadan elde edilen besinler çevresinde şekillenmiştir. Baltık Alman, İsveç, Polonya ve Rus etkileri ile Sovyet döneminde yaygınlaşan toplu beslenme uygulamaları ise yerel mutfak kültürüne farklı ürün, tarif ve hazırlama tekniklerinin dâhil olmasını sağlamıştır. Çalışmada Letonya mutfağında öne çıkan yiyecekler; içerikleri, hazırlanma ve sunulma biçimleri ile tüketim özellikleri bakımından ekmekler, süt ürünleri, atıştırmalıklar ve başlangıçlar, çorbalar, ana yemekler ve tatlılar başlıkları altında sınıflandırılarak incelenmiştir. Huş ağacı suyu, kvass ve Riga Black Balsam ise Letonya içecek kültürünün farklı örnekleri olarak ele alınmıştır. Günlük öğün düzeninin incelenmesi, geleneksel beslenme alışkanlıkları ile çağdaş tüketim biçimlerinin bir arada sürdüğünü göstermektedir. Restoranlar, yerel pazarlar, üretim tesisleri, müzeler ve gastronomi etkinlikleri de yerel ürünlerin ve geleneksel üretim bilgisinin tanıtılmasına katkıda bulunmaktadır. Sonuç olarak Letonya mutfak kültürü, doğal çevreye uyum sağlayan uygulamalar ile farklı tarihsel ve kültürel etkilerin yerel koşullarda dönüştürülmesi sonucunda oluşmuş çok katmanlı ve dinamik bir yapı sergilemektedir.
Anahtar Kelimeler: Letonya, Mutfak, Mutfak Kültürü

ABSTRACT
The aim of this study is to examine Latvian culinary culture within the framework of its historical development, prominent foods and beverages, daily meal patterns, and gastronomic venues and events. The country’s geographical location, climatic conditions, agricultural production capabilities, and historical relationships with different societies have been decisive in shaping Latvian culinary culture. Long, cold winters and short growing seasons have fostered the use of local and seasonal products and the widespread adoption of preservation methods such as salting, smoking, pickling, and fermentation. Accordingly, Latvian cuisine has developed around grains, animal-based products, hardy vegetables, and foods gathered from the wild. Baltic German, Swedish, Polish, and Russian influences, as well as the mass catering practices that became widespread during the Soviet era, have led to the inclusion of various ingredients, recipes, and preparation techniques in the local culinary culture. In this study, prominent foods in Latvian cuisine are classified and examined under the headings of breads, dairy products, snacks and appetizers, soups, main courses, and desserts, based on their ingredients, preparation and presentation methods, and consumption characteristics. Birch juice, kvass, and Riga Black Balsam are examined as distinctive examples of Latvian beverage culture. An analysis of daily meal patterns reveals the coexistence of traditional eating habits and contemporary consumption patterns.Restaurants, local markets, production facilities, museums, and gastronomic events also contribute to the promotion of local products and traditional production knowledge.

In conclusion, Latvian culinary culture exhibits a multilayered and dynamic structure shaped by practices adapted to the natural environment and by the transformation of diverse historical and cultural influences within the local context.

Keywords: Latvia, Cuisine, Culinary Culture

LİTVANYA'NIN SAĞLIK TURİZMİ POLİTİKALARI VE UYGULAMALARI

HEALTH TOURISM POLICIES AND PRACTICES OF LITHUANIA

İbrahim MERCİMEK
Çankırı Karatekin Üniversitesi, Lisansüstü Eğitim Enstitüsü, Sağlık Turizmi Anabilim Dalı, Çankırı-Türkiye
ORCID: 0009-0003-3518-7493

Doç. Dr. Ayhan DAĞDEVİREN
Çankırı Karatekin Üniversitesi, Turizm Fakültesi, Turizm İşletmeciliği Bölümü, Çankırı-Türkiye
ORCID: 0000-0003-0004-8007

ÖZET
Bu araştırmanın amacı, Litvanya'nın sağlık turizmi alanında geliştirdiği politikaları, stratejik yönelimleri ve uygulamalarını inceleyerek ülkenin sağlık turizmi destinasyonu olarak konumlanma sürecini değerlendirmektir. Bu kapsamda Litvanya'nın sağlık turizmi politikaları, sağlık altyapısı, hizmet çeşitliliği ve uluslararası pazardaki rekabet gücüne katkıları analiz edilmiştir. Araştırmada nitel araştırma yaklaşımı benimsenmiş ve doküman incelemesi yöntemi kullanılmıştır. Bu doğrultuda Litvanya'nın sağlık turizmine ilişkin ulusal strateji belgeleri, turizm ve sağlık politikaları, resmi kurum raporları ile konuya ilişkin akademik çalışmalar incelenmiştir. Elde edilen veriler, içerik analizi yöntemiyle değerlendirilmiş ve sağlık turizmi politikalarının temel bileşenleri ile uygulama alanları tematik olarak sınıflandırılmıştır. Araştırma bulguları, Litvanya'nın sağlık turizmini geliştirmek amacıyla kamu ve özel sektör iş birliğine dayalı bütüncül politikalar geliştirdiğini göstermektedir. Özellikle wellness turizmi, rehabilitasyon hizmetleri, diş tedavileri ve estetik uygulamalar ülkenin sağlık turizmi ürün çeşitliliğinin önemli unsurlarını oluşturmaktadır. Ayrıca uygun maliyetli sağlık hizmetleri, nitelikli sağlık personeli ve Avrupa Birliği standartlarında sağlık altyapısı Litvanya'nın uluslararası sağlık turizmi pazarındaki rekabet gücünü artıran temel faktörler arasında yer almaktadır. Bu bağlamda Litvanya'nın sağlık turizmi politikalarının turizmde ürün çeşitlendirme stratejileriyle uyumlu olduğu ve ülkenin sağlık turizmi alanında sürdürülebilir bir gelişim potansiyeline sahip olduğu sonucuna ulaşılmıştır.
Anahtar Kelimeler: Litvanya, Sağlık Turizmi, Sağlık Turizmi Politikaları, Sağlık Turizmi Uygulamaları, Hizmet Çeşitliliği

ABSTRACT
The aim of this research is to examine the policies, strategic orientations, and practices developed by Lithuania in the field of health tourism and to evaluate the country's positioning process as a health tourism destination. In this context, Lithuania's health tourism policies, healthcare infrastructure, service diversity, and contributions to international market competitiveness were analyzed. A qualitative research approach was adopted, and document analysis was used as the data collection method. Accordingly, national strategy documents, tourism and health policies, official institutional reports, and relevant academic studies related to health tourism in Lithuania were examined. The collected data were analyzed using content analysis, and the core components and application areas of health tourism policies were thematically classified. The findings indicate that Lithuania has developed comprehensive policies based on public and private partnership to promote health tourism. In particular, wellness tourism, rehabilitation services, dental treatments, and aesthetic applications constitute important elements of the country's health tourism service diversity. Additionally, affordable healthcare services, qualified healthcare personnel, and EU-standard healthcare infrastructure are key factors enhancing Lithuania's competitiveness in the international health tourism market. In this regard, Lithuania's health tourism policies align with its tourism product diversification strategies, and the country demonstrates sustainable development potential in the health tourism sector.
Keywords: Lithuania, Health Tourism, Health Tourism Policies, Health Tourism Practices, Service Diversity

SATILMIŞ ŞEN'İN ŞİİRİNDE AV KÜLTÜRÜ İZLERİ

TRACES OF HUNTING CULTURE IN SATILMIŞ SEN'S POETRY

Dr. Ahmet Ünlü
Milli Eğitim Bakanlığı, Çankırı, Türkiye
ORCID: 0000-0002-1393-5812

ÖZET

Türk edebiyat tarihi içerisinde değerlendirilen, hakkında araştırma ve yayınlar yapılan binlerce sanatçımızın yanında henüz keşfedilmemiş ancak edebiyat tarihi ve edebiyat bilimi içinde incelenmesi gereken bir o kadar da keşfedilmemiş sanatçımız vardır. Çalışmamızda ele aldığımız Satılmış Şen Türk edebiyat tarihinin ve edebiyat biliminin henüz keşfetmediği bir sanatçımızdır. Öğretmen bir şair olan Şen, şiirlerini halk şiiri tarzıyla yazmasının yanında divan şiiri ve modern Türk şiirinin birikiminden de faydalanmıştır. Çalışmada şairin av kültürü ile ilgili şiirleri değerlendirilecektir. Eski Türk yaşam biçiminde geniş bir yere sahip olan av kültürü günümüzde de bir realite olarak karşımıza çıkmaktadır. Avcılık eski devirlerde hayatı devam ettirmenin vazgeçilmez bir unsuru iken günümüz de bir tutkunun aktivitesi olmuştur. Bu değişimin yanında değişmeyen ise av ve avcılık etrafında oluşan bir edebiyatın varlığıdır. Destan devirlerinde sığır törenlerinde avın bereketli olması için yapılan ayinlerde söylenen koşuklardan günümüze kadar av ve avcılık üzerine geniş bir külliyat oluşmuştur. Av ve av hayvanları çeşitli yönlerden edebi metinlere kaynaklık etmiştir. Av ve avcılık üzerine fıkralar avcılar ve ava meraklı kişiler tarafından hem anlatılmış hem de can kulağı ile dinlenip kulaktan kulağa nakledilmiştir. Satılmış Şen'de şiirlerinde doğrudan veya dolaylı olarak av ve av hayvanlarını işlemiştir. Ilgaz Dağları onun şiirinde önemli bir mekandır. Şen'de av hayvanı olarak geyik karşımıza çıkar. Şen avcı-av karşıtlığında geyiğin mitolojik sırrını irdeler.

Anahtar Kelimeler: Şiir, Halk Kültürü, Av

ABSTRACT

"In addition to the thousands of artists evaluated within the history of Turkish literature and subjected to extensive research and publications, there remains an equal number of undiscovered figures who merit examination within literary history and literary science. Satılmış Şen, the subject of this study, is an artist who has not yet been discovered by the history and science of Turkish literature. As a poet-teacher, Şen has utilized the heritage of Divan poetry and modern Turkish poetry, while primarily composing his poems in the folk poetry style. This study evaluates the poet's works concerning hunting culture. Hunting culture, holding a prominent place in the ancient Turkish way of life, persists as a reality today. While hunting had been an indispensable element for sustaining life in ancient eras, it has transformed into a passion-driven activity in modern times. Despite this transformation, what remains unchanged is the existence of a body of literature revolving around hunting and hunters. From the *koşuks* (lyric poems) recited during the ancient *sığır* (hunting) ceremonies to invoke abundance, a vast literature on hunting and hunting practices has accumulated to the present day. Hunting and game animals have served as resources for literary texts in various aspects. Anecdotes about hunting and hunters have been shared by enthusiasts and listeners alike, transmitted orally through generations. Satılmış Şen has also directly or indirectly incorporated hunting and game animals into his poetry. The Ilgaz Mountains serve as a significant setting in his poems. In Şen's work, the deer emerges as the primary game animal. Within the hunter-prey dichotomy, Şen explores the mythological mystery of the deer."

Keywords: Poetry, Folk Culture, Hunting

THE PROBLEM OF COMPARABILITY OF FINANCIAL STATEMENTS IN A HIGH-INFLATION ENVIRONMENT: A LITERATURE REVIEW FROM THE PERSPECTIVE OF ACCOUNTING STANDARDS AND FINANCIAL REPORTING

YÜKSEK ENFLASYON ORTAMINDA FİNANSAL TABLOLARIN KARŞILAŞTIRILABİLİRLİĞİ SORUNU: MUHASEBE STANDARTLARI VE FİNANSAL RAPORLAMA PERSPEKTİFİNDEN BİR LİTERATÜR İNCELEMESİ

Öğr. Gör. Oğuzhan DANIŞ
Yozgat Bozok Üniversitesi, Sorgun Meslek Yüksekokulu,
Muhasebe ve Vergi Bölümü, Yozgat, Türkiye.
ORCID: 0000-0001-6548-9490

ÖZET

Finansal tabloların temel niteliklerinden biri olan karşılaştırılabilirlik, finansal tablo kullanıcılarının işletmelerin finansal durumlarını farklı dönemler itibariyle veya farklı işletmelerle kıyaslayarak değerlendirmesine olanak sağlanmasıdır. Ancak küresel ekonomide yaşanan son değişimler enflasyon oranlarının yükselmesine yol açmıştır. Venezuela, Arjantin ve Türkiye başta olmak üzere birçok ülkede yaşanan yüksek enflasyon ortamı, firmaların finansal raporlarının karşılaştırılabilirliğini azaltmaktadır. Parasal değerlerin satın alma gücündeki azalmalar özellikle tarihi maliyet esasına göre raporlanan kalemlerin enflasyonist ortamda gerçek değerleriyle raporlanmasını güçleştirmektedir. Bu durum yüksek enflasyon ortamında farklı işletmelere veya farklı dönemlere ait finansal tabloların karşılaştırılabilirliğini azaltarak finansal tablo kullanıcılarının karar alma süreçlerini olumsuz etkilemektedir. Bu kapsamda yüksek enflasyonist ortamlarda finansal tabloların doğru şekilde raporlanması, finansal tablo kullanıcıları doğru bilgiye erişimi ve finansal bilginin faydalığı açısından önem taşımaktadır. Bu çalışmanın amacı, yüksek enflasyon ortamında hazırlanan finansal tablolarının karşılaştırılabilirliği sorununu ele alan literatürü değerlendirmek ve enflasyon muhasebesinin bu sorunun çözümündeki katkılarını ortaya koymaktır. Literatür, yüksek enflasyonun işletmelerin varlık, yükümlülük, gelir ve giderlerinin finansal tablolarında gerçeğe uygun sunumunu zorlaştırdığı ve bu durumun finansal tablolarının karşılaştırılabilirliğini güçleştirdiğini göstermektedir. Ayrıca enflasyon muhasebesi uygulamasıyla farklı satın alma güçleriyle finansal tablolarda yer alan kalemlerin cari satın alma gücüne göre düzeltilerek sunulmasının finansal tabloların karşılaştırılabilirliğini artırdığı belirtilmiştir. Sonuç olarak yüksek enflasyonist ortamlarda finansal raporların karşılaştırılabilirliğinin korunması amacıyla enflasyon muhasebesinin etkin biçimde uygulanmasının önemli olduğu değerlendirilmektedir.

Anahtar kelimeler: Enflasyon muhasebesi, finansal raporlama, finansal tablolar, karşılaştırılabilirlik, IAS 29, yüksek enflasyon.

ABSTRACT

One of the fundamental characteristics of financial statements is comparability, which allows users of financial statements to compare the financial positions of businesses over time or across businesses. But recent changes in the global economy have driven up inflation rates. High inflation in many countries, such as Venezuela, Argentina and Turkey, reduces the comparability of firms' financial reports. Loss of purchasing power makes it difficult to report the real values of monetary values in an inflationary environment. This is particularly true for items reported on a historical cost basis. This situation reduces the comparability of financial statements of different businesses or different periods in a high inflation environment, negatively affecting the decision-making processes of financial statement users. In this context, the accurate reporting of financial statements in high inflationary environments is important for financial statement users to access correct information and for the usefulness of financial information. The aim of this study is to evaluate the literature addressing the issue of comparability of financial statements prepared in a high inflation environment and to highlight the contributions of inflation accounting in solving this problem.

The literature shows that high inflation makes it difficult to present the assets, liabilities, income, and expenses of businesses in a true and fair manner in financial statements, and this situation complicates

the comparability of financial statements.It has also been stated that the application of inflation accounting, by adjusting and presenting items in financial statements with different purchasing powers according to their current purchasing power, increases the comparability of financial statements. In conclusion, it is considered important to effectively implement inflation accounting in order to maintain the comparability of financial reports in high-inflationary environments.

Keywords: Inflation accounting, financial reporting, financial statements, comparability, IAS 29, high inflation

STRATEJİK KARAR ALMA SÜREÇLERİNDE YAPAY ZEKÂ DESTEKLİ YÖNETİM MUHASEBESİ BİLGİLERİNİN ROLÜ

THE ROLE OF AI-SUPPORTED MANAGEMENT ACCOUNTING INFORMATION IN STRATEGIC DECISION-MAKING PROCESSES

Oğuzhan DANIŞ
Öğretim Görevlisi, Yozgat Bozok Üniversitesi, Sorgun Meslek Yüksekokulu, Muhasebe ve Vergi Bölümü, Yozgat, Türkiye.
ORCID:0000-0001-6548-9490

ÖZET

Günümüzde küreselleşme ve dijital dönüşümle birlikte artan rekabet koşulları, işletmelerin daha karmaşık ortamlarda faaliyet göstermelerine neden olmaktadır. Bu durum işletmelerinin sürdürülebilir başarı elde etmeleri için stratejik karar alma süreçlerinde doğru, zamanında ve güvenilir bilgiye duyulan ihtiyaçlarını artırmaktadır. İşletme yöneticilerin stratejik karar alma süreçlerinde ihtiyaç duydukları sayısal ve nitel verileri sunan yönetim muhasebesi, artan yüksek belirsizlik ortamında temel bilgi kaynağı olmaktadır. Son yıllarda yaşanan dijital dönüşüm ve beraberinde getirdiği yapay zeka teknolojilerinde yaşanan gelişmeler, yönetim muhasebesinin uygulama alanlarını genişleterek karar destek süreçlerindeki etkinliğini arttırmıştır.

Bu çalışmanın amacı, yapay zeka destekli yönetim muhasebesi sistemlerin stratejik karar alma süreçlerindeki rolünü kavramsal bir çerçevede incelemektedir. Çalışmada; büyük veri analizi, makine öğrenmesi, veri analitiği, doğal dil işleme gibi yapay zeka destekli sitemlerin; bütçeleme, performans değerlendirme, maliyet yönetimi, risk analizi ve stratejik planlama gibi yönetim muhasebesi fonksiyonlarına etkileri incelenmiştir. Literatür, yapay zeka destekli sistemlerin işletme tarafından üretilen büyük miktardaki verileri daha hızlı ve daha doğru şekilde işleyerek yöneticilerin karar alma süreçlerinin etkinliğine katkı sağladıklarını belirtmektedir. Ayrıca literatürde bu sistemlerin, işletmelerin içerisinde bulundukları belirsizliği azaltarak yöneticilerin daha isabetli karar almalarına yardımcı olacakları vurgulanmıştır. Bununla birlikte yapay zeka destekli yönetim muhasebesi sistemlerinin; veri güvenliği, algoritmik ön yargılar, etik sorunlar ve nitelikli insan kaynağı gibi bazı sınırlılıkları bulunduğu da belirtilmiştir. Sonuç olarak yapay zeka destekli yönetim muhasebesi sistemlerinin stratejik karar alma süreçlerinde aktif olarak kullanılması işletmelere önemli avantajlar sağlamaktadır. Yönetim muhasebesinde yapay zeka destekli sistemlerin etkin bir biçimde kullanılması, işletmelerin rekabet üstünlüğü kazanmalarında ve çevresel dinamiklere hızla uyum sağlamalarında önemli bir rol oynayacaktır.

Anahtar Kelimeler: Yönetim muhasebesi, yapay zekâ, stratejik karar alma, performans yönetimi, maliyet yönetimi.

ABSTRACT

Today, the increasing competitive conditions due to globalization and digital transformation are causing businesses to operate in more complex environments. This situation increases the need for accurate, timely, and reliable information in the strategic decision-making processes of businesses to achieve sustainable success. Management accounting, which provides the numerical and qualitative data that business managers need in their strategic decision-making processes, has become a fundamental source of information in an increasingly high-uncertainty environment. The digital transformation experienced in recent years and the developments in artificial intelligence technologies that accompany it have expanded the application areas of management accounting, increasing its effectiveness in decision support processes.

The aim of this study is to examine the role of AI-supported management accounting systems in strategic decision-making processes within a conceptual framework. In the study, the effects of AI-supported systems such as big data analysis, machine learning, data analytics, and natural language processing on management accounting functions like budgeting, performance evaluation, cost management, risk analysis, and strategic planning were examined. The literature states that AI-supported systems contribute to the effectiveness of managers' decision-making processes by processing large amounts of data produced by the business more quickly and accurately.

Additionally, the literature emphasizes that these systems will help managers make more accurate decisions by reducing the uncertainty faced by businesses. However, it has also been noted that AI-supported management accounting systems have certain limitations such as data security, algorithmic biases, ethical issues, and the need for qualified human resources. In conclusion, the active use of AI-supported management accounting systems in strategic decision-making processes provides significant advantages to businesses. The effective use of AI-supported systems in management accounting will play a significant role in businesses gaining a competitive advantage and quickly adapting to environmental dynamics.

Keywords: Management accounting, artificial intelligence, strategic decision-making, performance management, cost management.

HAKİKATİN SİMÜLASYONU: POST-TRUTH REJİMLERİNDE GERÇEKLİK, TEMSİL VE İNANÇ İLİŞKİLERİNİN YENİDEN DÜŞÜNÜLMESİ

SIMULATION OF TRUTH: RETHINKING THE RELATIONSHIPS OF REALITY, REPRESENTATION AND FAITH IN POST-TRUTH REGIMES

Asst. Prof. Dr. Ferhat Atik
Girne American University,Communication Faculty,Communication And Media Management
ORCID: 0009-0008-9089-9051

Özet
Bu makale, post-truth çağında hakikatin yerini simülasyonların alıp almadığını tartışmaktadır. Medya ve dijital platformlar aracılığıyla üretilen temsiller, gerçeklik ile kurulan ilişkiyi dönüştürmektedir. Çalışma, hakikatin artık nesnel bir kategori olmaktan çıkarak, inanç temelli ve algıya dayalı bir yapıya dönüştüğünü ileri sürer. Bu bağlamda simülasyon kavramı, yalnızca temsil değil, gerçekliğin yerini alan bir mekanizma olarak ele alınır. Makale, bireyin bilgiye değil, inandığı anlatıya bağlı olarak gerçeklik kurduğunu savunur. Sonuç olarak, post-truth rejimlerinde hakikatin yeniden üretildiği ve bu üretimin toplumsal sonuçlar doğurduğu ortaya konur.
Anahtar kelimeler: post-truth, simülasyon, hakikat, temsil, inanç, dijital medya

Abstract
This article explores whether truth has been replaced by simulations in the post-truth era. Representations produced through media reshape the relationship between reality and belief. The study argues that truth is no longer objective but constructed through perception and belief. Simulation is examined as a mechanism that replaces reality rather than representing it. The paper concludes that individuals construct reality based on narratives they trust, leading to new social consequences.
Keywords: post-truth, simulation, truth, representation, belief, digital media

BOTULINUM TOXIN AFTER HEMORRHOIDECTOMY

Assoc. Prof. Dr. Gullu Abdiyeva
Azerbaijan Medical University, Department of Surgical Diseases III, Baku, Azerbaijan
ORCID: 0000000338102531

Introduction

According to Davies J. (2003), postoperative pain is primarily caused by spasm of the internal anal sphincter that develops after hemorrhoidectomy. Severe postoperative pain is reported in 34–41% of patients following hemorrhoidectomy. Therefore, reducing postoperative pain intensity and shortening the duration of postoperative rehabilitation in patients with hemorrhoids represents a significant and socially relevant clinical challenge.

The aim of this study was to evaluate the role of botulinum toxin in reducing postoperative pain following Milligan–Morgan hemorrhoidectomy.

Materials and Methods

The study included 22 patients diagnosed with stage III–IV hemorrhoids treated during 2024–2025. All patients underwent hemorrhoidectomy using the Milligan–Morgan technique. Postoperatively, patients were assigned to receive either an injection of botulinum toxin into the internal anal sphincter or injections of 1.0 mg of 2% promedol for postoperative pain relief.
All patients were female, aged between 27 and 52 years. Injection of botulinum toxin into the internal anal sphincter resulted in elimination of sphincter spasm.

Results

Botox® was used for treatment at a dose of 100 units per patient, prepared as a suspension in 2 mL of 0.9% sodium chloride solution. To reduce postoperative pain, 20 units of botulinum toxin were injected into the internal anal sphincter in 11 patients of Group I following hemorrhoidectomy. In contrast, patients in Group II received injections of 1.0 mg of 2% promedol for pain control.
On the second postoperative day, patients in Group I who received botulinum toxin injections reported complete resolution of pain. The duration of wound healing and the severity of pain both at rest and during defecation were significantly reduced in Group I compared with Group II patients, who received promedol injections for four days.

Conclusion

The use of botulinum toxin injections into the internal anal sphincter following hemorrhoidectomy is an effective method for alleviating postoperative pain both at rest and during defecation, without associated complications.

Keywords: hemorrhoid, botulinum toxin, postoperative pain

KRİYOJENİK ORTAM HAVASI EVAPORATÖRLERİNDE KARLANMA ALTINDA ZAMANA BAĞLI ISI VE KÜTLE TRANSFER DAVRANIŞLARININ DENEYSEL İNCELENMESİ

EXPERIMENTAL INVESTIGATION OF TIME-DEPENDENT HEAT AND MASS TRANSFER BEHAVIOR UNDER FROSTING CONDITIONS IN CRYOGENIC AMBIENT AIR VAPORIZERS

Mustafa Majid Madlool AL_KHAZRAJI
Hitit Üniversitesi Mühendislik ve Doğa Bilimleri Fakültesi Makine Mühendisliği Bölümü, Çorum

İrfan KURTBAŞ
Hitit Üniversitesi Mühendislik ve Doğa Bilimleri Fakültesi Makine Mühendisliği Bölümü, Çorum

ÖZET

Kriyojenik ortam havası evaporatörleri (Ambient Air Vaporizers, AAV), sıvılaştırılmış gazların yeniden gazlaştırılması süreçlerinde yaygın olarak kullanılan pasif ısı değiştiriciler arasında yer almaktadır. Bu sistemlerde ısı transferi, ortam havası ile kriyojenik yüzey arasındaki yüksek sıcaklık farkı sayesinde gerçekleşmektedir. Ancak düşük yüzey sıcaklıkları nedeniyle havadaki nemin yoğuşarak donması sonucunda yüzeyde frosting tabakası oluşmakta ve bu tabaka zamanla sistem performansını önemli ölçüde etkilemektedir. Frosting tabakası, ilave ısıl direnç oluşturmasının yanı sıra hava geçiş kesitini daraltmakta, akış blokajına neden olmakta ve kanat performansını olumsuz yönde değiştirmektedir. Bu nedenle frosting oluşumu, AAV sistemlerinin tasarımı ve işletme performansı açısından belirleyici parametrelerden biri olarak kabul edilmektedir.

Literatürdeki mevcut çalışmalar incelendiğinde, AAV sistemlerinin büyük ölçüde doğal taşınım koşulları altında değerlendirildiği, zorlanmış taşınım koşullarını ele alan çalışmaların ise sınırlı kaldığı görülmektedir. Ayrıca mevcut zorlanmış taşınım çalışmalarında bağımsız değişkenlerin çoğunlukla hava hızı, bağıl nem veya hava sıcaklığı gibi sınırlı parametrelerle ele alındığı; çoklu işletme parametrelerinin eş zamanlı etkilerinin sistematik biçimde incelendiği çalışmaların yetersiz olduğu anlaşılmaktadır. Bunun yanında, frosting tabakasının zamana ve konuma bağlı gelişiminin yüksek zamansal ve mekânsal çözünürlükte takip edildiği çalışmaların sınırlı olduğu görülmektedir. Literatürde çoğunlukla toplam ısı transfer performansı ve genel ısı transfer katsayısına odaklanılmış, buna karşılık yerel ısı transfer karakteristikleri, kütle transfer davranışları ve frosting büyüme dinamiklerinin birlikte değerlendirildiği çalışmaların sınırlı kaldığı belirlenmiştir.

Bu çalışmada, zorlanmış taşınım koşulları altında çalışan kriyojenik ortam havası evaporatörlerinde frosting etkisi altında zamana bağlı ısı ve kütle transfer davranışları deneysel olarak incelenmiştir. Deneysel çalışmalarda hava Reynolds sayısı, bağıl nem, hava giriş sıcaklığı, kriyojenik akışkan debisi ve çalışma süresi bağımsız değişkenler olarak ele alınmıştır. Sistem performansının değerlendirilmesinde toplam ısı transfer miktarı, etkin ısı transfer katsayısı, hava tarafı Nusselt sayısı, Stanton sayısı, Sherwood sayısı, Lewis sayısı, kütle transfer katsayısı ve frosting büyüme hızı gibi temel parametreler birlikte analiz edilmiştir. Ayrıca frosting tabakasının zamana bağlı gelişimi yüksek zamansal çözünürlükte izlenmiş, yerel frosting kalınlığı dağılımları değerlendirilmiş ve bu değişimlerin ısı ve kütle transfer mekanizmaları üzerindeki etkileri ortaya konulmuştur.

Bu çalışmanın, frosting altında zorlanmış taşınımlı kriyojenik evaporatörlerde ısı ve kütle transfer süreçlerinin daha ayrıntılı anlaşılmasına katkı sunması ve tasarım parametrelerinin belirlenmesine yönelik literatürdeki mevcut belirsizliklerin giderilmesine destek olması beklenmektedir. Elde edilecek bulguların, AAV sistemlerinin daha verimli ve daha kararlı işletilmesine yönelik yeni tasarım yaklaşımlarının geliştirilmesine katkı sağlaması öngörülmektedir.

Anahtar kelimeler: Kriyojenik evaporatör, karlanma, ısı transferi

ABSTRACT

Department of Mechanical Engineering, Faculty of Engineering and Natural Sciences, Hitit University, Çorum, Türkiye

Cryogenic ambient air vaporizers (AAVs) are among the passive heat exchangers widely used in the regasification processes of liquefied gases. In these systems, heat transfer occurs due to the high temperature difference between the ambient air and the cryogenic surface.

However, because of the low surface temperatures, moisture in the air condenses and freezes, forming a frost layer on the surface, which significantly affects system performance over time. In addition to introducing extra thermal resistance, the frost layer narrows the airflow passage, causes flow blockage, and adversely changes fin performance. Therefore, frosting formation is considered one of the determining parameters in the design and operational performance of AAV systems.

When the existing studies in the literature are examined, it is seen that AAV systems have largely been evaluated under natural convection conditions, while studies dealing with forced convection conditions remain limited. In addition, in the available forced convection studies, the independent variables have mostly been limited to parameters such as air velocity, relative humidity, or air temperature; therefore, studies systematically examining the simultaneous effects of multiple operating parameters are insufficient. Moreover, studies monitoring the temporal and spatial development of the frost layer with high temporal and spatial resolution are also limited. The literature has mostly focused on overall heat transfer performance and the overall heat transfer coefficient, whereas studies evaluating local heat transfer characteristics, mass transfer behavior, and frost growth dynamics together remain limited.

In this study, the time-dependent heat and mass transfer behavior under frosting conditions in cryogenic ambient air vaporizers operating under forced convection conditions was experimentally investigated. In the experimental study, air Reynolds number, relative humidity, inlet air temperature, cryogenic fluid flow rate, and operating time were considered as independent variables. For the evaluation of system performance, fundamental parameters such as total heat transfer rate, effective heat transfer coefficient, air-side Nusselt number, Stanton number, Sherwood number, Lewis number, mass transfer coefficient, and frost growth rate were analyzed together. In addition, the time-dependent evolution of the frost layer was monitored with high temporal resolution, local frost thickness distributions were evaluated, and the effects of these variations on heat and mass transfer mechanisms were revealed.

It is expected that this study will contribute to a more detailed understanding of heat and mass transfer processes in forced convection cryogenic vaporizers under frosting conditions and support the reduction of the existing uncertainties in the literature regarding the determination of design parameters. The findings obtained are anticipated to contribute to the development of new design approaches for more efficient and stable operation of AAV systems.

Keywords: Cryogenic evaporator, frosting, heat transfer

ENERJİ YOKSULLUĞU VE CİNSİYET EŞİTSİZLİĞİNİN ANALİZİ

ANALYSIS OF ENERGY POVERTY AND GENDER INEQUALITY

Doğukan UZUNKAYA
Yüksek Lisans Öğrencisi, İstanbul Teknik Üniversitesi, Lisansüstü Eğitim Enstitüsü, Sürdürülebilirlik Anabilim Dalı, İstanbul, Türkiye.
ORCID: 0009-0003-4581-1245

Ebru ACUNER TÜRET
Doktor Öğretim Üyesi, İstanbul Teknik Üniversitesi, Enerji Enstitüsü, İstanbul, Türkiye
ORCID: 0000-0003-0877-6009

ÖZET

Bu çalışma, enerji yoksulluğunun kadınlar üzerindeki orantısız etkisini, Analitik Hiyerarşi Süreci (AHP) yöntemini uzman anket verileriyle bütünleştiren karma bir yaklaşımla incelemektedir. Araştırma, gelişmiş ve gelişmekte olan ekonomilerdeki enerji yoksulluğu profillerini bağlamsal olarak değerlendirmek amacıyla mevcut literatürden yararlanan karşılaştırmalı bir çerçeve benimsemektedir. Enerji yoksulluğu; enerji erişimi, karşılanabilirlik, kaynak kalitesi ve güvenilirlik boyutlarıyla tanımlanmakta olup toplumsal cinsiyet eşitsizliğiyle pek çok pekiştirici mekanizma aracılığıyla kesişmektedir. Kadınların yüksek domestik sorumlulukları, sınırlı ekonomik özerkliği, kısıtlı karar alma gücü ve sosyokültürel normlara maruziyeti, onları enerji yoksulluğuna karşı daha kırılgan kılmaktadır. Bu çalışma, söz konusu boyut ve mekanizmaları yapılandırılmış uzman değerlendirmesiyle sistematik biçimde önceliklendirmektedir. AHP çerçevesi; enerji yoksulluğu özellikleri, toplumsal cinsiyet eşitsizliği faktörleri, etki mekanizmaları ve müdahale alanları olmak üzere dört temel boyut etrafında şekillenmektedir. Karşılaştırmalı çerçeve gelişmiş ve gelişmekte olan ekonomilerdeki enerji yoksulluğu profillerini bağlamlandırmak için mevcut literatürden yararlanırken, ampirik bileşen akademisyenler ve özel sektör çalışanlarına yönelik yapılandırılmış bir uzman anketi kullanmaktadır. Anket, enerji yoksulluğunun kadınları orantısız biçimde etkileyen boyut ve mekanizmalarını sistematik olarak önceliklendirmek üzere tasarlanmış olup bulgularının bağlama duyarlı politika önerilerine katkı sağlaması beklenmektedir. Bu çalışma, SKH 5 (Toplumsal Cinsiyet Eşitliği) ve SKH 7 (Temiz ve Erişilebilir Enerji) kesişim literatürüne katkı sunmakta ve cinsiyete dayalı enerji yoksulluğu sonuçlarını belirleyen faktörlerin yapılandırılmış, niceliksel bir önceliklendirmesini ortaya koymaktadır.

Anahtar Kelimeler: enerji yoksulluğu, toplumsal cinsiyet eşitsizliği, AHP, karşılaştırmalı analiz, Türkiye, sürdürülebilir kalkınma

ABSTRACT

This study investigates the disproportionate impact of energy poverty on women compared to men, employing a mixed-method approach that integrates Analytic Hierarchy Process (AHP) with expert survey data. The research adopts a comparative framework that draws on existing literature to contextualize energy poverty profiles across developed and developing economies with distinct energy poverty profiles. Energy poverty — defined through dimensions of energy access, affordability, source quality, and reliability — intersects with gender inequality through multiple reinforcing mechanisms. Women's greater domestic responsibilities, limited economic autonomy, restricted decision-making power, and exposure to social and cultural norms compound their vulnerability to energy-related deprivation. This study systematically prioritizes these dimensions and mechanisms through structured expert elicitation. The AHP framework organizes the analysis across four main dimensions: energy poverty characteristics, gender inequality factors, impact mechanisms, and intervention areas. The comparative framework draws on existing literature to contextualize energy poverty profiles across developed and developing economies, while the empirical component employs a structured expert survey administered to academics and private sector professionals.

The survey is designed to systematically prioritize the dimensions and mechanisms through which energy poverty disproportionately affects women, with findings expected to inform context-sensitive policy recommendations.

The study contributes to the SDG 5 (Gender Equality) and SDG 7 (Affordable and Clean Energy) nexus literature by providing a structured, quantified prioritization of factors driving gender-differentiated energy poverty outcomes.

Keywords: energy poverty, gender inequality, AHP, comparative analysis, Turkey, sustainable development

DEMİRYOLU ARAÇ ŞASİLERİNDE KULLANILAN MANUEL VE ROBOTİK KAYNAK UYGULAMALARININ KARŞILAŞTIRILMASI

COMPARATIVE ANALYSIS OF MANUAL AND ROBOTIC WELDING APPLICATIONS IN RAILWAY VEHICLE CHASSIS MANUFACTURING

Öğr. Gör. Dr. Mustafa DURSUNLAR
Yozgat Bozok Üniversitesi, Sorgun Meslek Yüksekokulu, Ulaştırma Hizmetleri Bölümü, Yozgat, Türkiye.
ORCID:0000-0003-4278-2744

ÖZET

Demiryolu araçlarında kullanılan şasi ve boji yapıları, işletme süresince yüksek statik ve dinamik yükler altında çalışan, emniyet açısından kritik öneme sahip kaynaklı konstrüksiyonlardır. Bu yapıların güvenli ve uzun ömürlü olarak hizmet verebilmesi, kaynaklı birleştirmelerin kalitesine doğrudan bağlıdır. Kaynak dikişlerinde meydana gelebilecek geometrik düzensizlikler, yüzey kusurları ve üretimden kaynaklanan değişkenlikler, özellikle yorulma yükleri altında çalışan demiryolu araçlarında yapısal performansı olumsuz etkileyebilmektedir. Bu nedenle kaynaklı imalat süreçlerinin kontrol altında tutulması ve kaynak kalitesinin sürekliliğinin sağlanması demiryolu endüstrisinde önemli bir gereklilik olarak değerlendirilmektedir. Son yıllarda üretim kalitesinin artırılması, insan kaynaklı hataların azaltılması ve üretim süreçlerinin standardizasyonu amacıyla robotik kaynak sistemlerinin kullanımı giderek yaygınlaşmaktadır. Bu çalışmada, vagon şasisi üretiminde kullanılan manuel ve robotik gazaltı kaynak uygulamaları karşılaştırmalı olarak incelenmiştir. Çalışma kapsamında aynı koruyucu gaz karışımı ve aynı dolgu metali kullanılarak gerçekleştirilen kaynak uygulamalarına ait proses parametreleri değerlendirilmiştir. Ayrıca manuel ve robotik kaynak yöntemleri ile elde edilen kaynak dikişleri görsel muayene yöntemi kullanılarak incelenmiş olup, yüzey görünümü, dikiş sürekliliği, geometrik homojenlik, sıçrantı oluşumu ve üretim tekrarlanabilirliği gibi özellikler bakımından değerlendirilmiştir. Çalışma sonucunda, manuel ve robotik kaynak uygulamalarının kaynak dikişi karakteristikleri üzerindeki etkilerinin belirlenmesine yönelik bir değerlendirme yapılmış ve demiryolu araçları imalatında kullanılan kaynak yöntemlerinin kalite açısından karşılaştırılmasına yönelik genel bir yaklaşım ortaya konulmuştur. Bu çalışmayla demiryolu sektöründe kaynaklı imalat süreçlerinin geliştirilmesine, robotik kaynak teknolojilerinin kullanımının yaygınlaştırılmasına ve sürdürülebilir üretim hedefleri doğrultusunda kalite odaklı ve tekrarlanabilir imalat uygulamalarının desteklenmesine katkı sağlanması amaçlanmıştır.

Anahtar Kelimeler: Raylı sistemler, lokomotif, vagon, boji, kaynak, robotik kaynak.

ABSTRACT

Railway vehicle chassis and bogie structures are welded constructions of critical importance in terms of safety, operating under high static and dynamic loads throughout their service life. The ability of these structures to provide safe and long-lasting service is directly dependent on the quality of welded joints. Geometrical irregularities, surface defects, and production-induced variations that may occur in weld seams can adversely affect the structural performance of railway vehicles, particularly those operating under fatigue loading conditions. Therefore, maintaining control over welded manufacturing processes and ensuring the continuity of weld quality are considered important requirements in the railway industry. In recent years, the use of robotic welding systems has become increasingly widespread in order to improve production quality, reduce human-induced errors, and standardize manufacturing processes. In this study, manual and robotic gas-shielded welding applications used in wagon chassis manufacturing were comparatively investigated. Within the scope of the study, the process parameters of welding applications performed using the same shielding gas mixture and the same filler metal were evaluated. In addition, the weld seams obtained by manual and robotic welding methods were examined using visual inspection and evaluated in terms of surface appearance, weld continuity, geometrical homogeneity, spatter formation, and production repeatability. As a result of the study, an assessment was carried out to determine the effects of manual and robotic welding applications on weld seam characteristics, and a general approach was presented for the quality-based comparison of welding methods used in railway vehicle manufacturing.

Through this study, it is aimed to contribute to the improvement of welded manufacturing processes in the railway sector, the wider adoption of robotic welding technologies, and the promotion of quality-oriented and repeatable manufacturing practices in line with sustainable production objectives.

Keywords: Railway systems, locomotive, wagon, bogie, welding, robotic welding.

ASİMETRİK TABAKALAR ARASI HİBRİT ÇİFT KAVİSLİ KOMPOZİT YAPILARIN YARI-STATİK MEKANİK DAVRANIŞININ İNCELENMESİ

INVESTIGATION OF THE QUASI-STATIC MECHANICAL BEHAVIOR OF ASYMMETRIC INTER-PLY HYBRID DOUBLE-CURVED COMPOSITE STRUCTURES

İlhan ÇAKIL
Lisans Öğrencisi, Balıkesir Üniversitesi, Mühendislik Fakültesi, Makine Bölümü, Balıkesir, Türkiye.
ORCID:0009-0005-7862-5849

Mehmet ÖZER
Dr. Öğr. Üyesi, Balıkesir Üniversitesi, Mühendislik Fakültesi, Makine Bölümü, Balıkesir, Türkiye.
ORCID:0000-0002-6212-1217

Fatih BALIKOĞLU
Doç. Dr. Balıkesir Üniversitesi, Mühendislik Fakültesi, Makine Bölümü, Balıkesir, Türkiye.
ORCID:0000-0003-3836-5569

ÖZET
Fiber takviyeli kompozit yapılar; yüksek özgül dayanım, rijitlik, düşük yoğunluk ve enerji absorbsiyon kabiliyetleri sayesinde havacılık, savunma, otomotiv ve denizcilik gibi birçok mühendislik uygulamasında yaygın olarak kullanılmaktadır. Özellikle karbon fiber ve Kevlar fiber takviyeli kompozit yapılar, hafiflik ile yüksek mekanik performansı bir arada sunmaları nedeniyle son yıllarda dikkat çekmektedir. Bu çalışmada düz dokuma karbon/epoksi, dimi dokuma karbon/epoksi ve Kevlar/epoksi esaslı monolitik ve hibrit çift kavisli kompozit yapıların farklı katman dizilimleri, yükleme hızları ve uç geometrileri altındaki yarı-statik batma davranışları deneysel olarak incelenmiştir. Numuneler epoksi reçine matrisi kullanılarak çift kavisli formda üretilmiş ve ASTM D6264/D6264M standardına uygun olarak test edilmiştir. Deneylerde yarı küresel ve konik uç geometrileri kullanılmış olup 1.25 mm/dk ve 100 mm/dk yükleme hızlarında yarı-statik batma testleri gerçekleştirilmiştir. Elde edilen sonuçlar değerlendirildiğinde Kevlar takviyeli yapıların daha yüksek enerji absorbsiyon kapasitesi ve daha sünek deformasyon davranışı sergilediği belirlenmiştir. Dimi dokuma karbon takviyeli yapıların ise düz dokuma karbon yapılara göre daha stabil kuvvet davranışı ve daha yüksek taşıma kapasitesi gösterdiği gözlemlenmiştir. Hibrit kompozit yapılarda katman diziliminin mekanik performansı doğrudan etkilediği, özellikle karbon fiberin dış yüzeyde bulunduğu dizilimlerde maksimum kuvvet değerlerinin arttığı tespit edilmiştir. Ayrıca konik uç kullanılan testlerde temas alanının azalmasına bağlı olarak gerilme yoğunlaşmalarının arttığı ve hasarın daha lokal bölgelerde oluştuğu değerlendirilmiştir. Yükleme hızının artmasıyla birlikte kompozit yapıların daha rijit davranış sergilediği ve maksimum kuvvet değerlerinde artış meydana geldiği görülmüştür. Sonuç olarak elyaf cinsi, dokuma tipi, katman dizilimi, uç geometrisi ve yükleme hızının çift kavisli kompozit yapıların yarı-statik batma davranışı üzerinde önemli etkiye sahip olduğu ortaya konulmuştur.
Anahtar Kelimeler: yarı-statik batma, mekanik davranış, uç geometrisi, katman dizilimi, hibrit kompozit

ABSTRACT
Fiber-reinforced composite structures are widely used in many engineering applications such as aerospace, defense, automotive, and marine due to their high specific strength, rigidity, low density, and energy absorption capabilities. Carbon fiber and Kevlar fiber-reinforced composite structures, in particular, have attracted attention in recent years because they offer a combination of lightness and high mechanical performance. In this study, the quasi-static indentation behavior of monolithic and hybrid double-curved composite structures based on düz carbon/epoxy, dimi carbon/epoxy, and Kevlar/epoxy with different layups, loading rates, and indenter geometries was experimentally investigated. Samples were produced in a double-curved form using an epoxy resin matrix and tested according to the ASTM D6264/D6264M standard. Hemispherical and conical indenter geometries were used in the experiments, and quasi-static indentation tests were performed at loading rates of 1.25 mm/min and 100 mm/min.

The results indicated that Kevlar-reinforced samples exhibited higher energy absorption capacity and more ductile deformation behavior. Dimi carbon-reinforced samples on the other hand, were observed to show more stable force behavior and higher load-carrying capacity compared to düz woven carbon counterparts. It was determined that the layup configuration directly affects the mechanical performance in asymmetric hybrid composite structures, and that the maximum force values increase, especially in layup where the carbon fiber is on the outer surface. In addition, it was evaluated that stress concentrations increased and damage occurred in more localized regions due to the decrease in the contact area in tests using a conical indenter. It was observed that composite structures exhibited more rigid behavior and that the maximum force values increased with increasing loading rate. In conclusion, it was shown that fiber type, weave type, layup arrangement, indenter geometry, and loading rate have a significant effect on the quasi-static indentation behavior of double-curved composite structures.
Keywords: quasi-static indentation, mechanical behavior, indenter geometry, stacking sequence, hybrid composites.

EĞİTİM 4.0 MODELİNİN LİSANS DÜZEYİNDE UYGULAMA OLANAKLARI

OPPORTUNITIES FOR IMPLEMENTING EDUCATION 4.0 MODEL AT THE UNDERGRADUATE LEVEL

Fidan Askerova
Azerbaycan Cumhuriyeti Eğitim Enstitüsü doktora öğrencisi,Azerbaycan Diller Üniversitesi, Eğitim Fakültesi, Psikoloji ve Pedagoji Bölümü, Bakü, Azerbaycan.
ORCID: 0009-0004-4587-6302

ÖZET

Modern bilgi toplumunda dijital teknolojilerin hızlı gelişimi, işgücü piyasasının değişen talepleri ve yenilikçi düşünme ihtiyacı, yükseköğretim kurumlarında yeni öğretim yaklaşımlarının oluşturulmasını zorunlu kılmıştır. Bu bağlamda, Eğitim 4.0 modeli, geleneksel eğitim sisteminden farklı olarak, öğrenci odaklı, esnek, yenilikçi ve teknoloji tabanlı bir eğitim ortamının oluşturulmasını öngörmektedir. Makale, dijitalleşme, kişiselleştirilmiş eğitim, yapay zeka teknolojilerinin uygulanması, sanal ve etkileşimli öğrenme ortamları, proje tabanlı ve problem tabanlı öğrenme yaklaşımları ve işgücü piyasasıyla entegrasyon da dahil olmak üzere Eğitim 4.0 modelinin temel özelliklerini incelemektedir. Aynı zamanda, bu modelin lisans eğitiminde öğrencilerin yaratıcı düşünme, eleştirel analiz, işbirliği ve dijital yetkinliklerinin geliştirilmesindeki önemi de vurgulanmaktadır. Çalışma, yükseköğretim kurumlarında dijital platformların kullanımının genişletilmesi, esnek müfredatların geliştirilmesi, bireysel öğrenme yörüngelerinin düzenlenmesi ve öğretmenin işlevsel rolünün dönüştürülmesi konularını analiz etmektedir. Makale ayrıca, Eğitim 4.0 modelinin uygulanması sürecinde karşılaşılan başlıca sorunları da incelemektedir: teknolojik altyapının yetersizliği, dijital becerilerin eşit olmayan düzeyi, öğretmenlerin yeni öğretim yöntemlerine uyum sağlama zorlukları ve eğitim kaynaklarına erişimle ilgili sorunlar. Araştırma sonuçları, Eğitim 4.0 modelinin lisans düzeyinde amaçlı ve sistematik bir şekilde uygulanmasının, yükseköğretimin kalitesinin iyileştirilmesine, öğrencilerin pratik becerilerinin geliştirilmesine ve modern iş piyasasının gereksinimlerine uygun yetkinlikler kazanmalarına önemli ölçüde katkıda bulunabileceğini göstermektedir. Makalede ortaya konan teorik yaklaşımlar ve pratik öneriler, yükseköğretim kurumlarında yenilikçi bir eğitim ortamının oluşturulması açısından önem taşımaktadır

Anahtar kelimeler: Eğitim 4.0, yükseköğretim, lisans düzeyi, dijital teknolojiler, yenilikçi öğrenme, yapay zeka

ABSTRACT

The rapid development of digital technologies in the modern information society, the changing demands of the labor market and the need for innovative thinking have necessitated the formation of new teaching approaches in higher education institutions. In this regard, the Education 4.0 model, unlike the traditional training system, envisages the creation of a student-oriented, flexible, innovative and technology-based educational environment. The article examines the main features of the Education 4.0 model, including digitalization, personalized education, the application of artificial intelligence technologies, virtual and interactive learning environments, project-based and problem-based learning approaches, as well as integration with the labor market. At the same time, the importance of this model in developing students' creative thinking, critical analysis, collaboration and digital competencies in undergraduate education is substantiated.

The study analyzes the issues of expanding the use of digital platforms in higher education institutions, developing flexible curricula, organizing individual learning trajectories and transforming the functional role of the teacher. The article also examines the main problems encountered in the process of implementing the Education 4.0 model - the inadequacy of technological infrastructure, the uneven level of digital skills, the difficulties of teachers in adapting to new teaching methods, and issues related to access to educational resources. The research results show that the purposeful and systematic implementation of the Education 4.0 model at the undergraduate level can significantly contribute to improving the quality of higher education, developing students' practical skills, and helping them acquire competencies in line with the requirements of the modern labor market.

The theoretical approaches and practical proposals put forward in the article are considered important in terms of forming an innovative educational environment in higher education institutions.
Keywords: Education 4.0, higher education, undergraduate education, digital technologies, innovative learning, artificial intelligence

REPOSITIONING ACADEMIC LIBRARIES IN THE DIGITAL AGE: FACTORS INFLUENCING LOW LIBRARY PATRONAGE AMONG STUDENTS IN NIGERIAN TERTIARY INSTITUTIONS

Bola Christie Atulomah, PhD
Federal Polytechnic Ilaro, now Federal University of Technology Ilaro Ogun State, Nigeria.
ORCID:0000-0002-5888-4852

Orjime Ann Ngunan
Federal Polytechnic Ilaro, now Federal University of Technology Ilaro Ogun State, Nigeria.
ORCID: 0009-0008-6482-1576

ABSTRACT
Academic libraries remain central to teaching, learning, research, and knowledge dissemination in higher education institutions. Despite their importance, many tertiary institutions have experienced a steady decline in students' use of library resources and services. The emergence of digital technologies, social media platforms, and alternative information sources has significantly altered students' information-seeking behaviour. This study investigated the factors responsible for low library patronage among students in Nigerian tertiary institutions. Specifically, the study examined the extent of library patronage, the influence of social media, peer pressure, library environment, staff attitude, and students' perceptions of library services. A descriptive survey research design was adopted for the study. The population comprised undergraduate students in selected tertiary institutions. Data were collected using a structured questionnaire titled Factors Affecting Library Patronage Questionnaire (FALPQ). Descriptive statistics such as frequency counts, percentages, mean scores, and standard deviations were used to analyze the data, while Pearson Product Moment Correlation and Chi-square statistics were employed to test the hypotheses at the 0.05 level of significance. Findings revealed that social media addiction, preference for online information resources, poor reading culture, outdated library materials, inadequate technological facilities, and unfriendly library environments significantly contribute to low library patronage. The study concludes that academic libraries must embrace innovation, improve user-centered services, and integrate digital technologies to remain relevant in the information age. The study recommends increased funding, modernization of library services, improved staff-user relationships, and enhanced information literacy programmes.
Keywords: Library patronage, academic libraries, social media, digital age, library utilization.

FOLKLORE THEORIES OF EPIC MEMORY: IN THE CONTEXT OF TURKIC AND EUROPEAN EPICS

EPİK HAFIZANIN MODERN FOLKLOR KURAMLARI: TÜRK VE AVRUPA BAĞLAMINDA

Gafarlı (Qafarov) Ramazan
AMEA Folklor İnstitutu, "Dede Korkut" bölümünün başkanı Baku, Azerbaycan
ORCİD: 0009-0007-6422-042

ÖZET
Bu bildiri, Türk epik geleneğinin (Oğuz Kağan, Dede Korkut, Manas, Köroğlu) yapı ve motiflerini Avrupa destanları (İlyada, Eneida, Nibelungenlied, Beowulf vb.) ile karşılaştırmak için kuramsal bir çerçeve sunmaktadır. Modern folklor kuramları temelinde epik hafızanın tipolojik paralellikleri, mitolojik arketipleri ve kültürel kodları incelenmektedir. Çalışma, hem kuramsal-metodolojik bir giriş hem de karşılaştırmalı analiz üzerinden epik mirasın çağdaş yorumlarını ortaya koymaktadır.
Anahtar kelmeler: Epik hafıza, Türk destanı, Avrupa destanları, Modern folklor kuramları, Tipolojik karşılaştırma, Mitolojik arketipler, Kahraman kültü, Su motifi, Kültürel kodlar, Kolektif hafıza

ABSTRACT
This paper presents a theoretical framework for comparing the structures and motifs of Turkic epic traditions (Oghuz Khagan, Book of Dede Qorqud, Manas, Koroghlu) with European epics (Iliad, Aeneid, Nibelungenlied, Beowulf, etc.). Based on modern folklore theories, it explores typological parallels, mythological archetypes, and cultural codes of epic memory. The study combines a theoretical-methodological introduction with comparative analysis to highlight contemporary interpretations of epic heritage.
Keywords: Epic memory, Turkic epics, European epics, Modern folklore theories, Typological comparison, Mythological archetypes, Hero cult, Water motif, Cultural codes, Collective memory

CLIMATE POLICY UNCERTAINTY, GREEN BONDS, AND STOCK MARKET RESILIENCE: EVIDENCE FROM EUROPEAN LISTED ENERGY AND UTILITY FIRMS

İKLİM POLİTİKASINDAKİ BELİRSİZLİK, YEŞİL TAHVİLLER VE BORSA DAYANIKLILIĞI: AVRUPA'DA BORSAYA KOTE EDİLMİŞ ENERJİ VE KAMU HİZMETİ ŞİRKETLERİNDEN ELDE EDİLEN BULGULAR

Öğretim görevlisi, Ayten Nahide KORKMAZ
İstanbul Aydın Üniversitesi, ABMYO, Dış Ticaret(İngilizce),İstanbul, Türkiye.
ORCID:0000-0001-9932-7983

Doç. Dr. Mustafa ÖZYEŞİL
Haliç Üniversitesi, İşletme Fakültesi, İşletme Bölümü(İngilizce), İstanbul, Tükiye.
ORCID:0000-0002-4442-7087

ÖZET
İklimle ilgili finansal riskler, özellikle düzenleyici belirsizlik, karbon fiyatlandırma mekanizmaları ve geçiş odaklı politika müdahalelerinin yatırımcı beklentilerini yeniden şekillendirmesi nedeniyle, enerji yoğun sektörlerde faaliyet gösteren şirketler için giderek daha önemli hale gelmiştir. Yeşil tahviller, düşük karbonlu dönüşümü finanse etmek için önemli bir araç olarak yaygın bir şekilde tanıtılsa da, yeşil tahvil ihraç eden veya aktif olarak kullanan şirketlerin, iklim politikası belirsizliğinin arttığı dönemlerde borsa karşısında daha güçlü bir direnç sergileyip sergilemedikleri hâlâ belirsizdir. Bu çalışma, Avrupa'da borsaya kote edilmiş enerji ve kamu hizmetleri şirketlerine odaklanarak iklim politikası belirsizliği, yeşil tahvil maruziyeti ve borsa dayanıklılığı arasındaki ilişkiyi incelemeyi amaçlamaktadır. Avrupa bağlamı, borsaya kote edilmiş şirketlerin iddialı iklim düzenlemelerine, genişleyen sürdürülebilir finans çerçevelerine, karbon piyasası dinamiklerine ve geçiş riskine ilişkin artan yatırımcı incelemesine maruz kalması nedeniyle özellikle ilgili bir ampirik ortam sunmaktadır. Borsa verileri, yeşil tahvil ihraç bilgileri, finansal tablo göstergeleri, ESG ile ilgili değişkenler, karbon fiyatı göstergeleri ve iklim politikası belirsizliği ölçütleri birleştirilerek şirket düzeyinde bir panel veri seti oluşturulacaktır. Borsa dayanıklılığı, anormal getiriler, aşağı yönlü risk, getiri oynaklığı, risk değeri ve iklim politikasıyla ilgili şokların ardından toparlanma hızı aracılığıyla ölçülecektir. Yeşil tahvil maruziyeti, yeşil tahvil ihracı, yeşil tahvil yoğunluğu veya toplam finansman içindeki yeşil finansmanın payı ile temsil edilecektir. İklim politikası belirsizliği, mevcut iklim politikası belirsizlik endeksleri aracılığıyla ölçülecek ve karbon piyasası ile düzenleyici belirsizlik göstergeleriyle desteklenecektir. Metodolojik olarak, sabit etkiler panel regresyonu, etkileşim terimi modellemesi, olay çalışması analizi ve alternatif dayanıklılık ölçütlerine dayalı sağlamlık kontrolleri kullanılacaktır. Çalışmanın, yeşil tahvil maruziyetinin iklim politikası belirsizliği altında yalnızca bir finansman aracı olarak mı yoksa aynı zamanda piyasa temelli bir dayanıklılık mekanizması olarak mı işlev gördüğünü göstererek, sürdürülebilir finans ve finansal risk literatürüne katkı sağlaması beklenmektedir. Bulgular, sürdürülebilir borçlanma araçlarının enerji yoğun firmaların iklim geçişi belirsizliği sırasında finansal istikrarını korumasına yardımcı olup olmadığını göstererek yatırımcılar, şirket yöneticileri, politika yapıcılar ve düzenleyiciler için çıkarımlar sağlayabilir.
Anahtar Kelimeler: İklim politikasındaki belirsizlik; yeşil tahviller; borsa direnci; sürdürülebilir finans; Avrupalı enerji şirketleri.

ABSTRACT
Climate-related financial risks have become increasingly material for firms operating in energy-intensive sectors, particularly as regulatory uncertainty, carbon-pricing mechanisms, and transition-oriented policy interventions reshape investor expectations. While green bonds have been widely promoted as an important instrument for financing low-carbon transformation, it remains unclear whether firms issuing or actively using green bonds exhibit stronger stock market resilience during periods of heightened climate policy uncertainty. This study aims to examine the relationship between climate policy uncertainty, green bond exposure, and stock market resilience by focusing on European listed energy and utility firms. The European context provides a particularly relevant empirical setting because listed firms are exposed to ambitious climate regulations, expanding sustainable finance

frameworks, carbon market dynamics, and increasing investor scrutiny regarding transition risk. A firm-level panel dataset will be constructed by combining stock market data, green bond issuance information, financial statement indicators, ESG-related variables, carbon price indicators, and climate policy uncertainty measures. Stock market resilience will be measured through abnormal returns, downside risk, return volatility, value-at-risk, and recovery speed after climate-policy-related shocks. Green bond exposure will be proxied by green bond issuance, green bond intensity, or the share of green financing in total financing. Climate policy uncertainty will be measured through available climate policy uncertainty indices and supported by carbon market and regulatory uncertainty indicators. Methodologically, fixed-effects panel regression, interaction-term modelling, event-study analysis, and robustness checks based on alternative resilience measures will be employed. The study is expected to contribute to sustainable finance and financial risk literature by showing whether green bond exposure functions only as a financing instrument or also as a market-based resilience mechanism under climate policy uncertainty. The findings may provide implications for investors, corporate managers, policymakers, and regulators by demonstrating whether sustainable debt instruments help energy-intensive firms maintain financial stability during climate-transition uncertainty.
Keywords: Climate policy uncertainty; green bonds; stock market resilience; sustainable finance; European energy firms

A GREEN APPROACH TO CIRCULAR BIOECONOMY, CLIMATE CHANGE, AND ENVIRONMENT

DÖNGÜSEL BİYOEKONOMİ, İKLİM DEĞİŞİKLİĞİ VE ÇEVRE KONUSUNDA ÇEVRECİ BİR YAKLAŞIM

Ayten Nahide KORKMAZ
Yıldız Technical University, Faculty of Economics and Administrative Sciences, Türkiye

Hasan Agan KARADUMAN
Yıldız Technical University, Faculty of Economics and Administrative Sciences, Türkiye

ÖZET

Döngüsel biyoekonomi gibi döngüsel ekonomi kavramlarının amacı, mevcut, temelde doğrusal olan ekonomik yapıyı daha sürdürülebilir bir yapı ile değiştirmektir. Ancak, döngüsel ekonomi kavramı günümüzde işletmeler ve akademisyenler tarafından farklı şekillerde tanımlanmaktadır; bu durum tutarsızlıklara yol açmakta ve bu çerçevenin başarılı bir şekilde uygulanmasını zorlaştırmaktadır. 2030 yılına kadar karbon emisyonlarını %45 oranında azaltmak ve 2050 yılına kadar karbon nötrlüğüne ulaşmak için, tüm sektörlerde döngüsel ekonomiyi uygulamaya yönelik girişimlere ihtiyaç vardır. Küresel sanayileşme ve yenilenemeyen enerji kaynaklarına sürdürülemez bir şekilde bağımlılık, katı atıkların artmasına ve iklim değişikliğine katkıda bulunmuştur. Atık yönetimi, iklim değişikliği, enerji, hava ve su kalitesi, arazi kullanımı, sanayi, gıda üretimi, yaşam döngüsü değerlendirmesi ve maliyet etkin yollara vurgu yaparak, burada döngüsel ekonomi fikirlerini inceliyoruz. Arazi kullanımı ve arazi örtüsü açısından, biyo-bazlı malzemelerin kullanımının yaygınlaştırılmasının bir sorun teşkil ettiğini tespit ettik. Bu amaçla, döngüsel biyoekonomi, iklim değişikliğinin etkileri, çevresel koşullar ve kırsal kalkınmaya ilişkin ilgili göstergelerden oluşan, 2015–2025 dönemini kapsayan bir ülkeler arası veri seti oluşturulacaktır. Bu çalışmada, döngüsel biyoekonomi ile ilgili dönüşümün, farklı ülkelerde ve zaman içinde iklim değişikliği sonuçlarını ne ölçüde etkilediğini belirlemek amacıyla panel veri tahmin teknikleri kullanılacaktır. Çalışmanın, betimleyici tartışmaların ötesine geçerek sürdürülebilirlik, iklim değişikliği, döngüsel biyoekonomi ve biyoekonomik dönüşümün kesişim noktası hakkında ampirik kanıtlar sunmasıyla literatüre katkı sağlaması beklenmektedir. Çalışma, biyoekonomi, sürdürülebilir kalkınma ve iklim değişikliği alanlarında çalışan araştırmacılara ve politika yapıcılarına daha güçlü bir analitik temel sunmayı amaçlamaktadır.

Anahtar kelimeler: döngüsel biyoekonomi, yeşil ekonomi, çevre, iklim değişikliği.

ABSTRACT

The goal of circular economy concepts, such as a circular bioeconomy, is to replace the current, basically linear economic structure with a more sustainable one. However, the circular economy concept is now defined variably by businesses and scholars, which leads to discrepancies and makes it challenging to apply the framework successfully. In order to reduce carbon emissions by 45% by 2030 and reach carbon neutrality by 2050, initiatives to implement a circular economy in all sectors are needed. Global industrialization and an unsustainable reliance on nonrenewable energy sources have contributed to an increase in solid waste and climate change. With an emphasis on waste management, climate change, energy, air and water quality, land use, industry, food production, life cycle evaluation, and cost-effective pathways, we examine circular economy ideas here. In terms of land use and land cover, we found that expanding the use of bio-based materials presents a problem. For this purpose, a cross-country dataset covering the period 2015–2025 will be constructed from relevant indicators of circular bioeconomy, climate change effects, environmental conditions, and rural development. In this study, panel data estimation techniques will be used to identify the extent to which circular bioeconomy-related transformation influences climate change outcomes across countries and over time. It is expected that the study will contribute to the literature by moving beyond descriptive discussions and providing empirical evidence on the intersection of sustainability, climate change, circular bioeconomy, and bioeconomic transformation.

The study is intended to offer a stronger analytical basis for researchers and policymakers working in the fields of bioeconomy, sustainable development, and tclimate change.

Keywords: circular bioeconomy, green economy, environment, climate change.

YEREL HASAN DEDE VE TICARI PATLICAN ÇEŞITLERINDE FARKLI İNOKULASYON YÖNTEMLERININ *FUSARIUM OXYSPORUM* F. SP. *MELONGENAE* KAYNAKLI HASTALIK GELIŞIMI VE MORFOLOJIK PARAMETRELER ÜZERINE ETKILERININ KARŞILAŞTIRILMASI

COMPARISON OF THE EFFECTS OF DIFFERENT INOCULATION METHODS ON FUSARIUM OXYSPORUM F. SP. MELONGENAE-INDUCED DISEASE DEVELOPMENT AND MORPHOLOGICAL PARAMETERS IN LOCAL HASAN DEDE AND COMMERCIAL EGGPLANT CULTIVARS

Ahmet KÖSE
Student, Kırıkkale University, Delice Vocational School, Department of Plant and Animal Production, Kırıkkale, Türkiye.

Deniz ÖZGÜR
Student, Kırıkkale University, Kırıkkale Vocational School, Department of Plant and Animal Production, Kırıkkale, Türkiye.
ORCID ID: 0009-0005-3167-3536

Lecturer Dr. Berfin KILINÇ
Kırıkkale University, Delice Vocational School, Department of Plant and Animal Production, Kırıkkale, Türkiye.
ORCID ID: 0000-0002-7086-0255

ÖZET
Fusarium oxysporum f. sp. *melongenae* (Fom), patlıcan yetiştiriciliğinde önemli verim kayıplarına neden olan toprak kökenli fungal patojenlerden biridir. Bu çalışmada, Kırıkkale yöresine ait yerel "Hasan Dede" patlıcan çeşidi ile ticari bir patlıcan çeşidinin Fom'a karşı farklı inokulasyon yöntemleri altındaki morfolojik gelişimleri ve hastalık tepkileri karşılaştırılmıştır. Deneme üç tekerrürlü olarak yürütülmüş ve bitkiler altı hafta boyunca izlenmiştir. Araştırmada kontrol, yaprak sprey, kök boğazı ve kök daldırma olmak üzere dört farklı inokulasyon yöntemi uygulanmıştır. Deneme sonunda bitki boyu, gövde ve kök yaş ile kuru ağırlıkları belirlenmiş; hastalık şiddeti ise 0–5 hastalık skalasına göre Simptom İndeksi (SI) kullanılarak değerlendirilmiştir. Elde edilen veriler Tukey HSD çoklu karşılaştırma testi (p<0.05) ile analiz edilmiştir. İnokulasyon yöntemleri, her iki çeşitte de bitki gelişimi ve hastalık şiddeti üzerinde istatistiksel olarak anlamlı farklılıklar oluşturmuştur. Yerel "Hasan Dede" çeşidinde en yüksek hastalık şiddeti yaprak sprey uygulamasında (%86.7 SI) belirlenirken, kök daldırma uygulaması bitki gelişimini en fazla baskılayan yöntem olmuş ve gövde boyu ile biyokütlede belirgin azalmaya neden olmuştur. Ticari çeşit ise tüm inokulasyon yöntemlerinde daha düşük hastalık şiddeti (%40.0–73.3 SI) ve daha sınırlı morfolojik değişimler göstererek yerel çeşide göre daha yüksek tolerans sergilemiştir. Kök boğazı inokulasyonu her iki çeşitte de en düşük hastalık şiddetinin gözlendiği yöntem olarak belirlenmiştir. Sonuç olarak, inokulasyon yöntemlerinin hastalık gelişimi ve bitki büyümesi üzerine etkilerinin uygulama şekline bağlı olarak değiştiği belirlenmiştir. Yaprak sprey yöntemi hastalık şiddetinin değerlendirilmesinde, kök daldırma yöntemi ise enfeksiyonun bitki gelişimi üzerindeki etkilerinin ortaya konulmasında daha belirgin sonuçlar vermiştir. Elde edilen bulguların, patlıcanda dayanıklılık değerlendirmeleri ve ıslah programlarında uygun inokulasyon yönteminin belirlenmesine katkı sağlayacağı düşünülmektedir.
Anahtar Kelimeler: Hasan Dede patlıcanı, yerel patlıcan, *Fusarium oxysporum* f. sp. *melongenae*, inokulasyon yöntemi, Simptom İndeksi, biyokütle.

ABSTRACT
Fusarium oxysporum f. sp. *melongenae* (Fom) is one of the most important soil-borne fungal pathogens causing significant yield losses in eggplant production. This study compared the morphological development and disease responses of the local "Hasan Dede" eggplant cultivar, grown in the Kırıkkale region, and a commercial eggplant cultivar under different inoculation methods against Fom. The experiment was conducted with three replicates, and the plants were monitored for six weeks.

Four inoculation methods, including control, foliar spray, stem-base inoculation, and root-dip inoculation, were evaluated. At the end of the experiment, plant height, shoot and root fresh and dry weights were determined, while disease severity was assessed using the Symptom Index (SI) based on a 0–5 disease rating scale. The obtained data were analyzed using Tukey's Honestly Significant Difference (HSD) multiple comparison test ($p<0.05$). The inoculation methods caused statistically significant differences in plant growth and disease severity in both cultivars. The local "Hasan Dede" cultivar exhibited the highest disease severity following foliar spray inoculation (86.7% SI), whereas root-dip inoculation caused the greatest reductions in plant growth and biomass. In contrast, the commercial cultivar showed lower disease severity (40.0–73.3% SI) and less pronounced morphological changes across all inoculation methods, indicating greater tolerance than the local cultivar. Stem-base inoculation resulted in the lowest disease severity in both cultivars. In conclusion, the effects of inoculation methods on disease development and plant growth varied depending on the inoculation technique. Foliar spray inoculation was the most effective method for assessing disease severity, whereas root-dip inoculation more clearly revealed the effects of infection on plant growth. These findings are expected to contribute to the selection of appropriate inoculation methods for resistance evaluation and eggplant breeding programs.

Keywords: Hasan Dede eggplant, local eggplant cultivar, *Fusarium oxysporum* f. sp. *melongenae*, inoculation method, Symptom Index, biomass.

ARAÇ İÇİ SİLAH VE BIÇAK TESPİTİ İÇİN YOLOV8, YOLO11 VE FASTER R-CNN MİMARİLERİNİN KARŞILAŞTIRMALI DEĞERLENDİRMESİ

A COMPARATIVE EVALUATION OF YOLOV8, YOLO11 AND FASTER R-CNN ARCHITECTURES FOR IN-VEHICLE FIREARM AND KNIFE DETECTION

Muhammet Talha ERİKEL
Bursa Teknik Üniversitesi, Lisansüstü Eğitim Enstitüsü, Akıllı Sistemler Mühendisliği, Bursa, Türkiye
Çalışma Alanı: Yapay Zekâ, Bilgisayarla Görme, Nesne Tespiti, Araç İçi Güvenlik
ORCID: 0009-0000-3927-9086

Dr. Öğr. Üyesi İsmail Enes PARLAK
Bursa Teknik Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Endüstri Mühendisliği, Bursa, Türkiye
Çalışma Alanı: Endüstri Mühendisliği, Veri Bilimi, Makine Öğrenmesi, Derin Öğrenme
ORCID: 0000-0002-0694-9220

ÖZET

Bağlantılı ve otonom araçlarda kamera tabanlı algılama altyapısı olgunlaşmış olmasına karşın, mevcut çalışmalar ağırlıklı olarak dış ortam algılama ve sürücü izleme ile sınırlı kalmış; araç kabini içinde silah ve bıçak gibi fiziksel tehditlerin gerçek zamanlı tespiti büyük ölçüde ele alınmamıştır. Bu çalışma, kabin içi silah ve bıçak tespiti için tek aşamalı ve iki aşamalı nesne tanıma mimarilerini aynı koşullarda karşılaştırmalı olarak değerlendirmektedir. YOLOv8 ailesinin beş ölçeği (n, s, m, l, x), YOLO11 ailesinin beş ölçeği ve bölge önerisi tabanlı Faster R-CNN olmak üzere on bir model Roboflow Universe üzerinde açık kaynaklı olarak paylaşılan "Gun and Knife Detection" veri kümesi (6.257 eğitim, 1.349 doğrulama görüntüsü) üzerinde özdeş veri kümesi, özdeş hiperparametreler, 416×416 giriş çözünürlüğü ve NVIDIA A100 donanımıyla 50 epoch boyunca eğitilmiştir. Bu kontrollü kurulum, başarım farklarının yalnızca model mimarisinden kaynaklanmasını güvence altına almıştır.

Sonuçlar, YOLOv8s modelinin hem mAP@50 (0,860) hem de mAP@50-95 (0,658) metriklerinde on bir aday arasında Pareto-optimal en yüksek başarımı sergilediğini ve bu üstünlüğü görece daha güç bir görev olan bıçak sınıfında da koruduğunu göstermektedir. Birincil model olarak seçilen YOLOv8s 100 epoch'a uzatıldığında mAP@50 = 0,8614, mAP@50-95 = 0,6713, hassasiyet (P) = 0,9117 ve duyarlılık (R) = 0,7662 değerlerine ulaşmıştır. YOLOv8s, Faster R-CNN'i mAP@50 metriğinde yaklaşık 2 puan ve daha katı mAP@50-95 metriğinde yaklaşık 6 puan geride bırakırken, GPU üzerinde yaklaşık 340 kat daha hızlı çıkarım (0,4 ms'ye karşı 137 ms) sağlamıştır. Dikkat çekici biçimde, YOLO11 ailesinin büyük varyantları (l ve x) yalnızca iki sınıftan oluşan ve görece kısıtlı büyüklükteki veri kümesinde belirgin biçimde geride kalmış; bu durum model kapasitesi ile veri büyüklüğü arasındaki dengesizliğe işaret etmektedir. Bulgular, gerçek zamanlılık, doğruluk ve uç cihaz uygunluğu birlikte değerlendirildiğinde YOLOv8s'in araç içi gerçek zamanlı tehdit tespiti için en uygun aday olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Araç İçi Güvenlik, Faster R-CNN, Nesne Tespiti, Silah Tespiti, Uç Yapay Zekâ, YOLO11, YOLOv8

ABSTRACT

Although the camera-based perception infrastructure of connected and autonomous vehicles has matured, existing studies remain largely confined to external-environment perception and driver monitoring, leaving the real-time detection of physical threats such as firearms and knives inside the vehicle cabin largely unaddressed. This study comparatively evaluates one-stage and two-stage object-detection architectures for in-cabin firearm and knife detection under identical conditions. Eleven models, namely five scales of the YOLOv8 family (n, s, m, l, x), five scales of the YOLO11 family, and the region-proposal-based Faster R-CNN, were trained for 50 epochs on the publicly available "Gun and Knife Detection" dataset (6,257 training and 1,349 validation images) on Roboflow Universe, using an identical dataset, identical hyperparameters, a 416×416 input resolution, and NVIDIA A100 hardware.This controlled setup ensures that performance differences arise solely from model architecture.The results show that YOLOv8s achieves the Pareto-optimal highest performance among all eleven candidates on both mAP@50 (0.860) and mAP@50-95 (0.658), retaining this advantage even

for the more difficult knife class. When the selected primary model was extended to 100 epochs, YOLOv8s reached mAP@50 = 0.8614, mAP@50-95 = 0.6713, precision (P) = 0.9117, and recall (R) = 0.7662. YOLOv8s outperformed Faster R-CNN by roughly 2 points on mAP@50 and by roughly 6 points on the stricter mAP@50-95 metric, while delivering approximately 340 times faster GPU inference (0.4 ms versus 137 ms). Notably, the large variants of the YOLO11 family (l and x) fell markedly behind on this two-class, relatively limited dataset, pointing to a mismatch between model capacity and dataset size. Considered jointly across real-time capability, accuracy, and edge-device suitability, the findings establish YOLOv8s as the most suitable candidate for real-time in-vehicle threat detection.

Keywords: Edge Artificial Intelligence, Faster R-CNN, In-Vehicle Security, Object Detection, Weapon Detection, YOLO11, YOLOv8

TRAKYA BÖLGESİ'NE (TÜRKİYE) AİT METEOROLOJİK DEĞİŞİMLERİN ÇOK BOYUTLU TREND ANALİZİ (1965–2025)

MULTIDIMENSOINAL TREND ANALYSIS OF METEOROLOGICAL CHANGES IN THE TRAKYA REGION (TÜRKİYE) (1965–2025)

Deniz KİZİR
Adıyaman University, Graduate School of Natural and Applied Sciences, Department of Civil Engineering, Adıyaman, Türkiye.
ORCID ID: 0009-0005-4742-0621

Assoc. Prof. Dr. Musa EŞİT
Adıyaman University, Faculty of Engineering, Department of Civil Engineering, Adıyaman, Türkiye.
ORCID ID: 0000-0003-4509-7283

Prof. Dr. Osman GÜNAYDIN
Adıyaman University, Faculty of Engineering, Department of Civil Engineering, Adıyaman, Türkiye.
ORCID ID: 0000-0000-0000-0000

Asst. Prof. Dr. Zeyneb KILIÇ
Adıyaman University, Faculty of Engineering, Department of Civil Engineering, Adıyaman, Türkiye.
ORCID ID: 0000-0003-4954-6955

ÖZET
Bu araştırma, Trakya bölgesine (Türkiye) ait iklimsel karakteristiğini altmış yıllık bir perspektifle ele almaktadır. Söz konusu eğilimlerin yönü ve büyüklüğü; Mann-Kendall (MK), Spearman's Rho (SRHO), Sen'in Eğim Tahmini, Yenilikçi Trend Analizi (ITA) ve Yenilikçi Poligon Trend Analizi (IPTA) yöntemleriyle belirlenmiştir. Çoklu yöntem içeren bu metodolojik yaklaşım, elde edilen bulguların bilimsel tutarlılığını pekiştirmiştir. Sıcaklık verileri, bölgenin belirgin bir ısınma evresinde olduğunu ve bu sürecin özellikle son çeyrek asırda ivme kazandığını göstermektedir. Yağış tarafında ise toplam miktarda bir artış eğilimi gözlense de, asıl dikkat çeken nokta uç değerler arasındaki kararsızlıktır. Bu yüksek oynaklık ve değişkenlik, tarımsal verimlilik ve hidrolojik risk yönetimini daha kritik hale getirmektedir. Bulgular, iklim değişikliğinin yerel etkilerini anlamak ve bölgeye özel sürdürülebilir uyum stratejileri geliştirmek adına stratejik bir temel sunmaktadır.
Anahtar Kelimeler: İklim Değişikliği, Trend Analizi, Kırklareli, Sıcaklık ve Yağış Rejimi, ITA ve IPTA Yöntemleri, Hidrolojik Planlama, Sürdürülebilirlik.

ABSTRACT
This research examines the climatic characteristics of the Trakya region (Türkiye) from a sixty-year perspective. The direction and magnitude of these trends were determined using Mann-Kendall (MK), Spearman's Rho (SRHO), Sen's Slope Estimation, Innovative Trend Analysis (ITA), and Innovative Polygon Trend Analysis (IPTA) methods. This multi-method methodological approach reinforced the scientific consistency of the findings. Temperature data show that the region is in a significant warming phase, and this process has accelerated particularly in the last quarter century. While an increasing trend in total precipitation is observed, the most striking point is the instability between the extreme values. This high volatility and variability makes agricultural productivity and hydrological risk management even more critical. The findings provide a strategic basis for understanding the local impacts of climate change and developing region-specific sustainable adaptation strategies.
Keywords: Climate Change, Trend Analysis, Kırklareli, Temperature and Precipitation Regime, ITA and IPTA Methods, Hydrological Planning, Sustainability.

DEMOGRAPHIC PREDICTORS OF INTERNET USAGE TIME AND SOCIAL COMPARISON: A QUANTITATIVE STUDY

Assoc. Prof. Dr. Osman USLU
Afyon Kocatepe University, Faulty of Business and Administrative Sciences,
Management Information Systems,
ORCID: 0000-0002-0571-628

ABSTRACT
With the increasing use of the internet, interest in individuals' digital behaviors and the reasons behind these behaviors is growing. Accordingly, examining the factors influencing individuals' digital behavior has become an important research topic. While digital environments enable individuals to access information, they also offer the opportunity to constantly observe the lives, achievements, and opinions of other individuals. In this context, social comparison processes have become an important element of digital life. Although there are numerous studies in the literature on internet use and social comparison, studies that examine the effects of demographic variables on internet use duration and different dimensions of social comparison are still limited. Therefore, this study aims to examine the potential effects of demographic variables such as age, gender, education level, monthly income, and marital status on individuals' internet use duration and the ability and opinion dimensions of social comparison. Based on this, a quantitative research design was created, and data were obtained from adult individuals through a structured survey. Independent samples t-tests, analyses of variance, correlation analyses, and multiple regression analyses were used in the analysis of the research data consisting of 286 adults. The research findings reveal that age, a demographic variable, negatively predicts internet usage time. Furthermore, it was found that single individuals use the internet more than married individuals. However, the explanatory power of demographic variables on both the ability and opinion dimensions of social comparison was found to be quite limited. No significant relationships were observed between internet usage time and the dimensions of social comparison. In conclusion, the findings suggest that demographic factors play a certain role in explaining internet usage time, but that the tendency toward social comparison can be considered a more independent and stable trend than demographic characteristics.
Keywords: Internet usage time, social comparison, demographics.

IS CYBERLOAFING ALWAYS HARMFUL? RECONSIDERING POSITIVE OUTCOMES IN DIGITAL WORKPLACES

Assoc. Prof. Dr. Osman USLU
Afyon Kocatepe University, Faulty of Business and Administrative Sciences,
Management Information Systems,
ORCID: 0000-0002-0571-6281

ABSTRACT
Cyberloafing, defined as employees' use of corporate and personal internet for non-work-related purposes during working hours, has generated contrasting views regarding its potentially harmful and beneficial consequences. In the current literature, cyberloafing is mostly described as a behavior that reduces productivity, wastes time, and lowers individual and organizational performance. Therefore, cyberloafing is generally examined from the perspectives of counterproductive work behavior, workplace deviance, and organizational norm violation, and is considered an undesirable behavior. However, recent research shows that cyberloafing does not only lead to negative consequences and, under certain conditions, can also provide some beneficial outcomes for employees and organizations. Both this ambivalent nature of cyberloafing and the different findings in the existing literature necessitate a detailed examination of the concept for a better understanding. Therefore, this study aims to re-evaluate the dominant negative approach to cyberloafing and discuss its potential positive outcomes at a conceptual level. Accordingly, the cyberloafing literature has been examined from the perspectives of psychological recovery, resilience, creativity, learning, innovative behaviors, and employee well-being. This study, drawing particularly on resource conservation theory and the recovery approach, details how employees can use cyberloafing as a coping, stress-reducing, and resource replenishment mechanism in the face of intense work demands and psychological burdens. The study fundamentally points out that evaluating the consequences of cyberloafing solely in a binary, positive or negative way is insufficient. Instead, it argues that the effects of the behavior can vary depending on a number of factors such as the purpose of use, duration, intensity, and organizational context. Specifically, it suggests that short-term and controlled cyberloafing can contribute to refreshing employees' cognitive resources, support creativity, and improve psychological well-being. Conversely, it emphasizes that excessive and uncontrolled internet use will continue to trigger undesirable negative behaviors. The study reveals that cyberloafing should not be considered solely as harmful behavior, and that it is important to address it in digital work environments from a more balanced, contextual, and multidimensional perspective.
Keywords: Cyberloafing, psychological recovery, creativity, employee well-being

FARKLI TASARIM GEOMETRİLERİNE SAHİP LOWBED TREYLER RAMPALARININ İKİ MALZEME KULLANILARAK SONLU ELEMANLAR ANALİZİ

FINITE ELEMENT ANALYSIS OF LOWBED TRAILER RAMPS WITH DIFFERENT DESIGN GEOMETRIES USING TWO DIFFERENT MATERIALS

Berkay KARAÇOR
Araştırma Görevlisi Doktor, Çukurova Üniversitesi, Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü, Adana, Türkiye.
ORCID ID:0000-0001-5208-366X

Meltem ÖZKAN
Çukurova Üniversitesi, Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü, Adana, Türkiye.
ORCID ID:0009-0009-2566-1466

ÖZET

Ağır ticari taşımacılık sektöründe kullanılan lowbed treyler rampaları, iş makineleri ve ağır yüklerin güvenli bir şekilde yüklenip boşaltılmasında rol oynamaktadır. Bu yapıların tasarımında, yüksek taşıma kapasitesi ve yapısal dayanımın yanı sıra toplam ağırlığın azaltılması, yakıt tasarrufu ve lojistik verimlilik açısından öncelikli parametreler arasında yer almaktadır. Bu çalışmada, bir lowbed treyler rampasının mukavemet değerlerinden ödün verilmeden hafifletilmesi hedeflenmiş ve bu amaçla üç farklı rampa geometrisi tasarlanmıştır. Tasarımların yapısal performansını ve malzeme alternatiflerini incelemek amacıyla, yüksek mukavemetli yapı çeliği S700 ile aşınmaya dayanıklı ileri yüksek mukavemetli çelik Hardox 400 olmak üzere iki farklı malzeme grubu tercih edilmiştir. Modellenen geometrilerin mekanik davranışları, rampanın uç noktasına ve orta noktasına uygulanan iki farklı yükleme konumu altında incelenmiştir. Böylece 3 farklı tasarım, 2 farklı malzeme ve 2 farklı yükleme konumu kombinasyonu ile toplamda 12 farklı statik analiz senaryosu oluşturulmuş ve sonlu elemanlar yöntemi yazılımıyla çözdürülmüştür. Analizler sonucunda elde edilen toplam deformasyon, eşdeğer gerilme ve güvenlik faktörü verileri birbiriyle karşılaştırılmıştır. Çalışma sonuçları, geometrik değişiklikler ile rampa ağırlığında maksimum %11,81 oranında bir hafifleme sağlandığını göstermiştir. Analiz senaryoları arasında kritik gerilmelerin rampa orta noktasına yükleme yapıldığında yoğunlaştığı görülmüş, optimize edilen Tasarım 3'ün her iki malzeme grubunda da emniyet sınırları içinde kalarak en optimum performansı sergilediği tespit edilmiştir. Bu çalışma, lojistik sektöründe parça hafifletme ve malzeme optimizasyonu süreçlerine sistematik bir yaklaşım sunmaktadır.

Anahtar Kelimeler: Lowbed Rampası, S700, Hardox 400, Sonlu Elemanlar Analizi (FEA), Optimizasyon, Statik Analiz.

ABSTRACT

Lowbed trailer ramps used in the heavy commercial transport sector play a role in the safe loading and unloading of construction machinery and heavy loads. In the design of these structures, high load-bearing capacity and structural strength, as well as reducing total weight, are among the priority parameters in terms of fuel savings and logistical efficiency. In this study, the aim was to reduce the weight of a lowbed trailer ramp without compromising its strength values, and for this purpose, three different ramp geometries were designed. To examine the structural performance and material alternatives of the designs, two different material groups were preferred: high-strength structural steel S700 and wear-resistant advanced high-strength steel Hardox 400. The mechanical behavior of the modeled geometries was investigated under two different loading positions applied to the end and midpoint of the ramp. Thus, a total of 12 different static analysis scenarios were created with 3 different designs, 2 different materials, and 2 different loading position combinations, and solved using finite element method software. The total deformation, equivalent stress, and safety factor data obtained from the analyses were compared with each other. The study results showed that a maximum weight reduction of 11.81% was achieved in the ramp through geometric changes. Among the analysis scenarios, it was observed that critical stresses were concentrated when loading was applied to the midpoint of the ramp. It was determined that the optimized Design 3 exhibited the optimal performance while remaining within safety limits in both material groups.

This study provides a systematic approach to part weight reduction and material optimization processes in the logistics sector.

Keywords: Lowbed Ramp, S700, Hardox 400, Finite Element Analysis (FEA), Optimization, Static Analysis.

ARAÇ TAVAN BAGAJI BAĞLANTI AYAKLARININ YAPISAL VE AĞIRLIK OPTİMİZASYONUNUN SONLU ELEMANLAR ANALİZİ İLE İNCELENMESİ

INVESTIGATION OF THE STRUCTURAL AND WEIGHT OPTIMIZATION OF VEHICLE ROOF RACK MOUNTING BRACKETS USING FINITE ELEMENT ANALYSIS

Berkay KARAÇOR
Araştırma Görevlisi Doktor, Çukurova Üniversitesi, Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü, Adana, Türkiye.
ORCID ID:0000-0001-5208-366X

Murat SURKUÇ
Çukurova Üniversitesi, Mühendislik Fakültesi, Otomotiv Mühendisliği Bölümü, Adana, Türkiye.
ORCID ID:0009-0001-8391-0776

ÖZET

Araç tavanına entegre edilen bagaj taşıyıcı sistemleri, üzerlerine yerleştirilen yüklerin ağırlığı altında yapısal kararlılıklarını korumak zorunda olan ve doğrudan statik zorlanmalara maruz kalan elemanlardır. Bu çalışmada, tavan bagajı bağlantı ayaklarının yapısal bütünlüğünü ve statik davranışlarını incelemek amacıyla farklı geometrik boyutlarda tasarlanan bağlantı ayaklarının statik analizi yapılmıştır. Çalışma kapsamında; 3 cm yüksekliğinde içi dolu (3FD), 3 cm yüksekliğinde içi boş (3ED), 2 cm yüksekliğinde içi dolu (2FD), 2 cm yüksekliğinde içi boş (2ED) 2'şerli bağlantı ayakları ile 2 cm yüksekliğindeki içi dolu-boş 4 bağlantı ayağı olan 2FD4 ve 2ED4 olmak üzere 6 farklı model konfigürasyonu geliştirilmiştir. İçi boş olan tasarımların içinde 1 mm kalınlığında destek bağlantısı bulunmaktadır. Malzeme olarak otomotiv endüstrisinde yaygın olarak tercih edilen alüminyum alaşımı seçilmiştir. Modellerin tasarımları bilgisayar destekli teknik tasarım programı kullanılarak oluşturulmuş ve yapısal statik analizleri sonlu elemanlar analizi programı kullanılarak gerçekleştirilmiştir. Tasarımlara otomotiv standartları ve taşıma kapasitesi sınırları göz önüne alınarak düşey doğrultuda 100 kg (981 N) sabit yük uygulanmış; analizler sonucunda toplam deformasyon, maksimum Von Mises gerilmesi ve emniyet faktörü elde edilmiştir. Analiz bulgularına göre, içi boş tasarımların içi dolu tasarımlara kıyasla ortalama 6,4 kat daha hafif olduğu, ancak içi dolu modellerin deformasyonu minimumda tutarak daha yüksek güvenlik sunduğu görülmüştür. 2 cm yüksekliğindeki içi boş modeller incelendiğinde; ayak sayısının 2'den 4'e çıkarıldığı 2ED4 tasarımının, 2ED tasarımına göre deformasyon miktarını 2 kat azalttığı ve emniyet faktörünü 1,93 kat artırarak 4,47 seviyesine yükselttiği tespit edilmiştir. Sonuçlar; hafiflik, maliyet ve yapısal güvenilirlik kriterleri bir arada değerlendirildiğinde, 2ED modelinin tavan bagajı uygulamalarında ağırlık optimizasyonu ve yapısal yeterlilik açısından en ideal çözümü sunduğunu göstermektedir.

Anahtar Kelimeler: Araç tavan bagajı, Bağlantı ayağı tasarımı, Sonlu elemanlar analizi, Yapısal analiz, Alüminyum alaşım.

ABSTRACT

Roof-mounted luggage carrier systems are elements that must maintain their structural stability under the weight of the loads placed on them and are directly subjected to static stresses. In this study, static analysis of mounting brackets designed in different geometric dimensions was performed to examine the structural integrity and static behavior of roof luggage carrier mounting brackets. Within the scope of the study, 6 different model configurations were developed: 2 pairs of 3 cm high solid (3FD), 3 cm high hollow (3ED), 2 cm high solid (2FD), 2 cm high hollow (2ED) mounting brackets, and 2FD4 and 2ED4, which are 2 cm high solid-hollow mounting brackets with 4 mounting brackets. The hollow designs contain a 1 mm thick support connection. Aluminum alloy, commonly preferred in the automotive industry, was chosen as the material. The designs of the models were created using a computer-aided technical design program, and their structural static analyses were performed using a finite element analysis program. A constant load of 100 kg (981 N) was applied to the designs in the vertical direction, considering automotive standards and load capacity limits; the total deformation, maximum Von Mises stress, and safety factor were obtained as a result of the analyses. According to the analysis findings, hollow designs are on average 6.4 times lighter than solid designs, but solid models

offer higher safety by minimizing deformation. When the 2 cm high hollow models were examined, it was determined that the 2ED4 design, in which the number of legs was increased from 2 to 4, reduced the amount of deformation by 2 times and increased the safety factor by 1.93 times to 4.47 compared to the 2ED design. The results show that when lightness, cost, and structural reliability criteria are evaluated together, the 2ED model offers the most ideal solution in terms of weight optimization and structural adequacy in roof rack applications.
Keywords: Vehicle roof rack, Mounting bracket design, Finite element analysis, Structural analysis, Aluminum alloy.

OKUL ÖNCESİ DÖNEM ÇOCUKLARININ AKRAN İLİŞKİLERİNİ ETKİLEYEN FAKTÖRLERİN CHAID ANALİZİ İLE İNCELENMESİ

AN EXAMINATION OF FACTORS INFLUENCING PEER RELATIONSHIPS AMONG PRESCHOOL CHILDREN USING CHAID ANALYSIS

Serap DUMAN
Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü,
Okul Öncesi Eğitimi Bilim Dalı, Ankara.

Prof. Dr. Gülümser GÜLTEKİN AKDUMAN
Gazi Üniversitesi, Eğitim Fakültesi,
Okul Öncesi Eğitimi Bilim Dalı, Ankara.

ÖZET

Bu araştırmanın amacı okul öncesi dönem çocuklarının akran ilişkilerini etkileyen faktörlerin belirlenmesi ve bu faktörlerin önem sırasının ortaya konulmasıdır. Araştırma nicel araştırma yöntemlerinden ilişkisel tarama modeliyle yürütülmüştür. Çalışma grubunu Ankara ili Etimesgut ilçesinde bulunan 2024-2025 eğitim-öğretim yılında okul öncesi eğitim kurumlarında öğrenim gören ve kolay ulaşılabilir örnekleme yöntemiyle seçilen 340 çocuk oluşturmaktadır. Araştırma verileri "Çocuk Bilgi Formu" ve "Okul Öncesinde Akran İlişkileri Ölçeği (öğretmen formu)" kullanılarak toplanmıştır. Araştırmada veri analizi sürecinde sınıflandırma yöntemlerinden biri olan CHAID analizi yöntemi kullanılmıştır. Araştırmadan elde edilen bulgulara göre okul öncesi dönem çocuklarının akran ilişkilerini etkileyen en önemli faktörlerin cinsiyet, yaş, okula devam süresi, günlük ekran kullanım süresi olduğu belirlenmiştir. Araştırma sonuçlarına göre zorba çocuk alt boyutunu etkileyen en önemli faktörün cinsiyet olduğu ve 48-60 aydan büyük kız çocuklarının zorba çocuk düzeyinin düşük olduğu gözlenmiştir. Arkadaşlık ve etkileşim alt boyutunu etkileyen en önemli faktörün okula devam süresi olduğu ve 1 yıldan fazla okula devam eden çocukların arkadaşlık ve etkileşim düzeylerinin daha yüksek olduğu görülmüştür. Mağdur çocuk alt boyutunu etkileyen en önemli faktörün cinsiyet olduğu ve 1-3 saat veya daha az ekran kullanan kız çocuklarının mağdur çocuk düzeylerinin daha düşük olduğu belirlenmiştir. Akran ilişkileri toplamını etkileyen en önemli faktörün cinsiyet olduğu ve 1 yıldan fazla okula devam eden, 1-3 saat veya daha az ekran kullanan erkek çocuklarının akran ilişkisi düzeylerinin daha yüksek olduğu tespit edilmiştir.

Anahtar Kelimeler: Okul öncesi dönem, akran ilişkileri, zorbalık, mağduriyet, arkadaşlık ve etkileşim, CHAID analizi.

ABSTRACT

The purpose of this study is to identify the factors influencing peer relationships among preschool-aged children and to determine the order of importance of these factors. The study was conducted using the correlational survey model, one of the quantitative research methods. The study group consists of 340 children enrolled in preschool education institutions in the Etimesgut district of Ankara during the 2024–2025 academic year, selected using a convenience sampling method. Research data were collected using the "Child Information Form" and the "Preschool Peer Relationships Scale (teacher form)." The CHAID analysis method, one of the classification methods, was used in the data analysis process of the study. According to the findings of the study, the most significant factors influencing peer relationships among preschool-aged children were determined to be gender, age, duration of school attendance, and daily screen time. According to the research results, the most significant factor influencing the "bully" sub-dimension was gender, and it was observed that girls aged 48–60 months had lower levels of bullying behavior. The most significant factor influencing the "friendship and interaction" sub-dimension was duration of school attendance, and it was found that children who had attended school for more than one year had higher levels of friendship and interaction. It was determined that gender is the most significant factor influencing the victimization subscale, and that girls who use screens for 1–3 hours or less have lower levels of victimization. It was also found that gender is the most significant factor influencing the total peer relationship score, and that boys who have been attending school for more than one year and use screens for 1–3 hours or less have higher levels of peer relationships.

Keywords: Preschool years, peer relationships, bullying, victimization, friendship, and social interaction, CHAID analysis.

GİRİŞİMCİLİK EĞİTİMİNİN TURİZM LİSANS ÖĞRENCİLERİNİN GİRİŞİMCİLİK EĞİLİMLERİ ÜZERİNE ETKİSİ: ÇANKIRI KARATEKİN ÜNİVERSİTESİ ÖRNEĞİ

THE EFFECT OF ENTREPRENEURSHIP EDUCATION ON THE ENTREPRENEURIAL TENDENCIES OF TOURISM UNDERGRADUATE STUDENTS: THE CASE OF ÇANKIRI KARATEKİN UNIVERSITY

Hüseyin ÖZDEMİR
Doç. Dr., Çankırı Karatekin Üniversitesi, Turizm Fakültesi, Turizm İşletmeciliği Bölümü, Çankırı, Türkiye.
ORCID ID: 0000-0002-9598-6938

ÖZET

Araştırmanın amacı, Çankırı Karatekin Üniversitesi turizm lisans öğrencilerinin girişimcilik eğilimlerinin belirlenmesidir. Araştırmanın evrenini, 2025-2026 Eğitim Öğretim yılı bahar döneminde Çankırı Karatekin Üniversitesi Turizm Fakültesinde eğitim alan turizm lisans öğrencileri oluşturmaktadır. Araştırmada nicel araştırma yaklaşımı benimsenmiş ve veri toplama aracı olarak anket tekniğinden yararlanılmıştır. İki bölüm olarak hazırlanan anket formunun ilk bölümünde, araştırma katılımcısı turizm lisans öğrencilerinin kişisel özelliklerini belirlemeye yönelik sorular yer almıştır. Anket formunun ikinci bölümünde ise araştırma katılımcısı turizm lisans öğrencilerin girişimcilik eğilimlerinin düzeylerini ölçmeyi amaçlayan beşli Likert tipi bir ölçek kullanılmıştır. On dört ifadeden oluşan ölçeğin güvenilirlik ve geçerlilik analizleri Girginer ve Uçkun (2004) tarafından yapılmıştır. Araştırmanın evrenini, Çankırı Karatekin Üniversitesi Turizm Fakültesinde öğrenim gören toplam 300 öğrenci oluşturmuştur. Çalışma kapsamında evrende yer alan öğrencilerin tamamına ulaşılması hedeflenmiş ve anket formları bütün öğrencilere dağıtılmaya çalışılmıştır. Veri toplama sürecinin sonunda eksik ya da hatalı biçimde doldurulan formlar ile yanıtlanmadan bırakılan anketler değerlendirme dışı tutulmuştur. Gerekli ayıklama işlemlerinin ardından kullanılabilir durumda olduğu belirlenen 188 anket formu analiz kapsamına alınmıştır. Böylece araştırma evreninin %63'üne ulaşılmıştır. Katılımcılar tarafından doldurulan anketlerden elde edilen verilerin çözümlenmesinde paket programlardan IBM SPSS 25 kullanılmıştır. Araştırma katılımcısı turizm lisans öğrencilerin kişisel özellikleri betimsel istatistikler aracılığıyla ortaya konmuştur. Anlamlı farklılıkların tespiti için bağımsız örneklem T testi ve tek yönlü Anova testlerinden yararlanılmıştır. Araştırma bulgularına göre; erkek öğrencilerin kadın öğrencilere göre, turizm işletmeciliği bölümü öğrencilerini turizm rehberliği bölümü öğrencilerine göre, üçüncü sınıf öğrencilerinin diğer sınıf öğrencilerine göre, 17-19 yaş aralığı grubundaki öğrencilerin diğer yaş gruplarına göre ve girişimcilik dersi alan öğrencilerin girişimcilik dersi almayan öğrencilere göre girişimcilik eğilimlerinin daha yüksek olduğu görülmüştür. Araştırmada bağımsız örneklem T testi ve tek yönlü Anova testlerinin sonucuna göre Çankırı Karatekin Üniversitesi Turizm Fakültesi öğrencilerinin girişimcilik eğilimlerinin girişimcilik dersi alma değişkenine göre istatistiksel olarak anlamlı farklılık bulunmuştur.

Anahtar Kelimeler: Girişimcilik Eğilimi, Girişimcilik Dersi, Turizm Lisans Öğrencileri, Çankırı Karatekin Üniversitesi.

ABSTRACT

The aim of this research is to determine the entrepreneurial tendencies of tourism undergraduate students at Çankırı Karatekin University. The research population consists of tourism undergraduate students studying at the Faculty of Tourism of Çankırı Karatekin University during the spring semester of the 2025-2026 academic year. A quantitative research approach was adopted in the study, and the survey technique was used as a data collection tool. The survey form, prepared in two parts, included questions in the first part aimed at determining the personal characteristics of the tourism undergraduate students participating in the research. In the second part of the survey form, a five-point Likert scale was used to measure the level of entrepreneurial tendencies of the tourism undergraduate students participating in the research. Reliability and validity analyses of the scale, which consists of fourteen statements, were performed by Girginer and Uçkun (2004). The research population consisted of a total of 300 students studying at the Faculty of Tourism of Çankırı Karatekin University. Within the scope of the study, it was aimed to reach all students in the population, and survey forms were distributed to all students.

At the end of the data collection process, forms that were incomplete or incorrectly filled out, as well as surveys left unanswered, were excluded from the evaluation. After the necessary screening processes, 188 survey forms determined to be usable were included in the analysis. Thus, 63% of the research population was reached. IBM SPSS 25 software package was used to analyze the data obtained from the surveys completed by the participants. The personal characteristics of the tourism undergraduate students participating in the research were revealed through descriptive statistics. Independent samples T-test and one-way ANOVA tests were used to determine significant differences. According to the research findings; male students showed higher entrepreneurial tendencies than female students, tourism management students than tourism guiding students, third-year students than other students, students in the 17-19 age group than other age groups, and students who took an entrepreneurship course than those who did not take an entrepreneurship course. According to the results of the independent samples T-test and one-way ANOVA tests in the research, a statistically significant difference was found in the entrepreneurial tendencies of Çankırı Karatekin University Faculty of Tourism students according to the variable of taking an entrepreneurship course.

Keywords: Entrepreneurial Tendency, Entrepreneurship Course, Tourism Undergraduate Students, Çankırı Karatekin University.

BİR NİTROFENİL SCHİFF BAZININ TEORİK HESAPLAMALARI VE İN SİLİCO İLAÇ BENZERLİĞİ

THEORETICAL CALCULATIONS AND IN SILICO DRUG-LIKENESS OF A NITROPHENYL SCHIFF BASE

Sevgi KANSIZ
Dr. Öğr. Üyesi, Samsun Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Temel Bilimler Bölümü, Samsun, Türkiye.
ORCID ID: 0000-0002-8433-7975

ÖZET

Nitrofenil grubu içeren Schiff bazları, çok yönlü biyolojik profilleri ve ayırt edici elektronik özellikleri nedeniyle tıbbi kimyada önemli bir organik bileşik sınıfını temsil etmektedir. Bu çalışmada, Schiff baz bileşiğinin ($C_{14}H_{12}N_2O_4$) yapısal, elektronik ve terapötik potansiyeli teorik yaklaşımlar yoluyla kapsamlı bir şekilde araştırılmıştır. Moleküler geometriyi optimize etmek ve moleküler elektrostatik potansiyeli haritalamak için B3LYP/6-311G(d,p) seviyesinde Yoğunluk Fonksiyonel Teorisi (DFT) kullanılarak kuantum kimyasal hesaplamalar yapılmıştır. MEP yüzeyi, nükleofilik bölgeleri öncelikle nitro grubunun oksijen atomları üzerinde, elektrofilik bölgeleri ise hidroksil ve imin hidrojen atomları çevresinde lokalize olarak tanımlamıştır. Kristal paketleme içindeki moleküller arası etkileşimler, Hirshfeld yüzey analizi kullanılarak nicel olarak belirlendi ve H···H (%35) ve O···H/H···O (%34) temaslarının süpermoleküler yapıyı domine ettiği, bunu C···H/H···C (%11) ve C···C (%8) etkileşimlerinin izlediği ortaya çıktı. Bilgisayar ortamında yapılan ADME ve ilaç benzerliği analizleri, bileşiğin farmakokinetik özellikler sergilediğini, optimal fizyolojik radar sınırları içinde yer aldığını ve uygun kan-beyin bariyeri (BBB) geçirgenliği ile yüksek insan bağırsak emilimi (HIA) gösterdiğini ortaya koydu. Nöroterapötik potansiyelini değerlendirmek için, insan asetilkolinesterazına (AChE, PDB ID: 4EY7) karşı moleküler kenetlenme çalışmaları yapıldı. Ligand, ARG296 ile geleneksel bir hidrojen bağı ve TYR124 ve TYR341 kalıntılarıyla güçlü π–π T şeklinde etkileşimler yoluyla stabilize edilmiş, -10,12 kcal/mol'lük bir bağlanma afinitesi göstermiştir. Toplu olarak, teorik araştırmalar, kristal yüzey analizi ve in silico farmakolojik profilleme, $C_{14}H_{12}N_2O_4$ bileşiğinin yeni anti-Alzheimer ajanlarının geliştirilmesi için umut vadeden bir iskelet olduğunu ve daha fazla deneysel ve biyolojik araştırmayı gerektirdiğini göstermektedir.

Anahtar Kelimeler: Schiff bazı, DFT hesaplamaları, Hirshfeld yüzeyi, MEP, ADME profil oluşturma, Moleküler kenetlenme, AChE

ABSTRACT

Schiff bases containing a nitrophenyl moiety represent a crucial class of organic compounds in medicinal chemistry due to their versatile biological profiles and distinctive electronic properties. In this study, the structural, electronic, and therapeutic potential of the Schiff base compound ($C_{14}H_{12}N_2O_4$) were comprehensively investigated through theoretical approaches. Quantum chemical calculations were performed using Density Functional Theory (DFT) at the B3LYP/6-311G(d,p) level to optimize the molecular geometry and map the molecular electrostatic potential. The MEP surface identified the nucleophilic regions primarily over the oxygen atoms of the nitro group, while the electrophilic regions were localized around the hydroxyl and imine hydrogen atoms. Intermolecular interactions within the crystal packing were quantified using Hirshfeld surface analysis, revealing that H···H (35%) and O···H/H···O (34%) contacts dominate the supramolecular assembly, followed by C···H/H···C (11%) and C···C (8%) interactions. In silico ADME and drug-likeness analyses indicated that the compound exhibits pharmacokinetic properties, falling well within the optimal physiological radar boundaries and showing high human intestinal absorption (HIA) together with favorable blood–brain barrier (BBB) permeability. To evaluate its neurotherapeutic potential, molecular docking studies were carried out against human acetylcholinesterase (AChE, PDB ID: 4EY7). The ligand demonstrated a binding affinity of −10.12 kcal/mol, stabilized by a conventional hydrogen bond with ARG296 and strong π–π T-shaped interactions with TYR124 and TYR341 residues.

Collectively, the theoretical investigations, crystal surface analysis, and in silico pharmacological profiling suggest that $C_{14}H_{12}N_2O_4$ is a promising scaffold for the development of novel anti-Alzheimer agents, warranting further experimental and biological investigations.

Keywords: Schiff base, DFT calculations, Hirshfeld surface, MEP, ADME profiling, Molecular docking, AChE.

NİTROTİYOFEN İÇEREN BİR SCHİFF BAZININ MOLEKÜLER YÜZEY ANALİZİ, MOLEKÜLER KENETLENME VE ADME ARAŞTIRMASI

MOLECULAR SURFACE ANALYSIS, MOLECULAR DOCKING, AND ADME INVESTIGATION OF A NITROTHIOPHENE-CONTAINING SCHIFF BASE

Dr. Öğr. Üyesi Sevgi KANSIZ
Samsun Üniversitesi, Mühendislik ve Doğa Bilimleri Fakültesi, Temel Bilimler Bölümü, Samsun, Türkiye.
ORCID ID: 0000-0002-8433-7975

ÖZET

Tiyofen halkaları içeren Schiff baz türevleri, çok yönlü biyolojik aktiviteleri ve elverişli elektronik özellikleri nedeniyle büyük ilgi görmüştür. Bu çalışmada, $C_{12}H_9N_3O_3S$ Schiff bazının moleküler yapısı, elektronik davranışı, moleküllerarası etkileşimleri ve potansiyel farmasötik özellikleri, hesaplama teknikleri kullanılarak sistematik olarak incelenmiştir. Geometri optimizasyonu ve elektronik yapı hesaplamaları, B3LYP fonksiyoneli ve 6-311G(d,p) temel seti kullanılarak Yoğunluk Fonksiyonel Teorisi (DFT) çerçevesinde gerçekleştirilmiştir. Moleküler elektrostatik potansiyel (MEP) analizi, nitro ve karbonil oksijen atomlarının en yüksek elektron yoğunluğuna sahip olduğunu ve bu atomların en olası elektrofilik etkileşim bölgeleri olduğunu gösterirken, hidrazon hidrojen atomlarının nükleofilik saldırıya duyarlı elektron eksikliği olan bölgeleri temsil ettiğini ortaya koymuştur. Kristal paketleme özellikleri, Hirshfeld yüzey analizi ile daha ayrıntılı olarak incelendi ve O···H/H···O temaslarının en büyük katkıyı (%32) sağladığı, bunu H···H (%22), C···H/H···C (%12) ve S···H/H···S (%7) etkileşimlerinin izlediği gösterildi. ADME ve ilaç benzerliği hesaplamalarından tahmin edilen farmakokinetik profil, kan-beyin bariyeri geçirgenliğinin olmamasına rağmen, yüksek insan bağırsak emilimi ve temel ilaç benzerliği kriterlerine uyum da dahil olmak üzere olumlu oral ilaç özelliklerini ortaya koydu. Ayrıca, insan asetilkolinesterazına (AChE, PDB ID: 4EY7) karşı moleküler kenetlenme hesaplamaları, esas olarak TRP286 kalıntısını içeren π–π etkileşimleri yoluyla stabilize edilen -10,6 kcal/mol'lük güçlü bir bağlanma afinitesi ortaya koydu. Bu bulgular, $C_{12}H_9N_3O_3S$'nin potansiyel bir Alzheimer karşıtı ajan olarak daha da geliştirilmesi için umut vadeden bir aday olduğunu göstermekte ve gelecekteki deneysel doğrulama ve biyolojik değerlendirme için teorik bir temel sağlamaktadır.

Anahtar Kelimeler: Schiff bazı, DFT hesaplamaları, Hirshfeld yüzeyi, MEP, ADME profil oluşturma, Moleküler kenetlenme, AChE

ABSTRACT

Schiff base derivatives incorporating thiophene rings have attracted considerable interest because of their versatile biological activities and favorable electronic characteristics. In the present work, the molecular structure, electronic behavior, intermolecular interactions, and potential pharmaceutical properties of the Schiff base $C_{12}H_9N_3O_3S$ were systematically examined using computational techniques. Geometry optimization and electronic structure calculations were carried out within the framework of Density Functional Theory (DFT) employing the B3LYP functional together with the 6-311G(d,p) basis set. Molecular electrostatic potential (MEP) analysis demonstrated that the nitro and carbonyl oxygen atoms possess the highest electron density, identifying them as the most probable electrophilic interaction sites, whereas the hydrazone hydrogen atoms represent electron-deficient regions susceptible to nucleophilic attack.

Crystal packing features were further explored by Hirshfeld surface analysis, which showed that O···H/H···O contacts make the largest contribution (32%), followed by H···H (22%), C···H/H···C (12%), and S···H/H···S (7%) interactions. The pharmacokinetic profile predicted from ADME and drug-likeness calculations suggested favorable oral drug characteristics, including high human intestinal absorption and compliance with the principal drug-likeness criteria, despite the absence of blood–brain barrier permeability. Furthermore, molecular docking calculations against human acetylcholinesterase (AChE, PDB ID: 4EY7) revealed a strong binding affinity of −10.6 kcal/mol, mainly stabilized through π–π interactions involving the TRP286 residue.

These findings indicate that $C_{12}H_9N_3O_3S$ represents a promising candidate for further development as a potential anti-Alzheimer agent and provides a theoretical basis for future experimental validation and biological evaluation.

Keywords: Schiff base, DFT calculations, Hirshfeld surface, MEP, ADME profiling, Molecular docking, AChE.

TURİZM LİSANS ÖĞRENCİLERİNİN SAĞLIK TURİZMİ FARKINDALIKLARI ÜZERİNE BİR ARAŞTIRMA: ÇANKIRI KARATEKİN ÜNİVERSİTESİ ÖRNEĞİ

A RESEARCH ON HEALTH TOURISM AWARENESS OF TOURISM UNDERGRADUATE STUDENTS: THE CASE OF ÇANKIRI KARATEKİN UNIVERSITY

Doç. Dr. Hüseyin ÖZDEMİR
Çankırı Karatekin Üniversitesi, Turizm Fakültesi, Turizm İşletmeciliği Bölümü, Çankırı, Türkiye.
ORCID ID: 0000-0002-9598-6938

ÖZET

Araştırmanın amacı, Çankırı Karatekin Üniversitesi turizm lisans öğrencilerinin sağlık turizmi farkındalıklarının belirlenmesidir. Araştırmanın evrenini, 2025-2026 Eğitim Öğretim yılı bahar döneminde Çankırı Karatekin Üniversitesi Turizm Fakültesinde eğitim alan turizm lisans öğrencileri oluşturmaktadır. Araştırmada nicel araştırma yaklaşımı benimsenmiş ve veri toplama aracı olarak anket tekniğinden yararlanılmıştır. İki bölüm olarak hazırlanan anket formunun ilk bölümünde, araştırma katılımcısı turizm lisans öğrencilerinin kişisel özelliklerini belirlemeye yönelik sorular yer almıştır. Anket formunun ikinci bölümünde ise araştırma katılımcısı turizm lisans öğrencilerin sağlık turizmine yönelik farkındalık düzeylerini ölçmeyi amaçlayan beşli Likert tipi bir ölçek kullanılmıştır. Çankırı İlinin Sağlık Turizmi Potansiyeli, Altyapı ve Destek Hizmetleri, Hizmet Yetkinliği ve Bilinç ve Farkındalık olmak üzere dört boyuttan ve toplam yirmi beş ifadeden oluşan araştırma ölçeğinin güvenilirlik ve geçerlilik analizleri Alkaç ve Büyükşalvarcı (2024) ve Acar ve Turan (2016) tarafından gerçekleştirilmiştir. Araştırmanın evrenini, Çankırı Karatekin Üniversitesi Turizm Fakültesinde öğrenim gören toplam 300 öğrenci oluşturmuştur. Çalışma kapsamında evrende yer alan öğrencilerin tamamına ulaşılması hedeflenmiş ve anket formları bütün öğrencilere dağıtılmaya çalışılmıştır. Veri toplama sürecinin sonunda eksik ya da hatalı biçimde doldurulan formlar ile yanıtlanmadan bırakılan anketler değerlendirme dışı tutulmuştur. Gerekli ayıklama işlemlerinin ardından kullanılabilir durumda olduğu belirlenen 204 anket formu analiz kapsamına alınmıştır. Böylece araştırma evreninin %68'ine ulaşılmıştır. Katılımcılar tarafından doldurulan anketlerden elde edilen verilerin çözümlenmesinde paket programlardan IBM SPSS 25 kullanılmıştır. Araştırma katılımcısı turizm lisans öğrencilerin kişisel özellikleri betimsel istatistikler aracılığıyla ortaya konmuştur. Katılımcı grupları arasında istatistiksel açıdan anlamlı bir farklılık bulunup bulunmadığını belirlemek amacıyla ise bağımsız örneklem T testi ile tek yönlü ANOVA analizleri uygulanmıştır. Araştırma bulgularına göre; bilinç ve farkındalık boyutunda erkek öğrencilerin kadın öğrencilere göre, turizm rehberliği bölümü öğrencilerini turizm işletmeciliği bölümü öğrencilerine göre, dördüncü sınıf öğrencilerinin diğer alt sınıf öğrencilerine göre ve 20-21 yaş aralığı grubundaki öğrencilerin diğer yaş gruplarına göre puan ortalamalarının daha yüksek olduğu görülmüştür. Hizmet yetkinliği boyutunda erkek öğrencilerin kadın öğrencilere göre, turizm işletmeciliği bölümü öğrencilerini turizm rehberliği bölümü öğrencilerine göre, dördüncü sınıf öğrencilerinin diğer alt sınıf öğrencilerine göre ve 22 yaş ve üzeri grubundaki öğrencilerin diğer yaş gruplarına göre puan ortalamalarının daha yüksek olduğu görülmüştür. Altyapı ve destek hizmetleri boyutunda kadın öğrencilerin erkek öğrencilere göre, turizm işletmeciliği bölümü öğrencilerini turizm rehberliği bölümü öğrencilerine göre, dördüncü sınıf öğrencilerinin diğer alt sınıf öğrencilerine göre ve 22 yaş ve üzeri grubundaki öğrencilerin diğer yaş gruplarına göre puan ortalamalarının daha yüksek olduğu görülmüştür. Çankırı ilinin sağlık turizmi potansiyeli boyutunda erkek öğrencilerin kadın öğrencilere göre, turizm işletmeciliği bölümü öğrencilerini turizm rehberliği bölümü öğrencilerine göre, ikinci sınıf öğrencilerinin diğer farklı sınıf öğrencilerine göre ve 17-19 yaş aralığı grubundaki öğrencilerin diğer yaş gruplarına göre puan ortalamalarının dah yüksek olduğu görülmüştür. Araştırmada bağımsız örneklem T testi ve tek yönlü Anova testlerinin sonucuna göre Çankırı Karatekin Üniversitesi Turizm Fakültesi öğrencilerinin hizmet yetkinliği boyutunda cinsiyet, bölüm ve sınıf değişkenlerinde, altyapı ve destek hizmetleri boyutunda sınıf değişkeninde ve Çankırı ilinin sağlık turizmi potansiyeli boyutunda cinsiyet, bölüm ve sınıf değişkenlerinde istatistiksel olarak anlamlı farklılıklar bulunmuştur.

Anahtar Kelimeler: Sağlık Turizmi, Farkındalık, Turizm Lisans Öğrencileri, Çankırı Karatekin Üniversitesi.

ABSTRACT

The aim of this research is to determine the awareness of tourism undergraduate students at Çankırı Karatekin University regarding health tourism. The research population consists of tourism undergraduate students studying at the Faculty of Tourism of Çankırı Karatekin University during the spring semester of the 2025-2026 academic year. A quantitative research approach was adopted in the study, and the survey technique was used as a data collection tool. The survey form, prepared in two parts, included questions in the first part aimed at determining the personal characteristics of the tourism undergraduate students participating in the research. In the second part of the survey form, a five-point Likert-type scale was used to measure the awareness level of the tourism undergraduate students participating in the research regarding health tourism. The reliability and validity analyses of the research scale, which consists of four dimensions and a total of twenty-five statements: Çankırı Province's Health Tourism Potential, Infrastructure and Support Services, Service Competence, and Awareness, were carried out by Alkaç and Büyükşalvarcı (2024) and Acar and Turan (2016). The study population consisted of a total of 300 students studying at the Faculty of Tourism of Çankırı Karatekin University. The aim of the study was to reach all students in the population, and survey forms were distributed to all students. At the end of the data collection process, incomplete or incorrectly filled forms, as well as unanswered surveys, were excluded from the evaluation. After the necessary selection process, 204 survey forms deemed usable were included in the analysis. Thus, 68% of the research population was reached. IBM SPSS 25 software package was used to analyze the data obtained from the surveys completed by the participants. The personal characteristics of the tourism undergraduate students participating in the research were revealed through descriptive statistics. To determine whether there were statistically significant differences between the participant groups, independent samples T-test and one-way ANOVA analyses were applied. According to the research findings; In the dimension of awareness and consciousness, male students scored higher than female students, tourism guiding students scored higher than tourism management students, fourth-year students scored higher than other lower-year students, and students in the 20-21 age group scored higher than other age groups. In the dimension of service competence, male students scored higher than female students, tourism management students scored higher than tourism guiding students, fourth-year students scored higher than other lower-year students, and students in the 22 years and older age group scored higher than other age groups. In the dimension of infrastructure and support services, female students scored higher than male students, tourism management students scored higher than tourism guiding students, fourth-year students scored higher than other lower-year students, and students in the 22 years and older age group scored higher than other age groups. In the study, regarding the health tourism potential of Çankırı province, it was observed that male students scored higher than female students, tourism management students scored higher than tourism guiding students, second-year students scored higher than students from other classes, and students in the 17-19 age group scored higher than other age groups. According to the results of independent samples T-test and one-way ANOVA tests, statistically significant differences were found in the service competency dimension of Çankırı Karatekin University Faculty of Tourism students based on gender, department, and class variables; in the infrastructure and support services dimension based on class variable; and in the health tourism potential dimension of Çankırı province based on gender, department, and class variables.

Keywords: Health Tourism, Awareness, Tourism Undergraduate Students, Çankırı Karatekin University.

KUR'AN SEMANTİĞİNDE KAVRAMSAL DÖNÜŞÜMÜ MÜMKÜN KILAN KÖPRÜ TERİMLER: İLİM, TİLÂVET, İZN VE VAHİY KAVRAMLARI

BRIDGE TERMS ENABLING CONCEPTUAL TRANSFORMATION IN QUR'ANIC SEMANTICS: ʿILM, TILĀWAH, IDHN, AND WAḤY

Dr. Öğr. Gör. Murat OLTULU
Ankara Üniversitesi, İlahiyat Fakültesi, Tefsir, Ankara, Türkiye.
ORCID ID: 0000-0002-6028-3079

ÖZET

Bu bildirinin amacı, Kur'an'ın nüzul sürecinde gerçekleştirdiği semantik dönüşümün yapısal mekanizmasını ortaya koymaktır. Çalışma, Kur'an'ın Cahiliye döneminden devraldığı kavramlardan herhangi birinin anlam değişimlerini tek tek incelemekten ziyade, bu dönüşümü mümkün kılan ve kavramları yeni bir anlam sistemine dâhil eden *köprü terimlerin* işlevlerine odaklanmaktadır. Temel tez, Kur'an'da anlamsal dönüşümün münferit kelimelerin yeniden tanımlanmasıyla değil, onları Allah merkezli yeni bir kavramsal ağ içerisine yerleştiren ilişkisel mekanizmalar aracılığıyla gerçekleştiğidir. Bu çerçevede *ilim, vahiy, tilâvet* ve *izn* kavramları, semantik dönüşümün temel taşıyıcıları olarak ele alınmaktadır. Söz konusu kavramlar yalnızca kendi anlam alanlarına sahip terimler olmayıp, aynı zamanda diğer kavramların meşruiyetini, yönelimini ve referans çerçevesini belirleyen yapısal bağlayıcılar olarak işlev görmektedir. Kur'an öncesi dönemde kabile, gelenek, toplumsal otorite veya şahsî tecrübe ile ilişkilendirilen pek çok kavram, bu köprü terimler aracılığıyla yeni bir anlam evrenine taşınmaktadır. Özellikle *vahiy*, bilginin nihai kaynağını belirleyerek kavramların doğruluk zeminini yeniden kurmakta; *ilim*, bu ilahî kaynağa dayanan bilginin meşruiyet ölçütü hâline gelmektedir. *Tilâvet*, ilahî hitabın sürekli olarak yeniden üretilmesini ve anlamın korunmasını sağlayan bir aktarım mekanizması işlevi görürken; *izn* kavramı ise eylemlerin, hükümlerin ve değerlerin geçerlilik sınırlarını Allah'ın iradesine bağlamaktadır. Böylece söz konusu kavramlar, diğer kavramların yatay ve beşerî ilişki ağlarını dönüştürerek onları dikey ve aşkın bir referans noktasına, yani Allah odak kavramına bağlamaktadır. Sonuç olarak çalışma, Kur'an semantiğinde asıl dönüşümün tek tek kavramların içeriklerinde değil, kavramlar arasındaki ilişkileri yeniden düzenleyen bu köprü terimler sisteminde gerçekleştiğini ileri sürmektedir. Çalışmada nitel analiz ve kavramsal çözümleme yoluyla, Kur'an'ın inşa ettiği yeni dünya görüşünün büyük ölçüde bu terimler aracılığıyla kurulan ilahî referans ve meşruiyet ağı tarafından şekillendirildiği ortaya konmaktadır.

Anahtar Kelimeler: Kur'an Semantiği, Kavramsal Dönüşüm, Köprü Terimler, İlim, Vahiy, Tilâvet, İzn.

ABSTRACT

The aim of this paper is to elucidate the structural mechanism underlying the semantic transformation brought about by the Qurʾān during the process of revelation. Rather than individually examining the semantic changes undergone by particular concepts inherited from the Jāhiliyyah period, the study focuses on the function of bridge terms that made this transformation possible and incorporated these concepts into a new semantic system. Its central thesis is that semantic transformation in the Qurʾān occurs not through the redefinition of isolated words, but through relational mechanisms that situate them within a new conceptual network centered on Allah. Within this framework, the concepts of *ʿilm* (knowledge), *waḥy* (revelation), *tilāwah* (recitation), and *idhn* (permission) are examined as the principal carriers of semantic transformation. These concepts are not merely terms possessing their own semantic domains; they also function as structural connectors that determine the legitimacy, orientation, and frame of reference for other concepts. Through these bridge terms, numerous concepts that, in the pre-Qurʾānic period, were associated with tribe, tradition, social authority, or personal experience are transferred into a new semantic universe. In particular, *waḥy* reestablishes the foundation of truth for concepts by identifying the ultimate source of knowledge, while *ʿilm* becomes the criterion through which knowledge derived from this divine source is validated. *Tilāwah* functions as a mechanism of transmission that ensures the continual reproduction of divine discourse and the preservation of meaning, whereas the concept of *idhn* links the validity of actions, rulings, and values to the will of God.

In this way, these concepts transform the horizontal and human-centered networks of relations among other concepts, connecting them to a vertical and transcendent point of reference, namely Allah as the focal concept. Consequently, this study argues that the fundamental transformation in Qurʾānic semantics occurs not within the contents of individual concepts themselves, but within the system of bridge terms that reorganizes the relationships among them. Through qualitative analysis and conceptual analysis, the study demonstrates that the new worldview constructed by the Qurʾān is shaped to a considerable extent by the network of divine reference and legitimacy established through these terms.
Keywords: Qurʾānic Semantics, Conceptual Transformation, Bridge Terms, ʿIlm, Waḥy, Tilāwah, Idhn.

TASAVVUFUN KOZMİK İNSAN ANLAYIŞI VE MODERN İNSAN FELSEFESİ BAĞLAMINDA İNSAN-DOĞA İLİŞKİSİ

THE HUMAN–NATURE RELATIONSHIP IN THE CONTEXT OF SUFI COSMIC HUMAN UNDERSTANDING AND MODERN HUMAN PHILOSOPHY

Dr. Buket Kayışlı ARKADAŞ
İnönü Üniversitesi, Fen Edebiyat Fakültesi, Felsefe Bölümü, Malatya, Türkiye.
ORCID ID: 0000-0002-1083-7002

ÖZET

Bu çalışmanın amacı, insan-doğa ilişkisinin felsefi temellerini tasavvufun kozmik insan anlayışı ile modern insan felsefesi arasında karşılaştırmalı bir düzlemde incelemektir. Çalışma, çağdaş ekolojik krizin yalnızca teknik, ekonomik ya da politik bir sorun olmadığını; insanın varlık, doğa, sorumluluk ve anlamla kurduğu ilişkinin dönüşümüyle doğrudan bağlantılı olduğunu ileri sürmektedir. Bu çerçevede araştırma, modern öznenin doğayı araçsallaştıran antroposentrik yaklaşımı ile tasavvuf düşüncesinde insanı kâinatla bütünlük içinde ele alan İnsan-ı Kâmil anlayışı arasındaki ontolojik ve etik farklılıkları ortaya koymayı hedeflemektedir.

Araştırmada nitel araştırma yaklaşımına dayalı karşılaştırmalı kavramsal analiz yöntemi kullanılmıştır. Çalışmanın veri alanını tasavvuf düşüncesinde insan, kâinat, halifelik, emanet, mizan ve İnsan-ı Kâmil kavramları ile modern insan felsefesinde özne, doğa, akıl, Kartezyen düalizm, antroposentrizm ve ekolojik kriz tartışmaları oluşturmaktadır. Bu nedenle çalışma herhangi bir saha örneklemine değil, felsefi ve teorik metinlerden oluşan kavramsal bir veri evrenine dayanmaktadır. İnceleme sürecinde ilgili kavramlar, insanın doğa karşısındaki konumu, doğaya atfedilen değer, sorumluluk biçimi ve etik sonuçlar bakımından analiz edilmiştir.

Analiz sonucunda modern insan felsefesinin, özellikle doğayı insan aklı ve çıkarı doğrultusunda yönetilebilir bir nesne olarak konumlandırdığı; bu yaklaşımın doğanın kutsallıktan, anlamdan ve içsel değerden uzaklaştırılmasına zemin hazırladığı görülmüştür. Buna karşılık tasavvuf düşüncesinde insan, kâinatın dışında veya üzerinde değil; onunla ontolojik bağ içinde bulunan, ilahî isim ve sıfatların tecellisini taşıyan sorumlu bir varlık olarak ele alınmaktadır. İnsan-ı Kâmil anlayışı, doğaya egemen olmayı değil, emanet bilinciyle dengeyi korumayı merkeze almaktadır. Çalışmanın temel bulgusu, tasavvufun kozmik insan anlayışının modern antroposentrik özne anlayışına karşı alternatif bir etik ve ontolojik zemin sunduğudur. Sonuç olarak çalışma, insan-doğa ilişkisinin yeniden düşünülmesinde tasavvufî perspektifin çağdaş çevre etiği tartışmalarına özgün bir katkı sağlayabileceğini göstermektedir.

Anahtar Kelimeler: Tasavvuf, İnsan-ı Kâmil, Modern İnsan Felsefesi, İnsan-Doğa İlişkisi, Ekolojik Etik.

ABSTRACT

The aim of this study is to examine the philosophical foundations of the human–nature relationship through a comparative perspective between the Sufi understanding of the cosmic human and modern human philosophy. The study argues that the contemporary ecological crisis should not be regarded merely as a technical, economic, or political problem. Rather, it is closely connected with the way human beings understand existence, nature, responsibility, and meaning. Within this framework, the research seeks to reveal the ontological and ethical differences between the anthropocentric orientation of the modern subject, which tends to instrumentalize nature, and the Sufi doctrine of the Perfect Human, which situates the human being within a meaningful cosmic order.

The study is designed as a qualitative inquiry based on comparative conceptual analysis. Its data field consists of key concepts related to Sufi thought, such as human being, cosmos, vicegerency, trust, balance, and the Perfect Human, as well as central concepts in modern human philosophy, including subjectivity, nature, reason, Cartesian dualism, anthropocentrism, and ecological crisis. Accordingly, the study does not rely on an empirical field sample; instead, it is grounded in a conceptual and theoretical corpus. The analysis focuses on how each intellectual framework defines the position of the human being in relation to nature, the value attributed to the natural world, the meaning of responsibility, and the ethical implications that emerge from these assumptions.

The analysis indicates that modern human philosophy, particularly through its subject-centered and dualistic tendencies, has often represented nature as a controllable object to be organized according to human reason and interest. This orientation has contributed to the loss of nature's sacred, meaningful, and intrinsic value. In contrast, Sufi thought does not place the human being outside or above the cosmos, but understands the human as a responsible being whose existence is ontologically connected with the universe. The doctrine of the Perfect Human emphasizes not domination over nature, but the preservation of balance through the consciousness of trust and responsibility. The main finding of the study is that the Sufi understanding of the cosmic human offers an alternative ethical and ontological ground against the anthropocentric model of modern subjectivity. In conclusion, the study suggests that the Sufi perspective may provide a significant and original contribution to contemporary debates on environmental ethics and the reconstruction of the human–nature relationship.

Keywords: Sufism, Perfect Human, Modern Human Philosophy, Human–Nature Relationship, Ecological Ethics.

A COMPARATIVE ASSESSMENT OF ALTERNATIVE METHODS FOR ESTIMATING THE NON-OBSERVED ECONOMY

Ina ZELA
Mediterranean University of Albania Faculty of Economic Sciences, Department of Economics and Development Tirana, Albania
ORCID ID: 0009-0000-8469-4326

Abstract
The Non-Observed Economy (NOE) encompasses a broad spectrum of economic activities that escape full registration in official national accounts, including informal production, underground transactions, and illegal activities. Its accurate measurement is fundamental to the integrity of macroeconomic statistics, the design of effective fiscal and labour market policies, and the cross-country comparability of national income estimates. Despite decades of methodological development, no single approach has achieved universal acceptance, and the comparative strengths and limitations of competing methods remain a live debate in the empirical and theoretical literature. This paper provides a structured comparative analysis of four principal indirect methods for estimating the NOE: the physical input approach based on electricity consumption, the monetary aggregates approach based on the cash-to-deposit ratio, the monetary transactions approach and the Multiple Indicators Multiple Causes (MIMIC). Each method is examined with respect to its theoretical foundations, data requirements, underlying assumptions, scope of coverage, and analytical limitations. The comparative analysis reveals that no method is universally superior; each captures a distinct dimension of the NOE and operates under assumptions that may be more or less plausible depending on country-specific institutional, structural, and data conditions. The paper argues that the combination of complementary approaches offers the most robust analytical strategy, particularly for transition and developing economies characterised by volatile informal sectors and constrained data environments.
Keywords: Non-Observed Economy; electricity consumption method; cash-to-deposit ratio; monetary transactions; MIMIC model; methodological comparison.

A REVIEW OF OPEN-SOURCE INTEGRATED LIBRARY SYSTEMS AND SUSTAINABLE LIBRARY SERVICES IN NIGERIAN UNIVERSITIES

Atulomah Bola Christie (PhD)
Olusegun Olanrewaju Library
The Federal Polytechnic Ilaro, now Federal University of Technology Ilaro, Ogun State, Nigeria.

Kumoye Daniel Olalekan
Olusegun Olanrewaju Library
The Federal Polytechnic Ilaro, now Federal University of Technology Ilaro, Ogun State, Nigeria.

ABSTRACT
Nigerian university libraries are increasingly expected to deliver high-quality, user-focused services while operating under persistent constraints such as limited funding, inadequate ICT infrastructure, staffing shortages, and uneven digital literacy among stakeholders. Integrated Library Systems (ILS) provide essential functionality for acquiring, cataloguing, circulating, managing serials, and supporting digital resources. However, many libraries in Nigeria continue to rely on costly proprietary systems or remain partially automated, limiting interoperability, scalability, and long-term sustainability. This paper reviews the state of open-source Integrated Library Systems in Nigerian universities and examines their relevance to building sustainable library services. The review synthesizes literature on open-source ILS options (including systems such as Koha and related platforms), prevailing implementation challenges, and contextual factors affecting adoption—such as infrastructure deficits, data migration issues, procurement and policy environments, training needs, and governance structures. The paper proffers practical solutions for improving adoption and sustainability, including stronger institutional collaboration, capacity building, adoption of shared hosting and consortia models, local customization guided by user requirements, development of sustainability frameworks, and improved policy support for digital transformation. The review concludes that open-source ILS can strengthen library service continuity, enhance access and discovery, promote interoperability, and reduce lifecycle costs, if universities invest in governance, infrastructure, training, and change management.
Keywords: open source, integrated library system, Koha, sustainable library services, Nigerian universities, digital transformation, library automation

INFORMATION LITERACY SKILLS AND THE MANAGEMENT OF FAKE NEWS AMONG UNIVERSITY STUDENTS IN THE POST-TRUTH ERA

Bola Christie Atulomah, PhD

Odumade Adepero Olajumoke

ABSTRACT

The proliferation of digital technologies and social media platforms has significantly transformed information creation, dissemination, and consumption. While these developments have enhanced access to information, they have also facilitated the rapid spread of misinformation and fake news. University students, who rely heavily on online information for academic and personal purposes, are increasingly exposed to misleading content. This study investigates the information literacy skills of university students and their ability to manage fake news in the post-truth era. Specifically, the study assessed students' information literacy competencies, determined their exposure to fake news, examined the strategies employed in verifying information, and explored the role of academic libraries in combating misinformation. A descriptive survey research design was adopted. Data were collected through structured questionnaires and focus group discussions among undergraduate students from selected universities. Findings revealed that although most students possessed basic information literacy skills, significant gaps existed in evaluating information credibility and identifying misinformation. Social media emerged as the major source of fake news exposure. Fact-checking websites, consultation of multiple sources, and verification through authoritative platforms were identified as common verification strategies. The study further established that library-led information literacy programmes significantly improved students' ability to identify and manage fake news. The study recommends strengthening information literacy instruction within university curricula and enhancing library initiatives aimed at combating misinformation

Keywords: Information literacy, fake news, misinformation, university students, academic libraries, post-truth era.

BLEACHING OF KAOLINITE MINERAL TO ENHANCE WHITENESS AND REDUCE IRON OXIDE CONTENT

Bui Xuan Vuong
Faculty of Natural Sciences Education, Sai Gon University, 273 An Duong Vuong Street, Cho Quan Ward, Ho Chi Minh City, 700000, Vietnam

ABSTRACT
Kaolinite is an important raw material widely used in ceramic, paper, paint, and functional material industries. However, the presence of iron oxides significantly reduces its whiteness and overall quality, thereby limiting its application in fields requiring high-purity materials. In this study, a bleaching method using oxalic acid combined with ultrasonic treatment was investigated to remove iron-bearing compounds and improve the color properties of kaolinite. Kaolinite samples were treated with different concentrations of oxalic acid under ultrasonic irradiation followed by heat treatment. The treated materials were characterized using the CIE L*a*b* color system, X-ray diffraction (XRD), X-ray fluorescence (XRF), Fourier-transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), and energy-dispersive X-ray spectroscopy (EDX). The results demonstrated that the combined oxalic acid–ultrasonic treatment effectively reduced the iron oxide content while significantly enhancing the whiteness of the kaolinite without altering the characteristic crystal structure of kaolinite. SEM and EDX analyses revealed that the surface morphology remained largely unchanged after treatment, whereas the surface Fe content decreased markedly. The proposed method shows considerable potential for improving the quality of kaolin for ceramic manufacturing and other industrial applications requiring high-whiteness raw materials.
Keywords: Kaolinite; Oxalic acid; Ultrasonic treatment; Bleaching; Whiteness.

AEROELASTIC DESIGN OF HIGH-ASPECT-RATIO WINGS INCORPORATING STRUCTURAL BATTERIES

Okaili Oumaima
Laboratory for Research in Engineering, Logistics and Energy (LARILE), National Higher School of Electricity and Mechanics, Hassan II University, Casablanca, Morocco.
Mohammed VI International Academy of Civil Aviation.

Rafii Mohamed
Laboratory for Research in Engineering, Logistics and Energy (LARILE), National Higher School of Electricity and Mechanics, Hassan II University, Casablanca, Morocco.
Mohammed VI International Academy of Civil Aviation.

Hattabi Mohamed
Laboratory for Research in Engineering, Logistics and Energy (LARILE), National Higher School of Electricity and Mechanics, Hassan II University, Casablanca, Morocco.
Mohammed VI International Academy of Civil Aviation.

ABSTRACT
Aviation, in its traditional form, has significantly contributed towards the greenhouse effect and pollution, emphasizing the necessity of adopting a sustainable approach. The current scientific review presents the latest advancements in electric and hybrid aviation, focusing on problems associated with aerodynamics, aeroelasticity, and structure batteries. Main themes include wing properties, multidisciplinary optimization, and technical/energy considerations. On analyzing existing studies through a literature review, the paper offers information regarding limitations of existing technology and research gaps, thus laying foundation for future development of better airplanes.
Keywords: sustainable aeronautics – electric and hybrid aircraft – aerodynamic optimization – aerodynamics and aeroelasticity – structural batteries – active wing control.

DYNAMICS OF SMALL PELAGIC FISH AND PLASTIC DEBRIS DISTRIBUTION IN MARINE ECOSYSTEMS

Ouassila Riouchi
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

Khalid Elkalay
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

Mourad Baghour
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

ABSTRACT
Small pelagic fish play a crucial role in marine ecosystems, linking lower and higher trophic levels. Their distribution and seasonal movements are strongly influenced by environmental factors such as water temperature, food availability, ocean currents, and upwelling processes. Similarly, plastic debris is transported and accumulated by oceanic and coastal currents, leading to the formation of pollution hotspots in areas where small pelagic fish frequently feed and aggregate. The spatial overlap between fish populations and plastic-contaminated zones increases the risk of exposure to plastic particles and associated pollutants. Understanding the relationship between small pelagic fish dynamics and plastic debris distribution is essential for assessing ecological risks, supporting sustainable fisheries management, and developing effective marine pollution mitigation strategies.
Keywords : Small Pelagic Fish; Plastic Debris; Marine Pollution; Fish Distribution; Ocean Currents; Sustainable Fisheries.

INGESTION OF MICROPLASTICS BY FISH

Ouassila Riouchi
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

Khalid Elkalay
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

Mourad Baghour
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco
2OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

ABSTRACT
Microplastics have become a major environmental concern in aquatic ecosystems. Fish ingest microplastics through various pathways, including direct consumption from the water column, accidental ingestion while feeding on plankton, and trophic transfer through contaminated prey. Small pelagic fish are particularly vulnerable due to their filter-feeding and active feeding behaviors. Once ingested, microplastics may accumulate in the digestive tract, causing physical damage, reduced feeding efficiency, and physiological stress. Understanding the mechanisms of microplastic ingestion is essential for assessing their ecological impacts and potential risks to marine food webs and human health.
Keywords : Microplastics; Fish Ingestion; Marine Pollution; Trophic Transfer; Aquatic Ecosystems.

EVALUATING THE EFFECTIVENESS OF INDIA'S REGULATORY RESPONSE TO SINGLE-USE PLASTICS: STRATEGIES FOR ADAPTIVE CAPACITY BUILDING AND FUTURISTIC TRENDS

Pritheeraj Sen
Research Scholar, Amity University Kolkata, Department of Law
ORCID:0000-0002-1499-1170, 9874213601

Dr. Mainan Ray
Associate Professor, Amity University Kolkata, Department of Law

Dr. Caesar Roy
Surendranath law College, Department of Law

ABSTRACT
The rapidly growing environmental degradation and adverse impacts on public health and wildlife due to the escalating usage of single-use plastics have prompted urgent regulatory interventions worldwide with India being one of the major players through its ambitious policy initiatives. This research study critically evaluates the effectiveness of India's regulatory measures targeting single-use plastics, thus focusing on policy formulations, innovation models, and their ground-level implementations. While examining key frameworks including Plastic Waste Management Rules 2016 and its subsequent amendments and focusing on the nationwide 2022 ban imposed on selected single-use plastic items, it tends to highlight both progress achieved and persistent systematic shortcomings. This study while exploring innovative strategies adopted across various states by industry stakeholders including alternatives to plastics, circular economy models, and Extended Producer responsibility frameworks, aims to uncover the practical challenges like inconsistent policy implementation among states, inadequate infrastructure for waste management, limited consumer awareness and loopholes in monitoring mechanisms which are found to undermine the overall effectiveness of frameworks and strategies ultimately. Through a combination of policy analysis and case studies, this paper provides a holistic understanding of the shortcomings of India's anti-SUP initiatives with the intent of strengthening regulatory frameworks for fostering sustainable behavioural changes. Ultimately, the study offers the need for strategic recommendations to bridge the regulatory and implementation gaps and underscores the enforcement of comprehensive, adaptive, and inclusive policy approaches to accelerate India toward a circular economy to mitigate the long-term impacts of single-use plastics.
Keywords: Single-use plastics, waste management, policy framework, legislation, consumer awareness.

BIOLOGICAL TRAITS OF *GLOSSOGOBIUS GIURIS* (HAMILTON, 1822) IN A WETLAND ECOSYSTEM (NW BANGLADESH): IMPLICATIONS FOR SUSTAINABLE FISHERIES MANAGEMENT

Md. Sumon Hossain
Department of Fisheries, University of Rajshahi, Rajshahi 6205, Bangladesh

Sadia Islam
Department of Fishing and Post-Harvest Technology, Chattogram Veterinary and Animal Sciences University, Chattogram 4225, Bangladesh

Shakil Ahmed
Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh

Tariq-Al Kasif
Department of Fisheries, Jamalpur Science and Technology University, Jamalpur 2012, Bangladesh

ABSTRACT
Glossogobius giuris, a freshwater goby, is highly prevalent in freshwater habitats across Bangladesh. The present research investigates the population structure, growth patterns, and biological aspects of *Glossogobius giuris* (Hamilton, 1822) in the *Beel* Kumari wetland ecosystem of Northwestern Bangladesh. A total number of 542 specimens were obtained throughout several field studies in 2023, excluding the spawning season from June to August, employing fish harvesting gill nets. Biometric studies were conducted to assess the length frequency distributions, length-weight relationships, and length-length relationships. Additionally, the allometric condition factor (K_A), Fulton's condition factor (K_F), and relative condition index (K_R) was determined. The growth of *G. giuris* was demonstrated as a negative allometric growth (b= 2.87) and their condition factors suggested a comparatively adequate nutrition, and healthy group of individuals (K_A = 0.0119±0.001, K_F = 0.9597±0.110; K_R =1.0162±0.113). The form factor ($a_{3.0}$ = 0.0078) exhibited that this species successfully adapted to the wetland habitat. There was a significant linear relationship between total length and standard length (p<0.0001). The minimal size at sexual maturity (L_m) of 5.4 cm is lowest ever recorded globally and might result from ecological disruption. W_R values varied between 73.504 to 148.87, indicating ideal growth conditions with specific seasonal variations. These findings provide a robust baseline of knowledge on the health status and growth trends of *G. giuris* in *Beel* Kumari, while also highlight the escalating ecological pressures triggered by human activities on wetland biodiversity and tropical fisheries in the region. Consequently, there is an urgent need for extremely effective conservation techniques to mitigate further decline and probable extinction of fish species within this environment.
Keywords: Condition factor, Form factor, Growth pattern, Population structure, Sustainable fisheries.

NOVEL PENTAFUNCTIONAL EPOXY POLYMER: PREPARATION, STRUCTURAL AND OPTICAL CHARACTERIZATION

El Fengouch
1 Laboratory of Material Physics and Subatomic, Faculty of Sciences, Ibn-Tofail University, BP 242, 14000 Kenitra, Morocco

N. Lahlouhi
1 Laboratory of Material Physics and Subatomic, Faculty of Sciences, Ibn-Tofail University, BP 242, 14000 Kenitra, Morocco
Laboratory of Spectroscopy, Molecular Modeling, Materials, Nanomaterials, Water and Environment, Mohammed V University, Rabat, Morocco
.

R. Hsissou
Laboratory of Organic Chemistry, Bioorganic and Environment, Chemistry Department, Faculty of Sciences, Chouaib Doukkali University, BP 20, 24000, El Jadida, Morocco

L.C. Costa
I3N and Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal

M. El Hasnaoui
1 Laboratory of Material Physics and Subatomic, Faculty of Sciences, Ibn-Tofail University, BP 242, 14000 Kenitra, Morocco

ABSTRACT
A new epoxy polymer pentaglycidyl ether pentabisphenol A of phosphorus (PGEPBAP), was successfully synthesized and characterized. The polymer was prepared through a crosslinking process leading to the formation of an amorphous network. The originality of this work lies in the development of a new epoxy polymer with potential applications in optical and optoelectronic fields. The structural properties of the synthesized polymer were investigated using X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR) and Raman spectroscopy. XRD analysis confirmed the predominantly amorphous nature of the material, while FTIR and Raman spectra revealed the characteristic functional groups and vibrational modes of the polymer. The optical behavior of PGEPBAP was studied using UV–Visible spectroscopy. The optical band gap and refractive index were determined using the Tauc model and the Kubelka–Munk function. The obtained results demonstrate that the polymer exhibits interesting optical characteristics related to its molecular structure and crosslinked nature, suggesting that the newly developed PGEPBAP polymer is a promising candidate for future optical and optoelectronic applications.
Keywords:New epoxy polymer; PGEPBAP; UV–Visible spectroscopy; XRD analysis; FTIR spectroscopy; Raman spectroscopy.

WAITING FOR THE TRUCK: AN EVALUATION OF THE PSYCHOLOGICAL EFFECTS OF DELAYED DELIVERIES ON CUSTOMERS AND SUPPLY CHAIN PERSONNEL IN NIGERIA

SONDE Dimeji Rotimi
Department of Transport Management, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria

Abstract
The logistics and supply chain industry is essential to economic growth and customer satisfaction in Nigeria. However, delayed deliveries remain a persistent challenge due to factors such as poor road conditions, traffic congestion, vehicle breakdowns, and operational inefficiencies. These delays often create psychological strain for both customers awaiting deliveries and supply chain personnel responsible for meeting delivery schedules. The objective of the study was to evaluate the psychological effects of delayed deliveries on customers and employees and determine their implications for customer loyalty and employee productivity. A descriptive survey research design was adopted, and data were collected through structured questionnaires administered to 250 customers and supply chain personnel from selected logistics firms in Nigeria. Descriptive statistics and regression analysis were used to analyze the data collected. The findings revealed that delayed deliveries significantly increase customer anxiety, frustration, and loss of confidence in logistics service providers. The study further found that poor communication regarding delivery status aggravates the psychological effects experienced by both groups. The study concludes that delayed deliveries have significant psychological and organizational consequences that negatively affect customer retention and workforce performance. It is therefore recommended that logistics firms adopt real-time tracking technologies and stress-management programmes to reduce the adverse effects of delivery in Nigeria.
Keywords: Delayed Deliveries, Customer Anxiety, Employee Stress, Supply Chain Performance, Logistics Operations.

BLEACHING OF KAOLINITE MINERAL TO ENHANCE WHITENESS AND REDUCE IRON OXIDE CONTENT

Bui Xuan Vuong
Faculty of Natural Sciences Education, Sai Gon University, 273 An Duong Vuong Street, Cho Quan Ward, Ho Chi Minh City, 700000, Vietnam

ABSTRACT
Kaolinite is an important raw material widely used in ceramic, paper, paint, and functional material industries. However, the presence of iron oxides significantly reduces its whiteness and overall quality, thereby limiting its application in fields requiring high-purity materials. In this study, a bleaching method using oxalic acid combined with ultrasonic treatment was investigated to remove iron-bearing compounds and improve the color properties of kaolinite. Kaolinite samples were treated with different concentrations of oxalic acid under ultrasonic irradiation followed by heat treatment. The treated materials were characterized using the CIE L*a*b* color system, X-ray diffraction (XRD), X-ray fluorescence (XRF), Fourier-transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), and energy-dispersive X-ray spectroscopy (EDX). The results demonstrated that the combined oxalic acid–ultrasonic treatment effectively reduced the iron oxide content while significantly enhancing the whiteness of the kaolinite without altering the characteristic crystal structure of kaolinite. SEM and EDX analyses revealed that the surface morphology remained largely unchanged after treatment, whereas the surface Fe content decreased markedly. The proposed method shows considerable potential for improving the quality of kaolin for ceramic manufacturing and other industrial applications requiring high-whiteness raw materials.
Keywords: Kaolinite; Oxalic acid; Ultrasonic treatment; Bleaching; Whiteness.

AEROELASTIC DESIGN OF HIGH-ASPECT-RATIO WINGS INCORPORATING STRUCTURAL BATTERIES

Oumaima OKAILI
Laboratory for Research in Engineering, Logistics and Energy (LARILE), National Higher School of Electricity and Mechanics, Hassan II University, Casablanca, Morocco.

Mohamed RAFII
Mohammed VI International Academy of Civil Aviation, Morocco.

Mohamed HATTABI
Laboratory for Research in Engineering, Logistics and Energy (LARILE), National Higher School of Electricity and Mechanics, Hassan II University, Casablanca, Morocco.

Abstract
Aviation, in its traditional form, has significantly contributed towards the greenhouse effect and pollution, emphasizing the necessity of adopting a sustainable approach. The current scientific review presents the latest advancements in electric and hybrid aviation, focusing on problems associated with aerodynamics, aeroelasticity, and structure batteries. Main themes include wing properties, multidisciplinary optimization, and technical/energy considerations. On analyzing existing studies through a literature review, the paper offers information regarding limitations of existing technology and research gaps, thus laying foundation for future development of better airplanes.
Keywords: sustainable aeronautics – electric and hybrid aircraft – aerodynamic optimization – aerodynamics and aeroelasticity – structural batteries – active wing control.

TRANSFER OF MICROPLASTICS FROM THE MARINE ENVIRONMENT TO HUMANS THROUGH THE FOOD CHAIN

Ouassila Riouchi
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco

Khalid Elkalay
Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), School of Technology Essaouira, Cadi Ayyad University, Essaouira, Morocco

Mourad Baghour
OLMAN- BGPE, Nador Multidisciplinary Faculty (FPN), Nador, Mohammed 1st University, Morocco.

ABSTRACT
Microplastics are widespread contaminants in marine ecosystems and can enter the food chain through various pathways. These particles are first ingested by plankton and other small marine organisms, which are then consumed by fish and other higher trophic-level species. Through this process, microplastics and their associated contaminants are transferred and accumulated along the marine food web. Humans may be exposed to microplastics through the consumption of seafood, particularly fish and shellfish. This transfer raises concerns regarding food safety and potential health effects, including inflammation, oxidative stress, and exposure to hazardous chemicals adsorbed on plastic particles. Understanding the movement of microplastics from the marine environment to humans is essential for evaluating ecological and public health risks and for developing effective strategies to reduce plastic pollution.
Keywords : Microplastics; Marine Food Chain; Seafood Consumption; Human Exposure; Marine Pollution; Food Safety.

ROLE OF NEEM LEAF EXTRACT IN THE MORPHO-ANATOMICAL AND PHYSIOLOGICAL RESPONSE OF PENNISETUM GLAUCUM (L.) R. BR. UNDER WATER DEFICIT CONDITIONS

Sania Abid
Department of Botany, Division of Science and Technology, University of Education, Lahore, Pakistan

Syed Mohsan Raza Shah
Department of Botany, Division of Science and Technology, University of Education, Lahore, Pakistan

Arshia Zia
Department of Botany, University of Agriculture, Faisalabad, Pakistan

ABSTRACT
Drought stress is among the most severe abiotic stressors, limiting crop yields worldwide, particularly in arid and semi-arid regions where pearl millet (*Pennisetum glaucum*) is a valuable staple crop. The current experiment was conducted to determine the efficacy of foliar application of neem (*Azadirachta indica*) leaf extract in alleviating the effects of drought stress in two pearl millet varieties, YBH-278 and YBS-98, under controlled and 50% field-capacity conditions. The purpose of the experiment was to measure the total physiological, morphological, and anatomical effects of drought stress and neem-based treatments. Findings indicated that the plant performance was greatly affected by drought stress, which decreased photosynthetic pigments. Further, growth-related variables were highly diminished where there was water scarcity, such as plant height, leaf area, root length, biomass accumulation, and yield components. Drought stress also caused oxidative damage, as evidenced by the presence of high levels of hydrogen peroxide (H_2O_2), malondialdehyde (MDA), and osmolytes, particularly proline and free amino acids, and indicated a disrupted cellular homeostasis. Foliar application of the neem leaf extract had a positive impact in reducing the harmful effects of drought stress in a concentration-dependent fashion. Among the treatments, 10% NE continuously had the highest strength in enhancing all the parameters under study, followed by 5% NE, and water foliar treatment had the lowest strength. The application of neem had a great impact on raising the content of photosynthetic pigments, suggesting better protection of the photosynthetic pigments. The morphological features were significantly improved at NE. In addition to physiological impacts, drought stress and neem treatments had considerable impacts on anatomical changes in root, stem, and leaf structures. Treatment with neem, particularly at maximum neem extract concentration (10%), enhanced such important anatomical features as the epidermal thickness, the size and number of metaxylem, the cortical cell area, and expansion of the pith. They showed evidence of varietal differences, and YBH-278 had better drought tolerance characterized by high photosynthetic efficiency, low oxidative damage, and improved response to NE application (10%). In comparison, YBS-98 had a greater sensitivity to drought and oxidative stress and relied on osmolyte-based defense mechanisms.
Keywords: Drought, Neem Extract, *Pennisetum glaucum*, Antioxidants

LIGNOCELLULOSIC SAWDUST AS A LOW-COST ADSORBENT FOR THE REMOVAL OF BRILLIANT GREEN AND BEMACID BLUE

Hanane Mahroug
Department of Hydraulic, Institute of Sciences and Technology, University centre of Maghnia, Algeria.
Laboratory of Separation and Purification Technologies in the Department of Chemistry, at Abou Bekr Belkaid University, POBox 119 - Tlemcen, Algeria.

Khalil Oukebdane
Laboratory of Separation and Purification Technologies in the Department of Chemistry, at Abou Bekr Belkaid University, POBox 119 - Tlemcen, Algeria.

Cherifa Hakima Memou
Laboratory of Physical and Macromolecular Organic Chemistry, Faculty of Exact Science, chemistry department, Djillali Liabes University, Sidi Bel Abbes 22000, Algeria

Fatima Zahra Benhachem
Laboratory of Separation and Purification Technologies in the Department of Chemistry, at Abou Bekr Belkaid University, POBox 119 - Tlemcen, Algeria.
Department of Industrial Engineering, Faculty of Technology, University of Tlemcen, Algeria
ORCİD: 0000-0001-5383-2984

ABSTRACT
This study explores the use of wood sawdust, a lignocellulosic and low-cost material, as an adsorbent for the removal of two dyes, Brilliant Green and Bemacid Blue, from aqueous solutions. Batch experiments were conducted to evaluate the effect of key parameters, including adsorbent dose, particle size (granulometry), contact time (kinetics), adsorption isotherms, and temperature. The results showed that sawdust exhibits good adsorption capacity for both dyes, with removal efficiency depending on the studied conditions. Kinetic and isotherm analyses indicated favorable adsorption behavior, while temperature effects provided insight into the nature of the process. These findings highlight the potential of lignocellulosic waste as an effective and eco-friendly solution for dye removal in wastewater treatment.
Keywords: Lignocellulosic, dye removal, Kinetic, isotherm, adsorption capacity

RECONCEPTUALIZING HERBAL KNOWLEDGE: INDIGENOUS PLANT-DERIVED REMEDIES FOR COVID-19 IN INDIA

K. R. Padma
Department of Biotechnology, Sri Padmavati Mahila Visvavidyalayam (Women's University), Tirupati,
ORCID: 0000-0002-6783-3248

K.R.Don
Reader, Department of Oral Pathology and Microbiology, Sree Balaji Dental College and Hospital, Bharath Institute of Higher Education and Research (BIHER), Bharath University, Chennai, Tamil Nadu, India
ORCID: 0000-0003-3110-8076.

ABSTRACT
Traditional Indian medicine encompasses the practices of Ayurveda, Siddha, Unani, and Homeopathy, collectively providing a comprehensive understanding of medicinal plants and their various pharmacological properties. These encompass antiviral, immunomodulatory, anti-inflammatory, and antioxidant properties, rendering them attractive options for the management of COVID-19 and other respiratory infections, including SARS, Influenza, and Respiratory Syncytial Virus (RSV). This review examines current research and registered clinical studies on the application of traditional Indian herbal medicines in treating COVID-19. Ethnopharmacological research indicates that natural chemicals derived from these plants may assist in both prevention and treatment. Principal herbs under examination comprise *Cinchona*, *Curcuma longa* (turmeric), *Nigella sativa* (black seed), *Azadirachta indica* (neem), *Tinospora cordifolia* (giloy), *Allium sativum* (garlic), *Oroxylum indicum*, *Punica granatum* (pomegranate), *Cocos nucifera* (coconut), *Mangifera indica* (mango), *Uvaria* species, *Artemisia annua*, and *Allium cepa* (onion). This review facilitates the advancement of innovative natural herbal mixtures as alternative treatments. It underscores the potential of these formulations in the development of immunopotentiators, herbal or Ayurvedic antiviral medications, antibacterial and antiviral medicines, and their utilization in the prevention and treatment of COVID-19. This review advocates for the creation of novel herbal formulations as alternative therapies, emphasizing their promise as immunopotentiators and antiviral agents in the prevention and management of COVID-19.
Keywords: *Artemisia annua,* COVID-19, Immunopotentiators, Indigenous plants, Natural herbal mixtures, Ayurveda.

THE IMPACT OF SECURITY CHALLENGES ON EMERGING TECHNOLOGY IN MATHEMATICS, ENGINEERING, TECHNOLOGY, AND SCIENCE (METS) EDUCATION LECTURERS IN UNIVERSITIES

Dr. Bashir Ahmad Usman YANKUZO
Science Education Department, Federal University of Technology, Minna, Niger State, Nigeria.

Alhassan Yunusa ALKALI
Science Education Department, Federal University of Technology, Minna, Niger State, Nigeria.

Mohammed JIBRIL
Welding and Fabrication Engineering Department, Minna Institute of Technology and Innovations, Niger State, Nigeria.

Abubakar A. EJIKO
Niger State Polytechnic of Emerging Technology, Nigeria.

Mohammed MAISHERA
Niger State Polytechnic of Emerging Technology, Nigeria.

ABSTRACT
This study investigates the impact of security challenges on the adoption and utilization of emerging technologies among Mathematics, Engineering, Technology, and Science (METS) education lecturers in universities. The increasing rate of insecurity, including terrorism, banditry, kidnapping, cybercrime, and infrastructural vandalism, has significantly disrupted academic activities in higher education institutions. The study adopted a descriptive survey research design involving 120 METS lecturers selected through stratified random sampling. Data were collected using a structured questionnaire and analyzed using mean and standard deviation. Findings revealed that insecurity significantly limits access to digital infrastructure, reduces lecturers' willingness to integrate emerging technologies, and negatively affects digital competency development. The study concludes that security challenges constitute a major barrier to technological advancement in higher education and recommends strategic interventions such as improved campus security, investment in digital infrastructure, and capacity-building programs.
Keywords: Security challenges, emerging technology, METS education, digital competency, university lecturers

OPTIMIZING EFFICIENCY IN CROSS-BORDER TRADE: A TRANSACTION COST ECONOMICS APPROACH TO ONLINE DISPUTE RESOLUTION (ODR)

Tuhina Sinha, Assistant Professor Grade–II
Amity University Jharkhand, Jharkhand, India
ORCID: 0009-0001-3937-4611

ABSTRACT

This paper applies Transaction Cost Economics (TCE) to assess how Online Dispute Resolution (ODR) enhances economic efficiency in cross-border e-commerce by lowering the ex-ante bargaining and ex-post enforcement costs that often make low-value, high-volume international transactions unviable. Using a mixed-methods approach that combines doctrinal legal analysis with secondary empirical analysis of institutional data (notably European Commission reports on the EU ODR Platform, 2016–2022, and UNCITRAL technical materials), the study evaluates search, bargaining, and enforcement costs across traditional litigation, arbitration, and digital ODR systems. The findings show that conventional cross-border dispute resolution routinely generates transaction costs that exceed disputed amounts, deterring market participation; by contrast, ODR reduces information asymmetry and search costs through centralized multilingual portals and automated routing, cuts bargaining frictions via asynchronous communication, automated negotiation tools and streamlined evidence exchange, and mitigates enforcement burdens through reputational sanctions and integrated financial mechanisms (escrow and chargebacks). Empirical EU ODR metrics (over 150,000 complaints 2016–2021; approximately 45% cross-border; a statutory ADR resolution target under 90 days; and an estimated 40% direct settlement rate following initial platform notification) indicate that platform architecture deters opportunism and shortens resolution timelines. Remaining inefficiencies arise from inconsistent global enforceability of electronically mediated settlements and uneven domestic recognition of digital arbitration agreements. The paper concludes that ODR functions as an institutional technology that internalizes transaction costs and enables economically viable cross-border participation for consumers and MSMEs and recommends harmonized international legal recognition and enforceability standards for digitally mediated dispute outcomes.

Keywords*:* Online Dispute Resolution (ODR), Transaction Cost Economics (TCE), Cross-border e-commerce, Enforcement and compliance, Alternative Dispute Resolution (ADR), EU ODR Platform, MSMEs and consumer disputes

UNCERTAINTY IN BUSINESS STRATEGY

Prof. Nuno BAPTISTA, PhD.
Polytechnic Institute of Leiria, Portugal
ORCID ID: 0000-0001-7130-0543

Prof. Mário ANTÃO, PhD.
Lusíada University, Portugal
ORCID ID: 0000-0003-4551-4737

Firmino ALMEIDA
Polytechnic Institute of Leiria

ABSTRACT
In increasingly volatile business environments, uncertainty has become a central challenge for strategic decision-making, organizational resilience, and long-term competitiveness. This paper examines how organizations manage uncertainty within business strategy, with particular attention to the distinction between measurable risk and broader forms of ambiguity in which outcomes and probabilities are difficult to determine. Based on a narrative literature review, the study synthesizes influential contributions from strategic management, dynamic capabilities theory, organizational learning, knowledge management, and environmental uncertainty research. The findings show that uncertainty management requires organizations to combine uncertainty-reduction mechanisms, such as information gathering, data analysis, market research, and environmental scanning, with uncertainty-tolerance capabilities, including flexibility, agility, learning orientation, and resource reconfiguration. Internal factors, such as leadership, organizational culture, structure, knowledge, and capabilities, interact with external factors, including technological change, market dynamics, regulation, geopolitical instability, and sustainability pressures. The paper argues that effective uncertainty management depends on continuous feedback loops that allow firms to monitor change, adapt strategies, and transform uncertainty into strategic opportunity. The study contributes to the literature by offering an integrative view of uncertainty management in business strategy and identifying future research directions, particularly regarding artificial intelligence, cognitive biases, sustainability, industry-specific uncertainty, and real-time strategic adaptation. For managers, the paper highlights the importance of scenario planning, agile decision-making, strategic foresight, and adaptive organizational cultures in sustaining competitive advantage under uncertainty.
Keywords: uncertainty management; business strategy; strategic adaptability; dynamic capabilities; organizational learning; strategic foresight

A SOCIAL CAPITAL APPROACH TO STUDY COOPETITION INVOLVING SMES.

Prof. Nuno BAPTISTA, PhD.
Polytechnic Institute of Leiria, Portugal
ORCID ID:0000-0001-7130-0543

Prof. Mário ANTÃO, PhD.
Lusíada University, Portugal
ORCID ID: 0000-0003-4551-4737

ABSTRACT
This paper aims to strengthen the theoretical rationale for applying social capital theory to the study of coopetition involving small and medium-sized enterprises. Although coopetition has been widely examined through game theory, network theory, the resource-based view and transaction cost economics, these perspectives do not fully capture the role of interpersonal relationships, trust, shared meanings and network embeddedness in enabling SMEs to cooperate and compete simultaneously. Drawing on Nahapiet and Ghoshal's multidimensional framework of social capital, this study conceptually examines how the structural, relational and cognitive dimensions of social capital contribute to coopetitive relationships among SMEs. The analysis is supported by a dual case study of two Portuguese technology-based SMEs, using data collected from public records and semi-structured interviews with the companies' CEOs. The findings suggest that the structural dimension of social capital facilitates access to resources and the mobilization of network ties, while sectorial organizations may act as brokers that support resource exchange and coordination among actors. The relational dimension enhances the quality of coopetitive relationships by fostering trust, reciprocity and reputation, thereby reducing the need for extensive contractual formalization and mitigating concerns related to opportunism. The cognitive dimension contributes to shared understanding, knowledge acquisition, market learning and legitimacy-building, particularly when SMEs enter new markets or collaborate with larger and international partners. The study contributes to coopetition literature by showing that social capital theory offers a valuable and underexplored lens for understanding how SMEs manage the tensions between cooperation and competition. It also highlights the importance of entrepreneurs' and managers' social networks as strategic resources that help SMEs overcome limitations in scale, reputation, knowledge and market access.
Keywords: coopetition; social capital; SMEs; trust; networks; technology firms

ILLUMINATING EXPERIENCE: THE ROLE OF LIGHT IN SHAPING EMOTIONAL AND PERCEPTUAL RESPONSES IN ARCHITECTURE

Melik Sami
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.
LACOMOFA Biskra laboratory. Algeria.

Khelil Sara
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

Tallal Abdel Karim Bouzir
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

ABSTRACT
Light is an essential element of architecture that goes way beyond practical lighting, significantly influencing the emotional and perceptual experiences of humans in the constructed spaces. This interdisciplinary research is a synthesis of the current literature in the areas of architecture, environmental psychology, and neuroscience to explore the effects of lighting conditions, both natural and artificial, on human emotions, perception of space, and well-being in architectural space. This article builds a theoretical framework of light-induced physiological processes (especially intrinsically photosensitive retinal ganglion cells [ipRGCs] and melanopsin signaling) and psychological and emotional reactions through integrative analysis of 45 peer-reviewed studies published between 2018 and 2025. The study defines the most important lighting parameters such as levels of illuminance, color temperature, spectral composition and directionality as paramount factors of spatial experience. Empirical evidence indicates that intelligently implemented lighting improves cognitive functioning, alleviates anxiety, promotes circadian synchrony, and enhances emotional functioning in various architectural typologies such as educational settings, medical settings, workplaces, and residential settings. The article has shown that lighting design is a key intermediary of the human space relationship and it is a physiological regulator, perceptual organizer and emotional amplifier. Some of the most important contributions are the creation of useful design rules between visual comfort and non-visual biological impact, and the suggestion of adaptive lighting systems that combine AI-driven technologies to maximize human-oriented results. The work makes light an essential element of evidence based architectural practice, that has implications on designing environments that are healthier and more restorative with regard to occupant well-being, and in responding to the demands of sustainability.
Keywords: architectural lighting, spatial perception, emotional response, circadian rhythms, melanopsin.

FRAGMENTATION AND CONTINUITY: RECONCILING CUBIST AESTHETICS WITH SPATIAL COHERENCE IN ARCHITECTURE

Melik Sami
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.
LACOMOFA Biskra laboratory. Algeria.

Khelil Sara
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria

Tallal Abdel Karim Bouzir
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

ABSTRACT:
This article deals with the structural dilemma which has plagued modern architectural discourse: the seemingly irreconcilable nature of fragmented, Cubist-influenced spatial structures and the human mental requirement of legible, coherent spaces. Although the discontinuous perspectives and a multiplicity of viewpoints of Cubism transformed the artistic practice of the twentieth century, their architectural implementation has produced spaces that question the phenomenological experience and practical utility. This study explores the challenges of making architectural projects harmonize the aesthetic and expressive strength of Cubist fragmentation with the spatial coherence using three analytical strategies that are complementary in approach (phenomenological embodiment, cognitive mapping, and parametric continuity strategies). The comparative case analysis of landmark works of Frank Gehry and Daniel Libeskild, augmented with current digital design practices, the research determines particular mechanisms, including visual hierarchies, material movements, rhythmic expression and algorithmic orchestration, which convert fragmented geometries into perceptual whole experiences. The study uses a mixed-method approach that integrates morphological research, space syntax analysis, eye tracking perception experiments, and computational modeling to determine the spatial legibility as well as experiential richness. The results indicate that the dichotomy between fragmentation and continuity is a fallacy; instead, architectures that are strategically designed with Cubist principles but with parametrically-informed design are capable of supporting both visual complexity and clarity of space. The article has some contribution to the theory of architecture by introducing a conceptual framework, namely, perceptual reconciliation by algorithmic hierarchy, which the author argues allows designers to exploit the benefits of generative complexity without losing the embodied coherence. Relevances to modern architectural practice, parametric design education and the new discipline of neuroarchitecture imply that digital technologies, and phenomenological sensitivity, are not hostile to each other but complementary when it comes to the spatial complexity of modern cities.
Keywords: Cubist aesthetics; spatial fragmentation; continuity in architecture; spatial coherence; perceptual integration.

COMPUTATIONAL MORPHOGENESIS IN ARCHITECTURE: PARAMETRIC STRATEGIES FOR INTEGRATING FORM AND STRUCTURAL LOGIC.

Melik Sami
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria. [2]LACOMOFA Biskra laboratory. Algeria.

Khelil Sara
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

Tallal Abdel Karim Bouzir
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

ABSTRACT
Computational morphogenesis is a revolutionary concept in modern architecture where the form generation and structural performance are merged by using algorithmic and parametric design systems. This essay critically analyzes the role of computational morphogenesis in the integrated design of architectural geometries and load-bearing systems beyond the traditional distinction between the process of aesthetic form-making and structural engineering. This study, based on the systematic review of the latest peer-reviewed literature and methodological frameworks, defines computational morphogenesis as the bidirectional process in which architectural form is generated through structural logic and at the same time achieves material efficiency and spatial expression. The paper synthesizes the developments in parametric modeling software (Rhinoceros, Grasshopper, Karamba3D), the generative algorithm, and finite element analysis as part of an integrated design process. The most important results show that morphogenetic methods can deliver significant gains in material efficiency (70 percent reduction in material consumption), structural performance optimization, and fabrication readiness with the use of evolutionary algorithms and multi-objective optimization. The study presents the unresolved problems related to the computational complexity, interdisciplinary communication, and scalability between digital prototypes and real constructions. The paper concludes that the computational morphogenesis, which is based on the biological principles but implemented by means of the digital technologies is a valuable step towards the performance based, materially effective, and formally expressive architecture. It is being developed in the future directions of integration with artificial intelligence, real-time adaptive design systems, and holistic sustainability frameworks that include environmental performance metrics.
Keywords: computational morphogenesis, parametric architecture, generative design, structural optimization, form-finding.

BRIDGING DIMENSIONS: METHODOLOGIES FOR CONVERTING TWO-DIMENSIONAL ABSTRACTION INTO THREE-DIMENSIONAL ARCHITECTURE

Melik Sami
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria. [2]LACOMOFA Biskra laboratory. Algeria.

Khelil Sara
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

Tallal Abdel Karim Bouzir
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

ABSTRACT
The possibility of translating two-dimensional abstract compositions into three-dimensional architectural objects is a methodological gap in modern architectural theory and practice. The paper explores systematic methods of dimensional transformation in an integrated framework of art theory, spatial cognition and methodologies of computational design. Based on the basic postulates made by the pioneering abstractionists and the prevailing practice of parametric design, we work out a taxonomy of transformation techniques of extrusion, projection, layering, fragmentation, morphogenetic scaling. By comparing five case studies that make use of diagrammatic decoding, geometric mapping and parametric modeling, we can recognize some basic operational logics that govern successful dimensional translation. We show that effective transformations are based on three systems that need to be combined hierarchically: compositional syntax (2D visual hierarchy mapped to spatial distribution), phenomenological mapping (color and gesture mapped to material and light), and algorithmic rule-based generation (parametric constraints that allow design variability). The framework developed further theoretical knowledge on abstraction in architecture as well as offering practical approaches to be used in computational design and generative systems. Results show that hybrid methods with the combination of rule-based parametric tools and emergent algorithmic systems are more successful with better spatial results to improve user perception and interaction than single-method techniques.
Keywords: dimensional translation, parametric design, architectural abstraction, computational morphogenesis, spatial cognition.

RECONCEPTUALIZING ARCHITECTURE AS ART: INTEGRATING FINE ART METHODOLOGIES INTO SPATIAL DESIGN PRACTICE

Melik Sami
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.
LACOMOFA Biskra laboratory. Algeria.

Khelil Sara
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

Tallal Abdel Karim Bouzir
Departement of architecture, Mohamed Khider Biskra University, Biskra, Algeria.

ABSTRACT
The disciplinary separation between architecture and fine arts has continued into the twentieth century even though the disciplines converged in modernist trends and modernist experimental practice. This paper re-conceptualizes architecture as essentially an art practice by looking at how the fine art methodologies can be used in the spatial design. Using a qualitative, interdisciplinary paradigm that includes comparative case study analysis, phenomenological spatial interpretation and visual analysis, this study determines recurring patterns in the ways architects use artistic abstraction, compositional strategies, and expressive methodologies to enrich spatial experience. Examining iconic projects such as the Guggenheim Museum Bilbao, Jewish Museum Berlin, and Chapel of Notre-Dame du Haut, and contemporary projects, one can see that the approach of art, which includes abstraction and symbolism, use of artistic processes (sketching, sculpting, conceptual overlay), and improvement of sensual and emotional space, fundamentally changes the thinking of architectural design. The research shows that the methodologies of fine art help to produce architecturally refined, emotionally expressive spaces that go beyond the functionalist paradigm. Important conclusions are that successful modern architecture utilizes artistic vision as a valid design process that places the architect as artist-creator and not as technician. This study has added to the theory of architecture by offering a systematic approach to comprehending how disciplined approaches to artistic methods benefit the practice of spatial design and by setting forth the implications of this kind of approach to architecture education, practice, and innovation in the built environment. This writing promotes the redefinition of architecture in the broadened artistic discourse without undermining the technical and social accountability of architecture discipline.
Keywords: Architecture as Art; Fine Art Methodologies; Spatial Design Practice; Interdisciplinary Design; Experiential Space.

BEYOND GENETIC DETERMINISM: A GENOMIC AND DEVELOPMENTAL FRAMEWORK FOR AUTISM RISK ASSESSMENT

GENETİK DETERMİNİZMİN ÖTESİNDE: OTİZM RİSKİNİN DEĞERLENDİRİLMESİNE YÖNELİK GENOMİK VE GELİŞİMSEL BİR ÇERÇEVE

Uzm.ŞEVİN AKSOY
Şevin Aksoy, Istanbul University, Institute of Health Sciences, Department of Developmental Behavioral Disorders and Integrated Approach,
ORCID ID: 0000-0003-2168-3261

Prof.Dr. SACİDE PEHLİVAN
Istanbul University, Faculty of Medicine, Department of Medical Biology,
ORCID ID: 0000-0003-1272-5845

ABSTRACT
Autism spectrum disorder (ASD) has a substantial genetic component; however, it cannot be deterministically predicted during the preconceptional, prenatal, or early postnatal periods. ASD represents a highly heterogeneous neurodevelopmental phenotype that cannot be explained by a single gene, genetic variant, biomarker, or neuroanatomical finding.
The aim of this review is to examine the factors that limit deterministic interpretations of autism risk and to propose a stepwise genomic-developmental risk assessment framework for clinical counseling. A narrative review approach was employed, drawing upon genomic, epigenetic, and developmental literature published since 2019.
Current evidence indicates that autism risk emerges through complex interactions among rare high-impact variants, copy number variations, de novo mutations, inherited variants, epigenetic mechanisms, and polygenic contributions. Nevertheless, the predictive value of these factors at the individual level remains limited because of variable expressivity, incomplete penetrance, pleiotropy, and marked phenotypic heterogeneity.
Based on these findings, a stepwise framework is proposed, including family history assessment, developmental phenotyping, genetic counseling, classification of genetic findings according to clinical significance, uncertainty communication, and postnatal developmental surveillance.
In conclusion, autism risk should not be conceptualized as a definitive prenatal or preconceptional diagnostic category. Rather, it should be understood as a probabilistic, developmental, and ethically sensitive domain that requires careful interpretation and longitudinal monitoring.
Keywords: Autism spectrum disorder; genomic risk; developmental phenotyping; genetic counseling; polygenic risk.

ÖZET
Otizm spektrum bozukluğu (OSB), güçlü bir genetik bileşene sahip olmasına rağmen prekonsepsiyonel, prenatal veya erken postnatal dönemlerde deterministik biçimde öngörülebilen bir durum değildir. Bunun temel nedeni, OSB'nin tek bir gen, genetik varyant, biyobelirteç veya nöroanatomik bulgu ile açıklanamayacak kadar heterojen bir nörogelişimsel fenotip olmasıdır.
Bu derlemenin amacı, otizm riskinin deterministik olarak yorumlanmasını sınırlayan faktörleri incelemek ve klinik danışmanlık süreçlerinde kullanılabilecek kademeli bir genomik-gelişimsel risk değerlendirme çerçevesi önermektir. Çalışma, 2019 yılı sonrasında yayımlanan genomik, epigenetik ve gelişimsel literatüre dayalı narratif derleme yaklaşımıyla hazırlanmıştır. Güncel bulgular, otizm riskinde nadir yüksek etkili DNA varyantları, kopya sayısı değişiklikleri, de novo mutasyonları, kalıtılmış varyantlar ile epigenetik mekanizmalar ve poligenik katkılar arasındaki karmaşık etkileşimlerden kaynaklandığını göstermektedir. Bununla birlikte, değişken ekspresivite, eksik penetrans, pleiotropi ve belirgin fenotipik heterojenlik nedeniyle bu faktörlerin bireysel düzeydeki öngörü gücü de sınırlı kalmaktadır. Bu bulgular doğrultusunda aile öyküsünün değerlendirilmesi, gelişimsel fenotipleme, genetik danışmanlık, genetik bulguların klinik anlam düzeylerine göre sınıflandırılması, belirsizliğin etkili biçimde paylaşılması ve doğum sonrası gelişimsel izlemi içeren kademeli bir değerlendirme çerçevesi önerilmektedir.

Sonuç olarak otizm riski, kesin prenatal veya prekonsepsiyonel bir tanı kategorisi olarak değerlendirilmemelidir. Bunun yerine, dikkatli yorumlama ve uzunlamasına izlem gerektiren olasılıksal, gelişimsel ve etik açıdan duyarlı bir danışmanlık alanı olarak ele alınmalıdır.

Anahtar Kelimeler: Otizm spektrum bozukluğu, genomik risk, gelişimsel fenotipleme, genetik danışmanlık, poligenik risk.

YAPAY ZEKÂ VE FEN EĞİTİMİ: GÜNCEL EĞİLİMLER VE TEMATİK BİR İNCELEME (2023-2026)

ARTIFICIAL INTELLIGENCE AND SCIENCE EDUCATION: CURRENT TRENDS AND A THEMATIC REVIEW (2023–2026)

Yüksek Lisans Öğrencisi Cemile DURSUN
Bartın Üniversitesi, Lisansüstü Eğitim Enstitüsü, Bartın, Türkiye.
ORCID ID:0009-0002-5524-0602

Dr. Öğr. Üyesi Bekir GÜLER
Dr. Öğr. Üyesi, Bartın Üniversitesi, Eğitim Fakültesi, Fen Bilgisi Eğitimi, Bartın, Türkiye.
ORCID ID:0000-0002-5713-4347

ÖZET

Bu çalışma, 2023-2026 yılları arasında fen eğitimi bağlamında yürütülen yapay zekâ çalışmalarının mevcut durumunu belirlemeyi ve bu alandaki araştırma eğilimlerinin tematik bir haritasını çıkarmayı amaçlamaktadır. Araştırma kapsamında, uluslararası literatürün en saygın veri tabanlarından biri olan Web of Science (WoS) üzerinden sistematik bir tarama gerçekleştirilmiştir. Tarama sürecinde "Artificial Intelligence" (Yapay Zekâ) ve "Science Education" (Fen Eğitimi) anahtar kelime kombinasyonları kullanılarak 2023-2026 yıllarını kapsayan yayınlara odaklanılmıştır.

Başlangıç aşamasında ulaşılan 47 aday çalışma, önceden belirlenen dahil etme ve hariç tutma kriterlerine göre titizlikle değerlendirilmiştir. Bu süreçte; doğrudan fen eğitimi disiplini ile ilişkili olmayan, tam metnine ulaşılamayan veya odak noktası yapay zekâ teknolojileri dışındaki dijital araçlar olan çalışmalar elenmiştir. Değerlendirme neticesinde, araştırmanın amacına hizmet eden 22 temel makale analiz kapsamına alınmıştır. Seçilen çalışmalar; amaç, yöntem, bulgular ve öneriler ekseninde nitel veri analizi tekniklerinden biri olan içerik analizi yöntemiyle detaylıca incelenmiştir.

Analiz sonuçları, son üç yılda fen eğitiminde yapay zekâ araştırmalarının temel olarak üç ana eksende kümelendiğini göstermektedir: (1) Eğitimcilerin ve öğretmen adaylarının yapay zekâ teknolojilerine yönelik algı ve bakış açıları, (2) yapay zekâ uygulamalarının öğrencilerin bilişsel ve duyuşsal becerileri üzerindeki etkisi, (3) teknolojinin felsefi, pedagojik ve dilbilimsel boyutları. Bulgular, literatürde sunulan teorik çerçevelerin henüz yeterli düzeyde uygulamalı ve deneysel araştırmalarla test edilmediğini ortaya koymaktadır. Ayrıca, fen bilimleri öğretmenlerinin ve öğretmen adaylarının yapay zekâ okuryazarlığı ve entegrasyonu konusunda kendilerini yetersiz hissettikleri saptanmıştır. Bu doğrultuda, alandaki yetersizliklerin giderilmesi için uygulamalı seminerler ve kapsamlı eğitim programlarının düzenlenmesi kritik bir gereklilik olarak öne çıkmaktadır. Bu çalışma, elde edilen veriler ışığında fen eğitimine özgü bir yapay zekâ entegrasyonu yol haritası sunarak gelecek araştırmalar için rehberlik etmeyi hedeflemektedir.

Anahtar Kelimeler: Fen Eğitimi, Yapay Zekâ, İçerik Analizi

ABSTRACT

This study aims to determine the current state of artificial intelligence (AI) research conducted within the context of science education between 2023 and 2026, and to map out the thematic trends within this field. To this end, a systematic review was conducted utilizing Web of Science (WoS), one of the most reputable international databases. The search process focused on publications spanning the years 2023 to 2026, using combinations of the keywords "Artificial Intelligence" and "Science Education."

During the initial phase, 47 candidate studies were retrieved and rigorously evaluated based on predetermined inclusion and exclusion criteria. Throughout this screening process, studies that were not directly related to the discipline of science education, those whose full texts were inaccessible, or those focusing on digital tools other than AI technologies were excluded. Following this evaluation, 22 core articles aligned with the research objectives were selected for analysis. These chosen studies were analyzed in detail—focusing on their purposes, methodologies, findings, and recommendations—using content analysis, a qualitative data analysis technique.

The results of the analysis indicate that AI research in science education over the last three years has primarily clustered around three main axes: (1) the perceptions and viewpoints of educators and

preservice teachers toward AI technologies, (2) the impact of AI applications on students' cognitive and affective skills, and (3) the philosophical, pedagogical, and linguistic dimensions of this technology. The findings reveal that the theoretical frameworks presented in the literature have not yet been sufficiently tested through applied and experimental research. Furthermore, it was determined that science teachers and preservice teachers feel inadequate regarding AI literacy and integration. Accordingly, organizing applied seminars and comprehensive training programs emerges as a critical necessity to address these deficiencies in the field. In light of the gathered data, this study aims to guide future research by proposing a roadmap for AI integration specifically tailored to science education.
Keywords: Science Education, Artificial Intelligence, Content Analysis

HABERMAS'TA İLETİŞİMSEL AKIL VE HUKUKİ MEŞRUİYET SORUNU

COMMUNICATIVE RATIONALITY AND THE PROBLEM OF LEGAL LEGITIMACY IN HABERMAS

Z. Gönül BALKIR
Prof. Dr., Kıbrıs Aydın Üniversitesi, Hukuk Fakültesi,Özel Hukuk Bölümü, GİRNE KKTC,
ORCID ID:0000-0003-0710-8375

Altay İltan Aktürk
Yrd. Doç. Dr., International Alasia Universitesi , Lefkoşe KKTC, E-mail: altayakturk@cau.edu.tr,
ORCID ID: 0000-0003-2794-1866.

Ecem KOCAOĞLAN
Öğr. Gör. Dr., Kıbrıs Aydın Üniversitesi, Hukuk Fakültesi Kamu Hukuku, GİRNE KKTC,
ORCID ID: 0009-0007-9955-432

ÖZET

Modern toplumların artan karmaşıklığı, toplumsal düzenin yalnızca geleneksel otorite biçimleri veya stratejik çıkar ilişkileri üzerinden açıklanmasını yetersiz kılmıştır. Jürgen Habermas, toplumsal bütünleşmenin temelini iletişimsel rasyonaliteye dayandıran kapsamlı bir kuramsal çerçeve geliştirmiştir. Habermas'ın iletişimsel eylem kuramı, bireylerin karşılıklı anlayışa ulaşma amacıyla yürüttükleri iletişim süreçlerinin toplumsal düzenin ve demokratik meşruiyetin temelini oluşturduğunu ileri sürmektedir. Bu yaklaşım, hukukun yalnızca devlet tarafından üretilen normlar bütünü olarak değil, kamusal tartışma ve uzlaşı süreçlerinin ürünü olan bir söylem alanı olarak değerlendirilmesine imkân tanımaktadır.

Bu çalışma, Habermas'ın iletişimsel eylem kuramı ile söylem kuramına dayalı hukuk anlayışı arasındaki ilişkiyi incelemeyi amaçlamaktadır. Çalışmada öncelikle iletişimsel eylem kavramı, iletişimsel rasyonalite ve yaşam dünyası kuramsal çerçevesi ele alınmakta; ardından hukuk normlarının meşruiyetinin hangi koşullarda sağlanabileceği tartışılmaktadır. Habermas'a göre modern hukuk sistemleri yalnızca pozitif hukuk kuralları aracılığıyla değil, aynı zamanda özgür ve eşit bireylerin katılımına açık söylemsel süreçler yoluyla meşruiyet kazanmaktadır. Zira hukukun geçerliliği, zorlayıcı gücünden çok kamusal akıl yürütme süreçleri içerisinde rasyonel olarak gerekçelendirilebilmesine bağlıdır.

Habermas, hukukun bir normlar sistemi olaması yanında, iletişimsel rasyonalite temelinde şekillenen ve demokratik söylem süreçleriyle meşruiyet kazanan toplumsal bir kurum olarak tanımlamaktadır. Bu yaklaşım, çağdaş hukuk sosyolojisi ve demokrasi teorisi açısından önemli bir kuramsal perspektif sunmaktadır.

Çalışmamızda hukukun, modern toplumlarda sistem ve yaşam dünyası arasında aracılık yapan normatif bir kurum olarak işlev gördüğü; demokratik meşruiyetin ise kamusal söylem süreçlerine dayandığı gösterilmek istenmiştir. Ayrıca hukukun söylemsel temellerinin zayıflaması durumunda, meşruiyet krizlerinin ortaya çıkabileceği ve demokratik katılımın fazlasıyla zarar görebileceği kolayca öngörülebilir.

Anahtar Kelimeler: Habermas, İletişimsel Eylem Kuramı, Söylem Kuramı, Hukuk Sosyolojisi, Meşruiyet, İletişimsel Rasyonalite, Demokrasi.

ABSTRCAT

asolely on traditional forms of authority or strategic interest relations insufficient. Jürgen Habermas developed a comprehensive theoretical framework that grounds social integration in communicative rationality. Habermas's Theory of Communicative Action argues that communicative processes aimed at achieving mutual understanding among individuals constitute the foundation of social order and democratic legitimacy. This approach makes it possible to conceptualize law not merely as a body of norms produced by the state, but also as a discursive sphere shaped through processes of public deliberation and consensus-building.

This study aims to examine the relationship between Habermas's Theory of Communicative Action and his discourse-theoretical conception of law. The analysis first addresses the concepts of communicative

action, communicative rationality, and the theoretical framework of the lifeworld. It then explores the conditions under which the legitimacy of legal norms can be established. According to Habermas, modern legal systems derive their legitimacy not only from positive legal rules but also from discursive processes that are open to the participation of free and equal individuals. The validity of law depends less on its coercive force than on its capacity to be rationally justified within processes of public reasoning and democratic deliberation.

Habermas defines law not only as a system of norms but also as a social institution shaped by communicative rationality and legitimized through democratic discourse. This perspective provides an important theoretical framework for contemporary legal sociology and democratic theory. By emphasizing the communicative foundations of legal legitimacy, Habermas highlights the indispensable role of participatory and deliberative processes in maintaining democratic governance.

This study argues that law functions as a normative institution mediating between the system and the lifeworld in modern societies, while democratic legitimacy is grounded in public discourse. Furthermore, it suggests that the weakening of the discursive foundations of law may lead to crises of legitimacy and significantly undermine democratic participation.

Keywords: Habermas, Theory of Communicative Action, Discourse Theory, Sociology of Law, Legitimacy, Communicative Rationality, Democracy.

KIBRIS'TA DENİZ EKOSİSTEMİNİN KORUNMASINDA ULUSLARARASI HUKUKUN ETKİSİNİN ANALİZİ

ANALYSIS OF THE IMPACT OF INTERNATIONAL LAW ON THE PROTECTION OF MARINE ECOSYSTEMS IN CYPRUS

Prof. Dr. Z. Gönül BALKIR
Kıbrıs Aydın Üniversitesi, Hukuk Fakültesi, Özel Hukuk Bölümü, GİRNE KKTC
ORCID: 0000-0003-0710-8375

Yrd. Doç. Dr. Altay İltan AKTÜRK
International Alasia Üniversitesi, Lefkoşa KKTC
ORCID: 0000-0003-2794-1866

Öğr. Gör. Dr. Ecem KOCAOGLAN
Kıbrıs Aydın Üniversitesi, Hukuk Fakültesi, Kamu Hukuku Bölümü, GİRNE KKTC
|ORCID: 0009-0007-9955-4327

ÖZET

Bu çalışma, deniz kirliliği ile mücadele kapsamında uluslararası hukuk normlarının ve küresel çevresel rejimlerin, Kıbrıs hukuku üzerindeki etkilerini ve bu normların ulusal mevzuata entegrasyon süreçlerini değerlendirmeyi amaçlamaktadır. Araştırma, uluslararası yasal çerçevelerin, Kıbrıs'ın yerel hukuk sisteminde nasıl etkiler bıraktığını ve bu etkilerin somut çevre politikalarına dönüşme kapasitesini analitik bir yaklaşımla ele almaktadır. Çalışmanın temel ekseni; plastik kirliliğinin, özellikle de denizler üzerindeki yıkıcı etkileri bilinen tek kullanımlık plastiklerin denetimine yönelik uluslararası mevzuatın, yerel idari ve hukuki yapılar üzerindeki dönüştürücü gücünü vurgulamaktır.

Araştırmanın birincil hedefi, Barselona Sözleşmesi ve ek protokolleri başta olmak üzere, deniz çevresinin korunmasına ilişkin uluslararası konvansiyonların ve Avrupa Birliği hukukunun Kıbrıs ulusal politikaları üzerindeki belirleyici rolünü incelemektir. Bu yasal çerçevelerin tetkik edilmesiyle, yerel mevzuatın uluslararası standartlara uyum düzeyi ve bu standartların uygulanabilirliği hakkında kapsamlı ve karşılaştırmalı bir anlayış sağlanması hedeflenmektedir. Bu bağlamda, deniz ekosistemini tehdit eden atıkların hukuki statüsü ve bu atıkların yönetimine dair yasal boşluklar bilimsel bir süzgeçten geçirilmektedir.

Ayrıca bu araştırma, uluslararası hukuk kurallarının Kıbrıs iç hukukunda uygulanması aşamasında karşılaşılan yargısal zorlukları, siyasi statüden kaynaklanan engelleri ve uygulama kapasitesindeki noksanlıkları belirleyerek analiz etmektedir. Toplumun çevre hukukuna olan uyumunu artırmak ve yerel hukuk mekanizmalarını uluslararası standartlarla harmonize etmek adına çözüm önerileri sunulmaktadır.

Çalışmada, birincil veriler; yürürlükteki yasalar, tüzükler, uluslararası antlaşma metinleri ve yargı kararları aracılığıyla derlenerek doğrudan hukuki içgörüler sunacaktır.

İkincil veriler ise; bilimsel makaleler ve kitapları kapsayacak olup, mevcut literatürdeki ve araştırma sorularına normatif yanıtlar üretmek amacıyla kullanılacaktır.

Anahtar Kelimeler: uluslararası çevre hukuku, Kıbrıs hukuku, deniz kirliliği mevzuatı, plastik kirliliği regülasyonları, hukuki uyumlaştırma, atık yönetimi politikaları.

ABSTRACT

This study aims to evaluate the influence of international legal norms and global environmental regimes on Cypriot law in the context of combating marine pollution, as well as the processes through which these norms are integrated into domestic legislation. The research adopts an analytical approach to examine how international legal frameworks shape the local legal system of Cyprus and the extent to which these influences are translated into concrete environmental policies. The central focus of the study is to emphasize the transformative role of international regulations governing plastic pollution—particularly single-use plastics, which are known to have devastating effects on marine ecosystems—on local administrative and legal structures.

The primary objective of the research is to investigate the decisive role of international conventions concerning the protection of the marine environment, particularly the Barcelona Convention and its supplementary protocols, as well as European Union environmental law, in shaping Cyprus's national environmental policies. Through an examination of these legal frameworks, the study seeks to provide a comprehensive and comparative understanding of the degree of harmonization between domestic legislation and international standards, as well as the practical applicability of such standards. In this context, the legal status of waste threatening marine ecosystems and the existing regulatory gaps concerning waste management are critically assessed.

Furthermore, the study analyzes the judicial challenges encountered during the implementation of international environmental law within the domestic legal framework of Cyprus, including obstacles arising from the island's political status and deficiencies in institutional enforcement capacity. It also proposes legal and policy recommendations aimed at enhancing public compliance with environmental law and harmonizing local legal mechanisms with international environmental standards.

The study relies on primary legal sources, including legislation, regulations, international treaty texts, and judicial decisions, to provide direct legal insights. Secondary sources consist of academic articles and scholarly books, which are utilized to evaluate existing literature and develop normative responses to the research questions.

Keywords: International Environmental Law, Cypriot Law, Marine Pollution Legislation, Plastic Pollution Regulations, Legal Harmonization, Waste Management Policies.

CHILDHOOD TRAUMAS AND DREAM THEMES: THE MEDIATING ROLE OF BELIEF IN PARONORMAL EVENTS

Gülşah BALABAN
İstanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID: 0000-0002-2412-4249

Ahmet Saim GÜLSOY
Istanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID:0009-0007-0314-9379

Azra Topçu
İstanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID: 0009-0002-1677-4281

Kübra Işık
İstanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID:0009-0001-1952-7270

ABSTRACT
The purpose of this study was to examine the relationships the mediating role of paranormal belief between traumatic experiences and dream themes. This study is contained 286 participants, including 180 women (62.9%) and 106 men (37.1%), aged between 18 and 55 years (M = 26.59, SD = 9.33). Data has been analyzed using independent samples t-tests, Pearson correlation analyses, and mediation analysis. The results of the independent samples t-tests stated that women have scored significantly higher than men on dream themes and paranormal belief, however there is no significant gender differences were found in childhood trauma. Correlation analyses have clarified remarkable positive associations within traumatic experiences, paranormal belief, and dream themes. Individuals who have high levels of trauma showed strong paranormal beliefs, and stronger paranormal beliefs were conducted with dream themes. Trauma was also directly related to dream themes. Mediation analysis (PROCESS Model 4) showed that paranormal belief significantly mediated the relationship between traumatic experiences and dream themes. Especially, higher trauma can be predicted to increase paranormal belief. This also predicts stronger dream themes, suggesting an indirect link between trauma and dream processes. These findings emphasis the importance of meaning-making systems, in particular paranormal interpretations, in shaping how individuals with traumatic experiences deal with dream activity. Psychoeducational interventions to address trauma, beliefs, and sleep-related processes may help advancement healthier interpretations of abnormal or intense dream experiences.
Keywords: Childhood Traumas, Paranormal Belief, Dream Themes

GELECEĞİN MESLEKLERİ: TARIMDA YAPAY ZEKÂ VE AKILLI TARIM TEKNOLOJİLERİ

FUTURE PROFESSIONS: ARTIFICIAL INTELLIGENCE AND SMART AGRICULTURE TECHNOLOGIES IN AGRICULTURE

Mehmet Doğan
Mardin Artuklu Üniversitesi Lisansüstü Eğitim Enstitüsü Yüksek Lisans Öğrencisi

Mehmet Zeki Acar
Mardin Artuklu Üniversitesi Lisansüstü Eğitim Enstitüsü Yüksek Lisans Öğrencisi

Özet
Tarım, insanlığın en temel üretim alanlarından biri olmasının yanında, günümüzde dijital dönüşümün en hızlı yaşandığı sektörlerden biri haline gelmiştir. Artan dünya nüfusu, iklim değişikliği, doğal kaynakların azalması, su kıtlığı, gıda güvenliği ve sürdürülebilir üretim ihtiyacı, tarımsal üretimde yenilikçi teknolojilerin kullanımını zorunlu kılmaktadır. Bu doğrultuda yapay zekâ, büyük veri analitiği, nesnelerin interneti (IoT), uzaktan algılama sistemleri, insansız hava araçları (İHA), tarımsal robotlar, otonom tarım makineleri ve karar destek sistemleri, tarımsal üretimin geleceğini şekillendiren temel teknolojiler olarak öne çıkmaktadır.
Yapay zekâ destekli akıllı tarım uygulamaları sayesinde bitki gelişimi gerçek zamanlı olarak izlenebilmekte, hastalık ve zararlılar erken dönemde tespit edilebilmekte, sulama ve gübreleme uygulamaları bitkinin ihtiyaçlarına göre optimize edilmekte, ürün verimi artırılırken su, enerji ve diğer üretim girdileri daha verimli kullanılabilmektedir. Böylece hem üretim maliyetleri düşürülmekte hem de çevresel sürdürülebilirliğe önemli katkılar sağlanmaktadır. Tarımda dijitalleşme yalnızca üretim tekniklerini değiştirmekle kalmamakta; aynı zamanda iş gücü yapısını ve meslek tanımlarını da yeniden şekillendirmektedir. Gelecekte tarım sektörü; yapay zekâ uzmanları, tarımsal veri analistleri, hassas tarım danışmanları, akıllı sulama sistemleri uzmanları, tarım robotları operatörleri, drone pilotları, uzaktan algılama uzmanları, dijital tarım yazılım geliştiricileri ve tarımsal karar destek sistemleri uzmanları gibi birçok yeni meslek alanına ihtiyaç duyacaktır. Bunun yanında klasik ziraat mühendisliği bilgi ve becerileri, dijital teknolojiler ve veri okuryazarlığı ile bütünleşerek çok disiplinli bir yapıya dönüşecektir.
Yapay zekânın tarımsal üretimdeki kullanım alanları, akıllı tarım teknolojilerinin sağladığı ekonomik ve çevresel avantajlar, dijital tarımın geleceği, sürdürülebilir üretim sistemleri ve tarım sektöründe ortaya çıkan yeni meslek alanları güncel örneklerle ele alınacaktır. Çalışmada öğrencilerin ve genç araştırmacıların geleceğin tarımına hazırlanabilmeleri için edinmeleri gereken bilgi, beceri ve yetkinlikler üzerinde durulacak; veri analizi, dijital teknoloji kullanımı, yazılım okuryazarlığı ve disiplinler arası çalışma kültürünün önemi vurgulanacaktır.
Çalışmanın amacı; yapay zekâ ve akıllı tarım teknolojilerinin tarımsal üretimdeki rolünü bilimsel veriler ışığında tanıtmak, geleceğin tarım meslekleri konusunda farkındalık oluşturmak, gençlerin teknoloji odaklı tarım alanlarına yönelimini teşvik etmek ve sürdürülebilir, verimli ve rekabetçi bir tarım sektörü için dijital dönüşümün önemini ortaya koymaktır.
Anahtar Kelimeler: Yapay Zekâ, Akıllı Tarım, Dijital Tarım, Hassas Tarım, Tarım Teknolojileri, Sürdürülebilirlik.

Abstract
Agriculture, one of the most fundamental sectors for human survival, has become one of the fastest-growing fields undergoing digital transformation. The increasing global population, climate change, depletion of natural resources, water scarcity, food security concerns, and the growing need for sustainable agricultural production have made the adoption of innovative technologies in agriculture indispensable. In this context, artificial intelligence (AI), big data analytics, the Internet of Things (IoT), remote sensing technologies, unmanned aerial vehicles (UAVs), agricultural robots, autonomous agricultural machinery, and decision support systems have emerged as key technologies shaping the future of agricultural production.

AI-powered smart farming applications enable real-time monitoring of crop growth, early detection of plant diseases and pests, and optimization of irrigation and fertilization practices according to crop requirements. These technologies contribute to increased crop productivity while improving the efficient use of water, energy, and other agricultural inputs. Consequently, they help reduce production costs and make significant contributions to environmental sustainability. Digitalization in agriculture is transforming not only production methods but also the workforce structure and occupational profiles within the sector. In the future, agriculture will increasingly require professionals such as artificial intelligence specialists, agricultural data analysts, precision agriculture consultants, smart irrigation system experts, agricultural robot operators, drone pilots, remote sensing specialists, digital agriculture software developers, and agricultural decision support system specialists. Furthermore, the traditional knowledge and competencies of agricultural engineers will increasingly integrate with digital technologies and data literacy, leading to a multidisciplinary professional structure.

This study discusses the applications of artificial intelligence in agricultural production, the economic and environmental benefits of smart agriculture technologies, the future of digital agriculture, sustainable production systems, and emerging career opportunities in the agricultural sector through contemporary examples. It also emphasizes the knowledge, skills, and competencies that students and young researchers should acquire to prepare for the future of agriculture, highlighting the importance of data analysis, digital technology utilization, software literacy, and interdisciplinary collaboration.

The primary objective of this study is to introduce the role of artificial intelligence and smart agriculture technologies in agricultural production based on scientific evidence, raise awareness of future agricultural professions, encourage young people to pursue technology-oriented careers in agriculture, and emphasize the importance of digital transformation for building a sustainable, efficient, and competitive agricultural sector.

Keywords: Artificial Intelligence, Smart Agriculture, Digital Agriculture, Precision Agriculture, Agricultural Technologies, Sustainability.

İKLİM DEĞİŞİKLİĞİNİN HİDRO-METEOROLOJİK PARAMETRELER ÜZERİNDEKİ ETKİSİ (KLASİK TESTLER İLE ITA VE IPTA YÖNTEMLERİNİN ENTEGRASYONU)

THE IMPACT OF CLIMATE CHANGE ON HYDRO-METEOROLOGICAL PARAMETERS: INTEGRATION OF CLASSICAL TESTS WITH ITA AND IPTA METHODS

YL Öğrencisi Şüheda GÖKDAŞ
Adıyaman Üniversitesi, Fen Bilimleri Enstitüsü, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Doç. Dr. Musa EŞİT
Doç.Dr., Adıyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye.

Dr. Öğrt Üyesi Zeyneb KILIÇ
Dr. Öğrt. Üyesi, Adıyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye.

ÖZET
İklim değişikliğinin, günümüzde hidro-meteorolojik süreçlerin yeniden şekillenmesine neden olarak su kaynakları yönetimi ve tarımsal sürdürülebilirlik üzerinde büyük bir etkisi vardır. Bu çalışma, 1965-2025 yıllarını kapsayan, Doğu Anadolu Bölgesi'ni temsil eden sekiz stratejik meteoroloji istasyonuna (Ağrı, Iğdır, Van, Doğubeyazıt, Erciş, Muradiye, Özalp, Başkale) ait Yıllık Toplam Yağış (YTY) ve Aylık Ortalama Sıcaklık (AOS) verilerini analiz etmektedir. Çalışmanın temel amacı, klasik istatistiksel yöntemler ile yenilikçi grafiksel yaklaşımları entegre ederek, iklimsel parametrelerdeki değişimleri ve olası iklimsel kaymaları karakterize etmektir. Araştırmanın metodolojik altyapısını, trendin varlığını ve anlamlılığını test eden Mann-Kendall (MK) ve Spearman's Rho (SRHO) testleri ile Yenilikçi Trend Analizi (ITA) ve aylık geçiş dinamiklerini dairesel poligonlarla görselleştiren Yenilikçi Poligon Trend Analizi (IPTA) oluşturmaktadır. Klasik testlerin aksine ITA yöntemi, herhangi bir dağılım şartı aramaksızın uç değerlerdeki (ekstrem sıcaklıklar veya kurak dönemler) gizli eğilimleri saptarken; IPTA yöntemi, ardışık aylar arasındaki geçişleri poligonlar üzerinden tanımlayarak mevsimsel döngüdeki sapmaları ve iklimsel kaymaları görsel olarak ortaya koymaktadır. Analiz sonuçları, sıcaklık parametresinde (AOS) tüm lokasyonlarda istatistiksel olarak yüksek derecede anlamlı bir artış olduğunu kanıtlamaktadır. Aylık bazdaki incelemeler, bu termal artışın özellikle Haziran, Temmuz ve Ağustos aylarında zirveye ulaştığını ve bölgede belirgin bir iklimsel rejim değişikliğine işaret ettiğini göstermektedir. Sonuç olarak, klasik testlerin genel trendleri belirlemedeki gücü ile yenilikçi yöntemlerin (ITA/IPTA) verinin alt kategorilerindeki hassasiyeti, bölgedeki iklimsel değişimin şiddetini ve mevsimsel geçişlerdeki düzensizleşmeyi net bir şekilde ortaya koymuştur. Bu çok boyutlu yaklaşım, bölgedeki su kaynakları yönetimi ve iklim değişikliğine uyum stratejileri için kritik bulgular sunmaktadır.
Anahtar Kelimeler: İklim Değişikliği, Yenilikçi Trend, Mann-Kendall, Doğu Anadolu

ABSTRACT
Climate change is currently causing a reshaping of hydro-meteorological processes, placing vital pressure on water resource management and agricultural sustainability. This study analyzes Annual Total Precipitation (ATP) and Monthly Average Temperature (MAT) data from eight strategic meteorological stations (Ağrı, Iğdır, Van, Doğubeyazıt, Erciş, Muradiye, Özalp, Başkale) representing the Eastern Anatolia Region, covering the years 1965-2025. The main objective of the study is to characterize changes in climatic parameters and potential climatic shifts by integrating classical statistical methods with innovative graphical approaches. The methodological framework of the research consists of Mann-Kendall (MK) and Spearman's Rho (SRHO) tests, which test the existence and significance of trends, Innovative Trend Analysis (ITA), and Innovative Polygon Trend Analysis (IPTA), which visualizes monthly transition dynamics with circular polygons. Unlike classical tests, the ITA method detects latent trends in extreme values (extreme temperatures or dry periods) without seeking any distribution conditions; while the IPTA method visually reveals deviations in the seasonal cycle and climatic shifts by defining transitions between consecutive months through polygons.

The analysis results prove a statistically highly significant increase in the temperature parameter (AOS) in all locations. Monthly analyses show that this thermal increase peaks particularly in June, July, and August, indicating a significant climatic regime change in the region. In conclusion, the power of classical tests in determining general trends and the sensitivity of innovative methods (ITA/IPTA) in subcategories of data clearly reveal the severity of climatic change and the irregularity in seasonal transitions in the region. This multi-dimensional approach provides critical findings for water resource management and climate change adaptation strategies in the region.
Keywords: Climate Change, Innovative Trend, Mann-Kendall, Eastern Anatolia

İNSAN DERİSİNİN OBLİGAT EKTOPARAZİTLERİ: DEMODEX AKARLARININ BİYOLOJİSİ, EKOLOJİSİ

OBLIGATE ECTOPARASITES OF HUMAN SKIN: BIOLOGY AND ECOLOGY OF DEMODEX MITES

Kübra KOÇ
Tekirdağ Namık Kemal Üniversitesi, Ziraat Fakültesi
Bitki Koruma Bölümü, Tekirdağ, TÜRKİYE

Doç. Dr. Nihal KILIÇ
Tekirdağ Namık Kemal Üniversitesi, Ziraat Fakültesi
Bitki Koruma Bölümü, Tekirdağ, TÜRKİYE

ÖZET

Demodex akarları, insan derisinde başta kıl folikülleri ve sebase bezlerden oluşan pilosebase üniteler olmak üzere, göz kapaklarında yer alan meibomian bezlerinde kalıcı olarak yaşayan, çıplak gözle görülemeyen mikroskobik ektoparazitlerdir. Yaşamlarını sürdürebilmek için zorunlu olarak insan konak dokusuna bağımlı olan bu akarlar, konakçı dışında uzun süre canlı kalamazlar. İnsanlarda en yaygın görülen türler *Demodex folliculorum* ve *Demodex brevis* olup, bu iki tür morfolojik özellikleri, yerleşim alanları, ekolojik tercihleri ve popülasyon dinamikleri bakımından belirgin farklılıklar göstermektedir. Sebase aktivitenin yoğun olduğu alın, burun, yanaklar, çene ve periorbital bölge, *Demodex* kolonizasyonunun en sık gözlendiği anatomik alanlardır.

Düşük popülasyon yoğunluklarında deri mikrobiyotasıyla ekolojik denge içinde bulunabilen *Demodex* türleri, konakçının immünolojik durumu, hormonal profili, yaşı, sebum üretimi, kortikosteroid kullanımı ve çevresel faktörler gibi içsel ve dışsal değişkenlere bağlı olarak aşırı çoğalabilmektedir. Bu popülasyon artışı; rosacea, blefarit, perioküler dermatit, seboreik dermatit ve demodikoz gibi çeşitli dermatolojik ve oftalmolojik tablolarla ilişkilendirilmektedir. *Demodex* yoğunluğundaki artışa bağlı olarak mekanik foliküler hasar, inflamatuvar ve immün yanıtın uyarılması, folikül tıkanıklığı ve başta *Bacillus oleronius* olmak üzere bazı mikroorganizmaların taşınması gibi farklı patojenik mekanizmaların birlikte rol oynadığı düşünülmektedir. Popülasyon yoğunluğu ile inflamatuvar yanıtın şiddeti arasındaki pozitif ilişki, *Demodex* akarlarının yalnızca pasif bir simbiyont olarak değil, belirli koşullarda konak patolojisini doğrudan veya dolaylı biçimde etkileyebilen aktif biyolojik etkenler olarak değerlendirilmesi gerektiğini göstermektedir.

Demodex popülasyon yoğunluğunun belirlenmesinde standart yüzeyel deri biyopsisi, deri kazıntısı, kirpik epilasyonu ve direkt mikroskobik sayım temel tanı yöntemleri arasında yer almaktadır. Bununla birlikte dermoskopi gibi görüntüleme teknikleri, akarların folikül içindeki dağılımını, yoğunluğunu, hareketliliğini ve morfolojik özelliklerini doku bütünlüğü bozulmadan gerçek zamanlı olarak değerlendirme olanağı sunmaktadır. *Demodex* yoğunluğunu azaltmaya yönelik akarisidal, antiinflamatuvar ve antimikrobiyal ajanların etkinliği çeşitli klinik çalışmalarla desteklenmiş olsa da popülasyon kontrolüne ilişkin tanı eşikleri, tedavi süreleri ve uygulama protokolleri hâlen standardizasyon gerektiren konular arasındadır.

Son yıllarda moleküler sistematik, filogenetik analizler ve deri mikrobiyotası üzerine yapılan çalışmalar, *Demodex* türlerinin genetik çeşitliliğini, konakla olan özgül ilişkisini, popülasyon yapısını ve insan deri ekosistemindeki rolünü daha ayrıntılı biçimde ortaya koymaktadır. Bu alandaki araştırmaların derinleşmesiyle birlikte, *Demodex* popülasyonlarının izlenmesi, patojenik eşiklerinin belirlenmesi ve kontrolüne yönelik daha etkili, hedefe yönelik ve ekolojik açıdan dengeli stratejilerin geliştirilmesi mümkün olacaktır.

Anahtar Kelimeler: *Demodex folliculorum*, *Demodex brevis,* ektoparazit, deri mikrobiyotası, dermoskopi, akarisidal tedavi

ABSTRACT

Demodex mites are microscopic ectoparasites, invisible to the naked eye, that permanently inhabit the pilosebaceous units of human skin, primarily consisting of hair follicles and sebaceous glands, as well as the meibomian glands located in the eyelids.

These mites are obligately dependent on human host tissues for survival and cannot remain viable for extended periods outside the host. The most commonly encountered species in humans are *Demodex folliculorum* and *Demodex brevis*, which differ markedly in terms of morphology, habitat preference, ecological characteristics, and population dynamics. Anatomical regions with high sebaceous activity, including the forehead, nose, cheeks, chin, and periorbital area, represent the most common sites of *Demodex* colonization.

At low population densities, *Demodex* species may exist in ecological equilibrium with the normal skin microbiota. However, they may proliferate excessively depending on intrinsic and extrinsic factors such as the host's immunological status, hormonal profile, age, sebum production, corticosteroid use, and environmental conditions. This increase in population density has been associated with various dermatological and ophthalmological conditions, including rosacea, blepharitis, periocular dermatitis, seborrheic dermatitis, and demodicosis. Several pathogenic mechanisms are thought to act together in response to increased *Demodex* density, including mechanical follicular damage, stimulation of inflammatory and immune responses, follicular obstruction, and the carriage of certain microorganisms, particularly *Bacillus oleronius*. The positive association between population density and the severity of the inflammatory response indicates that *Demodex* mites should not be regarded merely as passive symbionts, but rather as active biological agents capable of directly or indirectly influencing host pathology under certain conditions.

Standardized skin surface biopsy, skin scraping, eyelash epilation, and direct microscopic counting remain among the principal methods used to determine *Demodex* population density. In addition, imaging techniques such as dermoscopy provide the opportunity to evaluate the distribution, density, motility, and morphological characteristics of mites within follicles in real time, without disrupting tissue integrity. Although the efficacy of acaricidal, anti-inflammatory, and antimicrobial agents aimed at reducing *Demodex* density has been supported by various clinical studies, diagnostic thresholds, treatment durations, and application protocols for population control still require further standardization.

In recent years, studies on molecular systematics, phylogenetic analyses, and the skin microbiota have provided a more detailed understanding of the genetic diversity of *Demodex* species, their host-specific relationships, population structure, and role within the human skin ecosystem.

As research in this field continues to expand, it is expected that more effective, targeted, and ecologically balanced strategies will be developed for monitoring *Demodex* populations, determining pathogenic thresholds, and controlling their abundance.

Keywords: *Demodex folliculorum*, *Demodex brevis*, ectoparasite, skin microbiota, dermoscopy, acaricidal treatment

YERLİ DİATOM TOPRAĞININ (DETECH WP95) FARKLI DOZLARININ LABORATUVAR KOŞULLARINDA TETRANYCHUS URTİCAE KOCH (ACARİ: TETRANYCHİDAE) VE AVCI AKAR PHYTOSEİULUS PERSİMİLİS ATHİAS-HENRİOT (ACARİ: PHYTOSEİİDAE) ÜZERİNE ETKİLERİ*

EFFECTS OF DIFFERENT DOSES OF A LOCALLY PRODUCED DIATOMACEOUS EARTH (DETECH WP90) ON TETRANYCHUS URTİCAE KOCH (ACARI: TETRANYCHIDAE) AND THE PREDATORY MITE PHYTOSEİULUS PERSİMİLİS ATHIAS-HENRİOT (ACARI: PHYTOSEIIDAE) UNDER LABORATORY CONDITIONS

Doç. Dr. Nihal KILIÇ
Tekirdağ Namık Kemal Üniversitesi Ziraat Fakültesi, Bitki Koruma Bölümü, Tekirdağ/TÜRKİYE
ORCID ID:0000-0002-7538-7444

Kübra KOÇ
Tekirdağ Namık Kemal Üniversitesi Ziraat Fakültesi, Bitki Koruma Bölümü, Tekirdağ/TÜRKİYE
ORCID ID: 0009-0009-2442-3116

Havva GÖKTEPE
Tekirdağ Namık Kemal Üniversitesi Ziraat Fakültesi, Bitki Koruma Bölümü, Tekirdağ/TÜRKİYE
ORCID ID:0009-0002-7501-3677

Fatma Betül TIRPAN
Tekirdağ Namık Kemal Üniversitesi Ziraat Fakültesi, Bitki Koruma Bölümü, Tekirdağ/TÜRKİYE
ORCID ID:0009-0002-7501-3677

ÖZET

Bu araştırmada, yerli diatom toprağı preparatı Detech WP95'in iki noktalı kırmızı örümcek *Tetranychus urticae* Koch (Acari: Tetranychidae) ve biyolojik mücadelede yaygın olarak kullanılan avcı akar *Phytoseiulus persimilis* Athias-Henriot (Acari: Phytoseiidae) üzerindeki doza ve zamana bağlı etkileri laboratuvar koşullarında karşılaştırmalı olarak değerlendirilmiştir. Denemeler 25 ± 2 °C sıcaklık, %65 ± 10 bağıl nem ve 16:8 saat aydınlık:karanlık fotoperiyodu koşullarında yürütülmüş; diatom toprağının 1, 2,5, 5, 7,5 ve 10 g/m² dozları her iki türe uygulanmıştır. Türler arasındaki duyarlılık farkını ortaya koymak amacıyla ölüm verileri probit zaman–ölüm analiziyle değerlendirilmiş ve LT_{50} ile LT_{90} değerleri hesaplanmıştır. Elde edilen bulgular, *T. urticae*'de ölüm oranlarının zamana ve doza bağlı olarak belirgin şekilde arttığını, *P. persimilis*'te ise bu artışın daha geç dönemde ortaya çıktığını göstermiştir. Zararlı tür *T. urticae*'de özellikle yüksek dozlarda ölüm oranları erken dönemde artmaya başlamış; 10 g/m² dozunda ölüm oranı 60. saatte %90'a, 66. saatten itibaren ise %100'e ulaşmıştır. Aynı türde 7,5 g/m² dozunda ölüm oranı 60. saatte %60, 66. saatte %80 ve 78. saatte %90 olarak belirlenmiştir. Orta doz olan 5 g/m²'de ölüm oranı deneme sonunda %60'a ulaşırken, 1 ve 2,5 g/m² dozlarında etki daha sınırlı kalmıştır. Bu sonuçlar, diatom toprağının *T. urticae* üzerindeki etkisinin maruziyet süresi uzadıkça arttığını ve doz artışıyla güçlendiğini ortaya koymaktadır. Buna karşılık, avcı akar *P. persimilis*'te ölüm oranları daha geç dönemde yükselmiştir. En yüksek doz olan 10 g/m² dozunda ilk ölüm 60. saatte %20 olarak kaydedilmiş, ölüm oranı 156. saatten itibaren %80'e ulaşmış ve %100 ölüm ancak 216. saatte görülmüştür. Benzer şekilde 7,5 g/m² dozunda da ölüm oranı daha geç artmış ve deneme sonunda %100'e ulaşmıştır. LT değerleri de türler arasındaki bu zaman-etki farkını desteklemiştir. *T. urticae* için LT_{50} değerleri 7,5 ve 10 g/m² dozlarında sırasıyla 47,78 ve 35,22 saat olarak hesaplanırken, *P. persimilis* için aynı dozlarda bu değerler sırasıyla 165,45 ve 142,13 saat olarak belirlenmiştir. LT_{90} değerleri ise *T. urticae* için sırasıyla 84,45 ve 63,02 saat; *P. persimilis* için 244,30 ve 233,13 saat olarak hesaplanmıştır. Bu bulgular, diatom toprağının hedef zararlı *T. urticae* üzerinde daha kısa sürede etkili olduğunu, avcı akar *P. persimilis* üzerindeki etkinin ise daha uzun maruziyet sürelerinden sonra belirginleştiğini göstermektedir. Sonuç olarak, diatom toprağı *T. urticae* popülasyonlarının baskılanmasında potansiyel bir fiziksel mücadele materyali olarak değerlendirilebilir.

Özellikle 10 g/m² dozunda hedef zararlı üzerinde daha hızlı ve yüksek düzeyde etki görülmesi, bu dozun zamana bağlı etkinlik açısından öne çıktığını göstermektedir.

Uygun doz, uygulama zamanı ve temas süresi dikkate alındığında, diatom toprağı *T. urticae* popülasyonlarını azaltmaya yardımcı olabilir; bu da bitkilerde zararlı baskısının düşürülmesine ve *P. persimilis*'in biyolojik mücadeledeki rolünün korunmasına katkı sağlayabilir. Bununla birlikte, yüksek dozlarda ve uzun süreli maruziyetlerde *P. persimilis* üzerinde de ölüm oranlarının artması, diatom toprağının avcı akarlarla birlikte kullanımında tamamen risksiz olmadığını ortaya koymaktadır. Bu nedenle diatom toprağının entegre mücadele programlarında kullanımı değerlendirilirken doz, uygulama zamanı ve temas süresi birlikte dikkate alınmalı; laboratuvar koşullarında elde edilen bulgular sera ve tarla koşullarında yapılacak ek çalışmalarla desteklenmelidir.

Anahtar Kelimeler: Diatom toprağı, inert toz, *Tetranychus urticae*, *Phytoseiulus persimilis*, avcı akar, LT_{90}

ABSTRACT

In this research, the dose- and time-dependent effects of the locally produced diatomaceous earth preparation Detech WP95 were comparatively evaluated under laboratory conditions against the two-spotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae), and the predatory mite *Phytoseiulus persimilis* Athias-Henriot (Acari: Phytoseiidae), which is widely used in biological control. The experiments were conducted at 25 ± 2 °C, 65 ± 10% relative humidity, and a 16:8 h light:dark photoperiod. Diatomaceous earth was applied to both species at doses of 1, 2.5, 5, 7.5, and 10 g/m². To determine the difference in susceptibility between the two species, mortality data were evaluated using probit time–mortality analysis, and LT_{50} and LT_{90} values were calculated. The results showed that mortality in *T. urticae* increased markedly depending on exposure time and dose, whereas this increase occurred later in *P. persimilis*. In the pest species *T. urticae*, mortality began to increase at an earlier stage, particularly at higher doses. At 10 g/m², mortality reached 90% at 60 h and 100% from 66 h onward. At 7.5 g/m², mortality in the same species was 60% at 60 h, 80% at 66 h, and 90% at 78 h. At the intermediate dose of 5 g/m², mortality reached 60% by the end of the experiment, whereas the effect remained more limited at 1 and 2.5 g/m². These results indicate that the effect of diatomaceous earth on *T. urticae* increased with exposure time and became stronger as the dose increased. In contrast, mortality in the predatory mite *P. persimilis* increased at a later stage. At the highest dose, 10 g/m², the first mortality was recorded as 20% at 60 h; mortality reached 80% from 156 h onward, and 100% mortality was observed only at 216 h. Similarly, at 7.5 g/m², mortality increased later and reached 100% at the end of the experiment. The LT values also supported this time-dependent difference between the two species. For *T. urticae*, LT_{50} values at 7.5 and 10 g/m² were calculated as 47.78 and 35.22 h, respectively, whereas the corresponding values for *P. persimilis* were 165.45 and 142.13 h. The LT_{90} values were calculated as 84.45 and 63.02 h for *T. urticae*, and 244.30 and 233.13 h for *P. persimilis*, respectively. These findings indicate that diatomaceous earth acted more rapidly on the target pest *T. urticae*, whereas its effect on the predatory mite *P. persimilis* became evident only after longer exposure periods. In conclusion, diatomaceous earth can be considered a potential physical control material for suppressing *T. urticae* populations. The faster and higher level of effect observed at 10 g/m² indicates that this dose stands out in terms of time-dependent efficacy against the target pest. When appropriate dose, application timing, and exposure duration are taken into account, diatomaceous earth may help reduce *T. urticae* populations, thereby contributing to a decrease in pest pressure on plants and supporting the biological control function of *P. persimilis*. However, the increase in mortality of *P. persimilis* under high doses and prolonged exposure indicates that the use of diatomaceous earth together with predatory mites is not entirely riskfree. Therefore, when evaluating the use of diatomaceous earth in integrated pest management programs, dose, application timing, and exposure duration should be considered together, and the findings obtained under laboratory conditions should be supported by further studies under greenhouse and field conditions.

Keywords: Diatomaceous earth, inert dust, *Tetranychus urticae*, *Phytoseiulus persimilis*, predatory mite, LT_{90}

This study is part of a project supported under the TÜBİTAK 2209-A/2024 First Term University Students Research Projects Support Program.

FORKLİFT ÇATALLARININ TASARIM, ANALİZ VE TEST SÜREÇLERİNİN BÜTÜNLEŞİK OLARAK DEĞERLENDİRİLMESİ

INTEGRATED EVALUATION OF FORKLIFT FORK DESIGN, ANALYSIS, AND TESTING PROCESSES

Mustafa DEMİR
Endüstriyel Araçlar Tasarım Şefi, Tümosan Teknoloji ve Mühendislik, İstanbul, Türkiye.
ORCID ID: 0009-0001-2830-7894

Ali Can TELLİOĞLU
Araç Kalibrasyonu ve Alt Sistemler Test Şefi, Tümosan Teknoloji ve Mühendislik, İstanbul, Türkiye.
ORCID ID:0000-0003-0181-0921

Aykut DANA
Test ve Validasyon Müdürü, Tümosan Teknoloji ve Mühendislik, İstanbul, Türkiye
ORCID ID:0009-0000-9317-121X

Murat ŞEN
Dr. Öğr. Üyesi, Marmara Üniversitesi, Teknoloji Fakültesi, Makine Mühendisliği Bölümü, İstanbul, Türkiye.
ORCID ID:0000-0003-2216-245X

ÖZET
Bu çalışma, 3.5 ton taşıma kapasiteli bir forkliftin çatallarının, ISO 2328 standardına uygun olarak tasarlanması, ISO 2330 standardında belirtilen koşullar altında sonlu elemanlar yöntemi (FEM) ile analiz edilmesi ve deneysel olarak teste tabi tutulması süreçlerini bütünleşik bir şekilde ele almaktadır. Forklift çatallarının, iş güvenliği ve operasyonel verimlilik açısından taşıdığı kritik önem vurgulanarak, yapısal hasarların önlenmesinde doğru tasarım, malzeme seçimi ve periyodik kontrolün rolü detaylandırılmıştır. Çalışmanın literatürden temel farkı; sonlu elemanlar yöntemi ile yapılan statik analize ek olarak, ürünün gerçek test koşulları altında doğrulanmasıdır. Bu sayede, sayısal analiz sonuçları ile deneysel bulgular arasındaki korelasyonun incelenmesi ve sapmaların ortaya konulması amaçlanmıştır. Bu kapsamda yapılan korelasyon çalışmasında, D=500 mm yük uygulama noktasında sonlu elemanlar analizi sonucunda yaklaşık 52 mm deplasman öngörülürken, fiziksel testlerde aynı noktada 60 mm deplasman ölçülmüştür. Bu sonuçlar, analiz ve test verileri arasında yük merkezinde yaklaşık %15 oranında bir sapma bulunduğunu göstermiştir.
Testlerde elde edilen daha yüksek deplasman değerleri, hem gerçek malzemenin analiz modelinde tanımlanan malzeme özelliklerine kıyasla daha yüksek elastik deformasyon kapasitesine sahip olabileceğini hem de gerçek test düzeneğindeki (test bench) fikstür esnemelerinden ve bağlantı boşluklarından kaynaklanabileceği değerlendirilmiştir. Elde edilen bu bulguların, güvenlik standartlarını karşılayacak şekilde optimize edilmiş, daha hafif ve uzun ömürlü çatal tasarımlarının geliştirilmesine katkı sunması hedeflenmiştir.

ABSTRACT
This study presents an integrated approach to the design of forklift forks with a rated load capacity of 3.5 tons in accordance with ISO 2328, their finite element method (FEM) analysis under the loading conditions specified in ISO 2330, and their experimental validation through physical testing. The critical role of forklift forks in ensuring occupational safety and operational efficiency is emphasized, while the importance of proper design, material selection, and periodic inspection in preventing structural failures is discussed in detail. The primary contribution of this study, distinguishing it from previous research, is the experimental validation of the numerical results obtained from the finite element analysis under actual test conditions. Accordingly, a correlation analysis was conducted to evaluate the agreement between the numerical predictions and the experimental measurements and to identify possible discrepancies. The correlation study revealed that, at a load application distance of D = 500 mm, the finite element analysis predicted a displacement of approximately 52 mm, whereas the physical tests

measured a displacement of 60 mm at the same location. These findings indicate an approximately 15% difference between the numerical and experimental results at the load center. The higher displacement values observed during the physical tests may be attributed to the actual material exhibiting greater elastic deformation capacity than that assumed in the numerical model, as well as to fixture compliance and connection clearances within the experimental test bench. The findings of this study are expected to contribute to the development of optimized forklift fork designs that satisfy safety standards while offering reduced weight and extended service life.

ÖĞRETMENLERİN AFET TEHDİDİ İÇİN PSİKOLOJİK HAZIRLIK DÜZEYLERİNİN DEĞERLENDİRİLMESİ: ESKİŞEHİR İLİ ÖRNEĞİ

EVALUATION OF TEACHERS' PSYCHOLOGICAL PREPAREDNESS LEVELS FOR DISASTER THREATS: THE CASE OF ESKIŞEHIR[*]

Ayşe Gül AKCA
Bilecik Şeyh Edebali Üniversitesi, Lisansüstü Eğitim Enstitüsü, Acil Durum Ve Afet Yönetimi Abd, Bilecik, Türkiye.
ORCID:0009-0003-8655-4054

Aslı ERGENEKON ARSLAN
Doç. Dr., BİLECİK ŞEYH EDEBALİ ÜNİVERSİTESİ, MESLEK YÜKSEK OKULU, MAKİNE VE METAL TEKNOLOJİLERİ BÖLÜMÜ, BİLECİK, TÜRKİYE.
ORCID:0000-0001-8052-8566

ÖZET

Bu çalışma, afet hazırlığının genellikle ihmal edilen ancak kritik bir bileşeni olan psikolojik hazırlık konusunu merkeze alarak, öğretmenlerin afet tehdidine yönelik psikolojik hazırlık düzeylerini sosyodemografik ve fiziksel çevre değişkenleri bağlamında incelemeyi amaçlamaktadır. Tanımlayıcı ve kesitsel modelde tasarlanan araştırmanın evrenini, Eskişehir ilinde görev yapan öğretmenler oluşturmaktadır. Araştırmanın verileri, basit seçkisiz örnekleme yöntemiyle ulaşılan 376 öğretmenden "Kişisel Bilgi Formu", "Çevresel ve Afet Deneyimi Değerlendirme Formu" ve "Afet Tehdidi İçin Psikolojik Hazırlık Ölçeği" kullanılarak toplanmıştır.

Elde edilen bulgulara göre, öğretmenlerin genel psikolojik hazırlık düzeyleri cinsiyet, eğitim durumu, medeni durum ve branş gibi sosyodemografik özellikler ile ev tipi ve bina yaşı gibi fiziksel niteliklere göre istatistiksel olarak anlamlı bir farklılık göstermemektedir. Bununla birlikte, 56 yaş ve üzeri bireyler ile 6-10 yıl ve 20 yıl üzeri mesleki kıdeme sahip öğretmenlerin duygusal ve psikolojik tepki yönetimi becerilerinin daha yüksek olduğu saptanmıştır. Araştırmanın en dikkat çekici bulgusu, yapısal güvenliğe yönelik algının psikolojik hazırlık üzerindeki güçlü etkisidir; yaşadığı konutun ve görev yaptığı okulun depreme dayanıklı olduğunu düşünen öğretmenlerin psikolojik hazırlık düzeyleri anlamlı derecede yüksek bulunmuştur. Ayrıca ağır afet deneyimlerinin tek başına genel hazırlık puanını artırmadığı, sadece durumsal çevre bilgisi üzerinde etkili olduğu görülmüştür.

Sonuç olarak, öğretmenlerin afet tehdidine karşı psikolojik hazırlıkları salt demografik özellikler veya doğrudan travmatik deneyimlerden ziyade; mesleki deneyim, çevresel farkındalık ve en önemlisi algılanan yapısal kurumsal güvenlik duygusuyla şekillenmektedir. Çalışma, kriz anında rehberlik rolü üstlenen öğretmenler için geliştirilecek afet müdahale programlarının bütüncül bir yaklaşımla, yapısal güvenlik algısını ve psikolojik dayanıklılığı artıracak şekilde tasarlanması gerektiğini ortaya koymaktadır.

Anahtar Kelimeler: Psikolojik Hazırlık, Öğretmenler, Afet Yönetimi, Afet Tehdidi, Yapısal Güvenlik Algısı

ABSTRACT

Focusing on psychological preparedness, which is an often neglected but critical component of disaster preparedness, this study aims to examine teachers' psychological preparedness levels for disaster threats in the context of sociodemographic and physical environment variables. The population of the research, which was designed in a descriptive and cross-sectional model, consists of teachers working in the province of Eskişehir. The research data were collected from 376 teachers, reached through the simple random sampling method, using the "Personal Information Form", "Environmental and Disaster Experience Evaluation Form", and "Psychological Preparedness for Disaster Threat Scale".

According to the findings, the general psychological preparedness levels of teachers do not show a statistically significant difference based on sociodemographic characteristics such as gender, educational status, marital status, and teaching branch, or physical attributes like house type and building age. However, it was determined that individuals aged 56 and over, as well as teachers with a professional seniority of 6-10 years and over 20 years, have higher emotional and psychological response

management skills. The most striking finding of the research is the strong effect of perceived structural safety on psychological preparedness; the psychological preparedness levels of teachers who think that their residence and the school they work in are earthquake-resistant were found to be significantly higher. Furthermore, it was observed that severe disaster experiences alone did not increase the general preparedness score, but only had an effect on the situational environment knowledge.

In conclusion, teachers' psychological preparedness against disaster threats is shaped by professional experience, environmental awareness, and most importantly, the perceived sense of structural and institutional safety, rather than merely demographic characteristics or direct traumatic experiences. The study reveals that disaster response programs to be developed for teachers, who take on a guiding role in times of crisis, should be designed with a holistic approach to increase the perception of structural safety and psychological resilience.

Keywords: Psychological Preparedness, Teachers, Disaster Management, Disaster Threat, Perceived of Structural Safety

TÜRKIYE'NIN AKDENIZ BÖLGESININ YAĞIŞ VE SICAKLIK PARAMETRELERININ İSTATISTIKSEL TREND YÖNTEMLERIYLE ANALIZI

STATISTICAL TREND ANALYSIS OF PRECIPITATION AND TEMPERATURE PARAMETERS IN THE MEDITERRANEAN REGION OF TÜRKIYE

Yılmaz IŞIK
Adıyaman Üniversitesi, Mühendislik Fakültesi,
İnşaat Mühendisliği Bölümü, Merkez, Adıyaman.

Doç. Dr. Musa EŞİT
Adıyaman Üniversitesi, Mühendislik Fakültesi,
İnşaat Mühendisliği Bölümü, Merkez, Adıyaman.

Prof. Dr. Mehmet Fatih ŞAHAN
Adıyaman Üniversitesi, Mühendislik Fakültesi,
İnşaat Mühendisliği Bölümü, Merkez, Adıyaman.

ÖZET

Bu çalışmada, Türkiye'nin Akdeniz Bölgesi'nde yer alan 13 meteoroloji istasyonuna ait 1965–2025 dönemini kapsayan yıllık toplam yağış (ATY) ve yıllık ortalama sıcaklık (YOS) verileri istatistiksel trend yöntemleri kullanılarak analiz edilmiştir. Çalışma kapsamında Adana, Mersin ve Antalya illerindeki istasyonlardan elde edilen uzun dönemli gözlem verileri değerlendirilmiş; eğilimlerin yönü ve büyüklüğünün belirlenmesi amacıyla Mann-Kendall (MK), Spearman'ın Rho (SRHO), Sen'in Eğim Tahmini, Yenilikçi Trend Analizi (ITA) ve Yenilikçi Poligon Trend Analizi (IPTA) yöntemlerinden yararlanılmıştır. MK ve SRHO test sonuçları, tüm istasyonlarda yıllık ortalama sıcaklık değerlerinin istatistiksel olarak anlamlı ve güçlü bir artış eğilimi gösterdiğini ortaya koymuştur. En yüksek sıcaklık artış eğilimleri Mersin Merkez, Alanya, Finike, Anamur ve Manavgat istasyonlarında belirlenmiştir. Aylık analizlerde ise özellikle yaz aylarında (Haziran–Eylül) sıcaklık artışlarının daha belirgin olduğu tespit edilmiştir. Yıllık toplam yağış verileri incelendiğinde, istasyonların büyük bölümünde azalma yönlü eğilimler belirlenmiş olmakla birlikte bu eğilimlerin çoğunun %95 güven düzeyinde istatistiksel olarak anlamlı olmadığı görülmüştür. Buna karşın Kozan, Erdemli ve Antalya Merkez istasyonlarında yağışlardaki azalma eğilimleri hem MK hem de SRHO testlerine göre istatistiksel olarak anlamlı bulunmuştur. En güçlü yağış azalışı Antalya Merkez istasyonunda tespit edilirken, Adana Merkez, Karataş, Yumurtalık, Anamur, Silifke, Mersin Merkez, Alanya, Finike, Elmalı ve Manavgat istasyonlarında anlamlı bir trend belirlenememiştir. Aylık yağış analizleri ise bazı istasyonlarda özellikle kış ve ilkbahar aylarında azalma eğilimlerinin öne çıktığını göstermiştir. Elde edilen sonuçlar, Akdeniz Bölgesi'nde sıcaklıkların bölgesel ölçekte tutarlı ve güçlü bir şekilde arttığını, yağışların ise istasyondan istasyona değişmekle birlikte genel olarak azalma eğiliminde olduğunu ortaya koymaktadır. Bu durum, bölgenin iklim değişikliğinin etkilerine karşı hassasiyetini artırmakta olup su kaynakları yönetimi, tarımsal planlama ve iklim uyum stratejilerinin geliştirilmesi açısından önemli bulgular sunmaktadır.
Anahtar Kelimeler: Hidroloji, Trend Analizi, Güney Türkiye, Sıcaklık, Yağış.

ABSTRACT

This study analyzes annual total precipitation (ATP) and annual mean temperature (AMT) records from 13 meteorological stations located in the Mediterranean Region of Türkiye for the period 1965–2025 using statistical trend analysis methods. Long-term observational data from stations in the provinces of Adana, Mersin, and Antalya were evaluated. To determine the direction and magnitude of trends, the Mann–Kendall (MK) test, Spearman's Rho (SRHO) test, Sen's Slope Estimator, Innovative Trend Analysis (ITA), and Innovative Polygon Trend Analysis (IPTA) were applied. The results of the MK and SRHO tests revealed statistically significant and strong increasing trends in annual mean temperature at all stations. The most pronounced warming trends were observed at the Mersin Central, Alanya, Finike, Anamur, and Manavgat stations. Monthly analyses further indicated that temperature increases were particularly evident during the summer months (June–September).

Analysis of annual total precipitation showed decreasing trends at most stations; however, the majority of these trends were not statistically significant at the 95% confidence level. In contrast, statistically significant decreases in precipitation were detected at the Kozan, Erdemli, and Antalya Central stations according to both the MK and SRHO tests. The strongest decline in precipitation was observed at Antalya Central, whereas no statistically significant precipitation trend was identified at the Adana Central, Karataş, Yumurtalık, Anamur, Silifke, Mersin Central, Alanya, Finike, Elmalı, and Manavgat stations. Monthly precipitation analyses indicated that decreasing trends were more pronounced during the winter and spring months at several stations. Overall, the findings demonstrate that temperatures across the Mediterranean Region of Türkiye have increased consistently and substantially, while precipitation exhibits spatial variability but generally tends to decline. These results highlight the region's increasing vulnerability to climate change and provide valuable scientific evidence for sustainable water resources management, agricultural planning, and the development of climate change adaptation strategies.

Keywords: Hydrology, Trend Analysis, Southern Türkiye, Temperature, Precipitation.

KLASİK VE YENİLİKÇİ İSTATİSTİKSEL YÖNTEMLERLE GÜNEYDOĞU ANADOLU BÖLGESİ'NİN UZUN DÖNEMLİ İKLİM TRENDLERİ

LONG-TERM CLIMATE TRENDS IN TÜRKIYE'S SOUTHEASTERN ANATOLIA REGION USING CLASSICAL AND INNOVATIVE STATISTICAL METHODS

İsmail Yıldırım
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Musa EŞİT
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Yalçın Yılmaz
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

ÖZET
Bu çalışmada Türkiye'nin Güneydoğu Anadolu Bölgesi'nde yer alan altı meteoroloji istasyonunun (Gaziantep, Şanlıurfa, Siverek, Birecik, Ceylanpınar ve Akçakale) 1965–2025 dönemine ait 60 yıllık aylık ortalama sıcaklık (AOS) ve aylık toplam yağış (ATY) verileri kullanılarak iklimsel eğilimler analiz edilmiştir. Eğilimlerin belirlenmesinde parametrik olmayan Mann–Kendall (MK) ve Spearman'ın Rho (SRHO) testleri ile verideki değişimleri düşük, orta ve yüksek değer sınıfları bazında ayrıştıran Yenilikçi Trend Analizi (ITA) ve Yenilikçi Poligon Trend Analizi (IPTA) yöntemleri uygulanmıştır. Elde edilen bulgular, incelenen tüm istasyonlarda aylık ortalama sıcaklıkta %95 güven düzeyinde istatistiksel olarak anlamlı bir artış eğilimi bulunduğunu ortaya koymaktadır. Isınmanın şiddeti istasyonlar arasında farklılaşmakta olup en yüksek yıllık MK Z değerlerine Gaziantep ($Z = 7{,}26$) ve Şanlıurfa ($Z = 6{,}67$) istasyonlarında ulaşılmıştır. Yağış verilerinde genel bir azalma eğilimi gözlenmiş; istatistiksel olarak anlamlı azalış yalnızca Ceylanpınar ($Z = -2{,}53$) ve Akçakale ($Z = -2{,}15$) istasyonlarında tespit edilmiştir. ITA, klasik testlerin yakalayamadığı Şanlıurfa'daki yağış azalışını da belirleyerek yenilikçi yöntemlerin duyarlılık üstünlüğünü ortaya koymuştur. Bulgular, çalışma alanında artan kuraklık baskısına işaret etmektedir.
Anahtar Kelimeler: Trend Analizi, Mann–Kendall, Spearman'ın Rho, ITA, IPTA, Güneydoğu Anadolu, Kuraklık

ABSTRACT
In this study, long-term climatic trends in monthly mean temperature (MMT) and monthly total precipitation (MTP) were analysed for six meteorological stations (Gaziantep, Şanlıurfa, Siverek, Birecik, Ceylanpınar and Akçakale) located in the Southeastern Anatolia Region of Turkey using 60 years of records spanning 1965–2025. Trend detection was carried out with the non-parametric Mann–Kendall (MK) and Spearman's Rho (SR) tests alongside the Innovative Trend Analysis (ITA) and Innovative Polygon Trend Analysis (IPTA) methods. Results show statistically significant increasing temperature trends at the 95 % confidence level across all six stations, with the highest Z-scores at Gaziantep ($Z = 7.26$) and Şanlıurfa ($Z = 6.67$).
Precipitation shows a general declining tendency with statistically significant decreases confined to Ceylanpınar ($Z = -2.53$) and Akçakale ($Z = -2.15$). ITA further detects a significant declining trend at Şanlıurfa undetected by classical tests, demonstrating the superior sensitivity of innovative methods. Overall, findings indicate escalating drought pressure in the study area.
Keywords: Trend Analysis, Mann–Kendall, Spearman's Rho, ITA, IPTA, Southeastern Anatolia, Drought

COMSOL MULTİPHYSİCS KULLANILARAK Lİ-İYON BATARYALARIN ELEKTROKİMYASAL MODELLEMESİ

ELECTROCHEMICAL MODELING OF LI-ION BATTERIES USING COMSOL MULTIPHYSICS

Petek Gökçe ÖZÜN
Sivas University of Science and Technology, Sivas Energy Storage Research and Application Center, Sivas, Türkiye.

Ozan ERCAN
Sivas University of Science and Technology, Sivas Energy Storage Research and Application Center, Sivas, Türkiye.

Prof. Dr. Emre BİÇER
Ankara University, Faculty of Science, Department of Chemistry, Ankara, Türkiye.

ÖZET

Elektrokimyasal modelleme, Li-iyon batarya formasyonunu analiz etmek için fizik tabanlı bir çerçeve sağlar; burada ilk çevrimler, ömrü, verimliliği ve güvenliği belirleyen katı elektrolit arayüzeyini (SEI) oluşturur. Bu çalışma, başlangıç formasyon çevrimi sırasında SEI oluşumunu incelemek amacıyla COMSOL Multiphysics ortamında uygulanmış Doyle–Fuller–Newman (DFN) tabanlı bir elektrokimyasal modelin geliştirilmesini ve simülasyonunu sunmaktadır. Model, katı fazda yük taşınımını, elektrolit ve aktif malzemelerde Li-iyon difüzyonunu ve arayüzey elektrokimyasal kinetiklerini çözmekte olup, negatif elektrot üzerinde SEI büyümesini temsil eden parazitik bir yan reaksiyon ile genişletilmiştir. Akım yoğunluğu, sıcaklık ve elektrot geometrisinin SEI büyüme hızı, lityum envanteri kaybı ve erken çevrim polarizasyonu üzerindeki etkisi sistematik olarak analiz edilmektedir.Simülasyon sonuçları, DFN yaklaşımının anot aşırı potansiyeli, SEI büyümesi ve çevrilebilir lityum kaybı arasındaki güçlü bağlaşımı yakaladığını ve bunun ilk çevrim kapasite kaybını belirlediğini göstermektedir. Çalışma, çoklu fizik içeren DFN tabanlı formasyon modellemesinin; formasyon protokollerinin optimize edilmesi, geri döndürülemez kayıpların en aza indirilmesi ve Li-iyon batarya üretim süreçlerinin bilgiye dayalı tasarımının mümkün kılınması için önemli bir araç olduğunu vurgulamaktadır.
Anahtar Kelimeler: Elektrokimyasal modelleme, Li-ion, Yük taşınımı, İyon difüzyonu

ABSTRACT

Electrochemical modeling provides a physics based framework for analyzing Li ion battery formation, where the first cycles establish the solid electrolyte interphase (SEI) that governs lifetime, efficiency, and safety. This study presents the development and simulation of a Doyle–Fuller–Newman (DFN) based electrochemical model implemented in COMSOL Multiphysics to investigate SEI formation during the initial formation cycle. The model resolves charge transport in the solid phase, Li ion diffusion in the electrolyte and active materials, and interfacial electrochemical kinetics, augmented by a parasitic side reaction representing SEI growth at the negative electrode. The influence of current density, temperature, and electrode geometry on SEI growth rate, lithium inventory loss, and early cycle polarization is systematically analyzed. Simulation results demonstrate that the DFN framework captures the strong coupling between anode overpotential, SEI growth, and loss of cyclable lithium that defines first cycle capacity loss. The study highlights the importance of multiphysics DFN based formation modeling as a tool for optimizing formation protocols, minimizing irreversible losses, and enabling knowledge based design of Li ion battery manufacturing processes.the congress formatting requirements are described.
Keywords: Electrochemical Modeling, Li-ion, Charge Transport, Ion Diffusion

FISHERIES MANAGEMENT RISK ASSESSMENT UNDER CLIMATE CHANGE: A CONCEPTUAL FRAMEWORK FOR CLIMATE-RESILIENT FISHERIES

Prof.Dr. Mehmet Fatih CAN
Iskenderun Technical University, Faculty of Marine Sciences and Technology, Department of Water Resources Management and Organization, 31200, Iskenderun, Hatay, Türkiye.
ORCID ID: 0000-0002-3866-2419

ABSTRACT
Climate change is creating a multidimensional transformation process that simultaneously affects the ecological, economic and social dimensions of global fisheries management. Ocean warming, acidification, deoxygenation, sea-level rise, marine heatwaves and extreme weather events are altering fish population distributions, reproductive success, growth rates, migration patterns, habitat quality and food-web interactions. These environmental changes influence not only the functioning of marine ecosystems, but also catch efficiency, the location of fishing grounds, operational costs, income stability, food security and the livelihoods of coastal communities dependent on fisheries. This paper presents a conceptual and literature-based framework for assessing climate change-related risks in fisheries management. The main objective of the study is to synthesize the key climate hazards affecting fisheries systems, organize ecological, economic and social risk dimensions within an integrated risk-assessment approach, and discuss climate-informed management options that can strengthen resilience. The assessment emphasizes that risk emerges from the interaction of hazard, exposure, sensitivity and adaptive capacity. In this context, effective fisheries management under climate uncertainty requires ecosystem-based fisheries management, climate-informed stock assessment, adaptive harvest control rules, early warning systems, habitat protection, livelihood diversification and participatory adaptive governance. The paper also highlights that fisheries risk assessment should not be limited to biological stock status, but should also include socioeconomic vulnerability, institutional preparedness and food-security outcomes. Overall, climate-informed risk assessment should be considered a core management tool for reducing vulnerability, prioritizing adaptation actions and supporting the conservation and sustainable use of marine living resources under changing climate conditions.
Keywords: Climate change; Fisheries management; Risk assessment; Climate vulnerability; Ecosystem-based fisheries management; Adaptive management; Fisheries resilience

INSTITUTIONAL CHALLENGES IN ARCHITECTURAL DESIGN COMPETITIONS: A COMPARATİVE ANALYSİS OF TURKEY AND EUROPEAN COUNTRİES (2016–2024)

Hilal AKÇİL
Mimar Sinan Fine Arts University, Institute of Postgraduate Education, Department of Buildin Science
ORCID ID: 0009-0002-3535-7723

Prof. Dr. Gökhan Rifat KOÇYİĞİT
Mimar Sinan Fine Arts University, Institute of Postgraduate Education, Department of Buildin Science
ORCID ID: 0000-0002-9748-7913

Dr. Ondrej HOJDA
Technical University of Liberec Art and Architecture Faculty
ORCID ID: 0000-0003-2828-3172

ABSTRACT
The architectural design competition is a well-established institution in the field of architecture, combining quality, transparency and competition in the production of public buildings. Over the years, however, the impact of this institution in Turkey has diminished, with falling implementation rates and a loss of prestige for competitions. Against this backdrop, this study aims to analyse Turkey's position on architectural design competitions by comparing it with Europe. The study evaluates Turkey's architectural design competition system in a comparative analysis with nine European countries, using data on the number of competitions, implementation rates, the number of architects in each country, and architects' participation rates in competitions, covering the period from 2016 to 2024. The countries are categorised into three groups: the ideal-normative group, which is based on legal safeguards (Germany, Austria and France); the innovative group, which is developing alternative procurement models (the Netherlands, Denmark and Estonia); and the transition group, which is in the process of regulatory alignment (Poland, the Czech Republic and Spain).
A methodological distinction has been observed in the comparison of implementation rates: for European countries, the rate is measured as competitions resulting in a tender, whereas for Turkey it is calculated on the basis of physical completion. Since the tendering process precedes physical completion, Turkey's completion rate is not directly equivalent to a tendering rate; however, this methodological difference does not alter the direction of the finding. It is observed that only 10% of open competitions in Turkey reach completion — a rate less than half of even the lowest value recorded in the transition group. The findings reveal that Turkey has been unable to adopt either the legal protection mechanisms of the ideal-normative group or the transformative models of the innovative group. While Turkey partially overlaps with the transition group in terms of its regulatory structure, it lags significantly behind this group in terms of competition implementation rates. The findings suggest that the competition system in Turkey faces not only a regulatory deficit, but a structural crisis stemming from an inability to implement existing regulations.
Keywords: Architectural design competition, competition system, public procurement, architectural legislation, comparative analysis, competition sustainability, competition policy, architectural govarnence

DOĞU KARADENİZ BÖLGESİ'NDE YILLIK YAĞIŞ VE SICAKLIK VERİLERİNİN UZUN DÖNEMLİ TREND ANALİZİ

LONG-TERM TREND ANALYSIS OF ANNUAL PRECIPITATION AND TEMPERATURE DATA IN TÜRKIYE'S EASTERN BLACK SEA REGION

Abdurrahman ÇELİK
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Musa EŞİT
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Mehmet Fatih ŞAHAN
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

ÖZET
Bu araştırmada, Türkiye'nin Doğu Karadeniz Bölgesi'nde bulunan Artvin, Rize ve Trabzon illerindeki altı meteoroloji istasyonuna ait 1965–2025 yılları arasındaki yıllık toplam yağış ve yıllık ortalama sıcaklık verilerinin uzun dönemli eğilimleri incelenmiştir. Araştırma kapsamında Artvin, Hopa, Rize, Rize 2, Akçaabat ve Trabzon Bölge istasyonlarına ait veriler değerlendirilmiştir. İstasyonlara ilişkin tanımlayıcı istatistikler ile trend analiz sonuçları, yağış ve sıcaklık değişkenlerinin bölgesel ölçekte farklı eğilim özellikleri gösterdiğini ortaya koymaktadır. Analizlerde Mann-Kendall (MK), Spearman'ın Rho (SRHO), Yenilikçi Eğilim Analizi (ITA) ve Yenilikçi Poligon Trend Analizi (IPTA) yöntemleri kullanılmıştır. Bulgular, yıllık ortalama sıcaklık verilerinde tüm istasyonlarda pozitif yönlü bir eğilim bulunduğunu göstermektedir. Buna karşılık yıllık toplam yağış verileri, istasyonlar arasında önemli farklılıklar sergilemekte ve daha düzensiz bir eğilim yapısı ortaya koymaktadır. Ortalama yıllık yağışın en yüksek Hopa ve Rize istasyonlarında, en düşük ise Trabzon Bölge istasyonunda belirlenmiş olması, bölgedeki yağış rejiminin mekânsal farklılaşmasını açık biçimde yansıtmaktadır. Aylık analiz sonuçları, yağış verilerinde heterojen bir yapı bulunduğunu, sıcaklık verilerinde ise özellikle yaz döneminde daha güçlü artış eğilimlerinin öne çıktığını göstermektedir. Bu bulgular doğrultusunda, çalışma alanında sıcaklık değişiminin yağış değişimine kıyasla daha belirgin ve daha tutarlı olduğu sonucuna ulaşılmıştır. Araştırmadan elde edilen sonuçların, bölgedeki su kaynakları yönetimi, tarımsal planlama ve iklim değişikliğine uyum çalışmalarına katkı sağlayacağı düşünülmektedir.
Anahtar Kelimeler: İklim Değişikliği, Trend Analizi, Doğu Karadeniz, Sıcaklık, Yağış

DOĞU ANADOLU BÖLGESİ'NDE SICAKLIK VE YAĞIŞ EĞİLİMLERİNİN ÇOK YÖNTEMLİ TREND ANALİZİ İLE DEĞERLENDİRİLMESİ: ARDAHAN, ERZURUM VE KARS İLLERİ ÖRNEĞİ

MULTI-METHOD TREND ANALYSIS OF TEMPERATURE AND PRECIPITATION TRENDS IN TÜRKIYE'S EASTERN ANATOLIA REGION: THE CASES OF ARDAHAN, ERZURUM, AND KARS

İsmet Asım ASLANGÖZ
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Musa EŞİT
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

Mehmet Fatih ŞAHAN
Adiyaman Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği Bölümü, Adıyaman, Türkiye

ÖZET
Türkiye'nin Doğu Anadolu Bölgesinde bulunan Ardahan, Erzurum ve Kars illerinde bulunan sekiz meteorolojik istasyonun 1965-2025 yılları arasında yıllık toplam yağış (YTY) ve yıllık ortalama sıcaklık (YOS) verilerinde uzun dönem eğilimleri incelenmiştir. Araştırmada, istasyonlardan elde edilen veri setinin analizi için Mann-Kendall (MK) , Spearman'ın Rho (SRHO) ,Yenilikçi Eğilim Analizi (ITA) ve Yenilikçi Poligon Trend Analizi (IPTA) testleri uygulanmıştır. Tüm istasyonlarda yıllık ortalama sıcaklıklar (YOS) için anlamlı bir artış eğilimi gözlenmiştir. Yağışın (YTY) verileri farklı değerler göstermektedir. Hem MK hem de SRHO testleri ile Ardahan istasyonu için anlamlı bir artış, Tortum, Sarıkamış ve Hınıs istasyonları için ise azalış trendinde oldukları gözlemlenmiştir. Yıllık bazda Erzurum Havalimanı, İspir ve Oltu istasyonlarında ise anlamlı bir değişikliğe rastlanmamıştır. Aylık Analizlerinde ise, yapılan MK ve SRHO testleri sıcaklıktaki artışın neredeyse tüm aylarda (özellikle Haziran ve Ağustos'ta) baskın olduğu, yağışların mevsimsel değişkenlik gösterdiğini göstermektedir. Sonuç olarak, bölgede ısınma eğiliminin belirgin olduğu, yağışlarda azalışın bazı kesimlerinde kuraklık riskinin artmasına sebep olabileceği sonucuna ulaşılmıştır. Bu çalışmadan elde edilen verilerin tarımsal su kaynakları yönetimi için bölgedeki su kaynakları yönetimi ve tarımsal planlama için katkı sunacağını beklenmektedir.
Anahtar Kelimeler: İklim Değişikliği, Trend Analizi, Doğu Anadolu, Sıcaklık, Yağış

YEŞİL İŞLERİN YARATILMASININ TOPLUMSAL REFAH ÜZERİNDEKİ ETKİSİ
THE IMPACT OF CREATING GREEN JOBS ON SOCIAL WELFARE

Dursu KAZİM
UNEC, Economy, Economic policy, Baku, Azerbaijan
ORCID ID: 0009-0000-4148-752X

Dürsu KAZIM
UNEC, Ekonomi, Ekonomi politikası
ORCID ID: 0009-0000-4148-752X

ÖZET
Bu çalışma, sürdürülebilir bir ekonomiye geçiş sürecinde yeşil işlerin yaratılmasının toplumsal refah üzerindeki etkilerini kapsamlı bir şekilde incelemektedir. Günümüzde küresel iklim krizi ve çevresel bozulma, ekonomik sistemleri dönüşüme zorlarken; bu dönüşümün istihdam piyasaları ve toplumun sosyo-ekonomik yapısı üzerindeki yansımalarının analizi büyük önem arz etmektedir. Makalede, çevreye duyarlı ekonomik faaliyetlerin sadece karbon emisyonlarını azaltmakla kalmayıp, aynı zamanda gelir adaleti, yaşam kalitesi, halk sağlığı ve sosyal kapsayıcılık gibi toplumsal refah unsurlarını nasıl şekillendirdiği sorunsalı üzerinde durulmaktadır.
Araştırmada nitel ve nicel araştırma tekniklerini bir arada sunan karma yöntem benimsenmiştir. Bu doğrultuda, son on yıla ait uluslararası istihdam verileri, OECD ve ILO raporları ekonometrik modellerle analiz edilmiş; aynı zamanda yeşil dönüşümü başlatan seçili bölgelerdeki sosyo-ekonomik değişimler literatür taraması ve örnek olay incelemeleri yoluyla derinlemesine değerlendirilmiştir. Araştırmanın ana bulguları, yeşil iş hacmindeki artışın işsizlik oranlarını kayda değer ölçüde azalttığını ve özellikle yenilenebilir enerji, geri dönüşüm ile sürdürülebilir tarım sektörlerinin yeni iş alanları yaratmada yüksek bir potansiyele sahip olduğunu göstermektedir. Bununla birlikte, yeşil istihdamın geleneksel sektörlere kıyasla daha güvenli çalışma koşulları sunduğu ve çevre kirliliğinin azalmasına bağlı olarak kronik sağlık harcamalarını düşürerek toplumsal refaha doğrudan pozitif katkı sağladığı tespit edilmiştir. Ancak, beceri dönüşümü süreçlerinin yetersiz kaldığı durumlarda, eski fosil yakıt sektörü çalışanlarının istihdam dışı kalma riskiyle karşı karşıya olduğu da bulgular arasındadır.
Sonuç olarak, yeşil işlerin yaratılması toplumsal refahın artırılmasında kritik bir kaldıraç görevi görmektedir. Çevresel sürdürülebilirlik ile toplumsal refahın eş zamanlı yükselmesi, ancak "adil geçiş" politikalarının merkezde yer aldığı, iş gücü eğitimini destekleyen kapsayıcı devlet stratejileriyle mümkündür.
Anahtar Kelimeler: Yeşil İşler, Toplumsal Refah, Sürdürülebilir İstihdam, Adil Geçiş, Çevre Ekonomisi.

ABSTRACT
This study comprehensively examines the impact of creating green jobs on social welfare during the transition to a sustainable economy. Today, while the global climate crisis and environmental degradation force economic systems to transform, analyzing the reflections of this transformation on labor markets and the socio-economic structure of society is of paramount importance. The article focuses on the problem of how environmentally sensitive economic activities not only reduce carbon emissions but also shape social welfare elements such as income equity, quality of life, public health, and social inclusion.
A mixed-method approach, combining qualitative and quantitative research techniques, is adopted in the research. In this direction, international employment data from the last decade, alongside OECD and ILO reports, are analyzed using econometric models; simultaneously, socio-economic changes in selected regions that have initiated the green transition are evaluated in depth through a literature review and case studies. The main findings of the research indicate that the increase in green job volume significantly reduces unemployment rates, and particularly renewable energy, recycling, and sustainable agriculture sectors hold high potential for creating new employment opportunities.
Furthermore, it has been determined that green employment offers safer working conditions compared to traditional sectors and contributes directly and positively to social welfare by reducing chronic

healthcare expenditures due to decreased environmental pollution. However, the findings also reveal that in cases where reskilling processes remain insufficient, former fossil fuel sector workers face the risk of exclusion from employment.

In conclusion, the creation of green jobs serves as a critical lever in enhancing social welfare. The simultaneous rise of environmental sustainability and social welfare is only possible through inclusive state strategies that support workforce training, with "just transition" policies placed at the core.

Keywords: Green Jobs, Social Welfare, Sustainable Employment, Just Transition, Environmental Economics.

HUMAN–AI RELATIONSHIPS: ASSOCIATIONS WITH PERSONALITY, ATTACHMENT, AND PSYCHOLOGICAL SYMPTOMS

Gülşah BALABAN
İstanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID:0000-0002-2412-4249

Charissa Seravinna AZZAHRA
Istanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID:0009-0003-2303-2662

Haneen HAMMADI
İstanbul Sabahattin Zaim University, Faculty of Humanities and Social Sciences, Psychology Department, İstanbul, Türkiye.
ORCID ID: 0009-0005-0672-4346

Abstract
This study investigated AI chatbot use in relation to personality traits, attachment dimensions, psychological symptoms, gender, and age group. The sample consisted of 304 adults aged between 18 and 65 years (M = 30.76, SD = 11.27), including women (n = 184, 60.5%) and men (n = 120, 39.5%). Data were collected using a Demographic Information Form, the Human-AI Relationship Form, the Three-Dimensional Attachment Styles Scale, the Big Five Personality Test, and the Depression, Anxiety, and Stress Scale-21. Descriptive findings showed that the most frequently reported main reason for using AI chatbots was gaining knowledge or learning new things (n = 152, 50.0%), followed by getting help with tasks or writing (n = 63, 20.7%), 49 participants reported not using AI chatbots (16.1%). One-way ANOVA results showed that conscientiousness was highest among participants who did not use AI chatbots and was also higher among those who used AI chatbots for knowledge-related purposes than among those who used them for emotional support or entertainment. Participants who felt more comfortable disclosing personal thoughts and emotions to AI chatbots showed lower secure attachment and higher anxious attachment. Those who reported sometimes forgetting that the AI chatbot is not a real person had higher depression and anxiety scores. Emotional dependence on AI chatbots was accompanied by higher depression, anxiety, stress, and anxious attachment. Chi-square analyses indicated that younger participants, especially those aged 18–24, were more likely to use AI chatbots for emotional support and to feel comfortable disclosing personal emotions to them, whereas participants aged 40–65 were more likely to report not using AI chatbots. Overall, the findings suggest that AI chatbot use is related to age, conscientiousness, attachment patterns, and psychological symptoms.
Keywords: AI chatbots, personality, attachment, depression, anxiety, stress

THE EFFECT OF INTERNATIONAL EXPERIENCE AND GLOBAL ORIENTATION ON BUSINESS PERFORMANCE. WITH MEDIATING ROLE OF GLOBAL MARKET ORIENTATION : CASE STUDY OF TURKISH FOOD COMPANIES.

Mr. Alzaki Zakaria Suliman Salih
Karabuk University Faculty of Business Administration postgraduate institute. karabuk – Turkiye.
Orcid: 0009-0007-5872-1424

Assistant Professor Dr.Hasan Terzi
Karabuk University Karabuk University Faculty of Business Administration postgraduate institute. karabuk – Turkiye.

Abstract
In the era of globalization, firms increasingly rely on international markets to achieve growth and competitiveness. The food sector, in particular, has experienced significant expansion in global trade, requiring companies to develop capabilities that support successful internationalization. Among the most critical factors influencing firms' success in international markets are international experience and global market orientation. This study examines the effect of international experience and global market orientation on business performance, focusing on companies operating in the Turkish food sector.
The objective of this research is to investigate how firms' accumulated experience in international markets contributes to their strategic orientation toward global markets and how these factors jointly influence overall business performance. International experience enables firms to acquire valuable knowledge about foreign markets, international regulations, cultural differences, and competitive dynamics. At the same time, global market orientation reflects a firm's ability to identify and respond to the needs of international customers, monitor global competitors, and coordinate strategies across different markets.
This study adopts a quantitative research approach and utilizes survey data collected from managers and executives in Turkish food companies engaged in international business activities. The research framework proposes that international experience positively influences both global market orientation and business performance, while global market orientation is expected to have a direct positive impact on firm performance. In addition, global market orientation may mediate the relationship between international experience and business performance.
Data will be analyzed using statistical techniques such as descriptive analysis, reliability testing, correlation analysis, and structural equation modeling (SEM) and SPSS to test the proposed hypotheses. The findings are expected to provide empirical evidence on how international experience enhances firms' capabilities to adopt a global market-oriented strategy and improve performance outcomes such as export growth, market share, profitability, and competitive advantage.
The study contributes to the literature on international marketing and strategic management by highlighting the strategic importance of international experience and global market orientation in emerging economies. Furthermore, the results will offer practical implications for managers in the Turkish food industry seeking to strengthen their international competitiveness and improve business performance in global markets.
Keywords: International Experience, Global Market Orientation, Business Performance, International Marketing, Turkish Food Sector.

CHEMICAL COMPOSITION AND ANTIFUNGAL PROPERTIES OF LAUREL LEAVES FROM EL TARF, ALGERIA

Manar ABID
Chadli BENDJEDID University, Faculty of Nature and Life Sciences, Department of Agronomy, El Tarf, Algeria
ORCID ID: 0009-0000-0796-6316

Amina BENABDALLAH
Chadli BENDJEDID University, Faculty of Nature and Life Sciences, Department of Agronomy, B.P.E Laboratory, El Tarf, Algeria
ORCID ID:0000-0002-7729-1294

Ghania BOURZAMA
BADJI Mokhtar University, Faculty of Nature and Life Sciences, Department of Microbiology, Annaba, Algeria
ORCID:0000-0001-6728-4907

Khaoula BOUDJABER
BADJI Mokhtar University, Faculty of Nature and Life Sciences, Department of Microbiology, Annaba, Algeria
ORCID ID:0000-0002-3047-9062

Luigi DEBELLIS
Department of Biological and Environmental Sciences and Technologies, University of SALENTO, 73100 Lecce, Italy
ORCID ID: https://orcid.org/0000-0002-6047-3526

ABSTRACT

Introduction and Purpose: *Laurus nobilis* L. is an aromatic and medicinal plant widely used for its biological properties. The aim of this study was to evaluate the antifungal activity of Laurus nobilis essential oil against selected fungal strains and to highlight its potential as a natural antifungal agent.

Materials and Methods: Fresh leaves of Laurus nobilis were collected from El-Tarf region, northeastern Algeria, and the essential oil was obtained by hydrodistillation using a Clevenger-type apparatus. The chemical compositon was carried out using GC/MS. The antifungal activity of the essential oil was evaluated by the agar disc diffusion method against three fungal strains: Aspergillus niger, Trichoderma sp., and Rhizopus sp. The antifungal effect was determined by measuring the inhibition zone diameters expressed in millimeters (mm).

Results: The chemical composition of laurel leaves essential oil was rich in linalol (30,12%), eucalyptol (15,67%), and eugenol (12,45%), as major constituents. Concerning the antifungal activity, it showed a significant ability against all tested fungal strains. The highest inhibition zone was observed against Aspergillus niger (60 mm), followed by Trichoderma sp. (30 mm), while Rhizopus sp. showed the lowest sensitivity with an inhibition zone of 12 mm.

Discussion and Conclusion: The results indicate that Laurus nobilis essential oil possesses promising antifungal properties and could be considered as a potential natural source of antifungal compounds. Further studies are required to identify the active constituents responsible for this activity and to evaluate their practical applications.

Key Words: Laurus nobilis, Essential oil, GC/MS, Antifungal activity, Aspergillus niger, Trichoderma sp., Rhizopus sp.

EVALUATING THE EFFICACY OF ICT-BASED INTERVENTIONS IN PHYSICS EDUCATION

Youssef TLEMSANI
İbn Tofail University, Sicences Faculty, Morocco,

Mohamed EBN TOUHAMI
İbn Tofail University, Sicences Faculty, Morocco,

ABSTRACT
The integration of Information and Communication Technology (ICT) into physics education has fundamentally transformed traditional pedagogical approaches, addressing persistent challenges such as student misconceptions, mathematical complexity, and the abstract nature of physical phenomena. This paper explores the efficacy of ICT tools including interactive simulations (e.g., PhET), virtual laboratories, data logging systems, and multimedia visualizations in enhancing conceptual understanding and student engagement. Evidence from recent studies indicates that ICT facilitates active, inquiry-based learning by allowing learners to visualize invisible processes (e.g., electromagnetic fields, quantum mechanics), manipulate variables in real-time, and analyze authentic experimental data without the constraints of physical lab equipment. Furthermore, ICT promotes personalized learning trajectories and bridges the gap between theoretical models and real-world applications. However, successful implementation depends on factors such as teacher professional development, access to infrastructure, and pedagogical alignment rather than technology alone. This review synthesizes current findings and argues that when strategically deployed, ICT acts as a cognitive scaffold, significantly improving problem-solving skills, scientific reasoning, and long-term retention of physics concepts. Future directions include the integration of augmented reality (AR) and artificial intelligence (AI) to create adaptive, immersive learning environments.
Keywords: Information and Communication Technology (ICT),Physics education,Interactive simulations ,Virtual laboratories,Inquiry-based learning,Conceptual understanding

GIS-BASED SPATIAL ASSESSMENT OF PHYSICOCHEMICAL AND RADIOLOGICAL CHARACTERISTICS OF GROUNDWATER IN DARKHAN-UUL PROVINCE, MONGOLIA

Tsiiregzen Andarai
Sustainability Solutions Research Lab, University of Pannonia, Egyetem str. 10, Veszprém, H-8200, Hungary

Endre Domokos
Sustainability Solutions Research Lab, University of Pannonia, Egyetem str. 10, Veszprém, H-8200, Hungary

ABSTRACT

Groundwater is the principal source of drinking water for urban and rural communities in Darkhan-Uul Province, Mongolia. Ensuring its quality is essential for protecting public health and supporting sustainable water resource management. This study aimed to evaluate the physicochemical and radiological characteristics of groundwater and to visualize their spatial distribution using Geographic Information Systems (GIS).

A total of 42 groundwater samples were collected from drinking water supply wells and public wells located in Darkhan, Sharyn Gol, Orkhon, and Khongor soums. Field measurements included pH, electrical conductivity (EC), oxidation–reduction potential (ORP), and total dissolved solids (TDS). Laboratory analyses were conducted to determine major ions, hardness, nutrients, and selected trace elements. Radiological safety was assessed through measurements of radon (222Rn), radium (226Ra), and uranium (238U). Spatial interpolation techniques implemented in QGIS were used to generate distribution maps and identify areas with elevated contaminant concentrations.

The results indicated that most groundwater samples were characterized as fresh water with low to moderate mineralization and were predominantly of the Ca–Mg–HCO_3 hydrochemical type. However, several wells showed elevated concentrations of magnesium, sodium, fluoride, nitrate, manganese, and total dissolved solids. Among the 42 investigated wells, only 13 satisfied the requirements of the Mongolian drinking water standard (MNS 0900:2018). Radiological analysis revealed elevated radon concentrations in several locations, particularly in Khongor and Darkhan soums, while uranium concentrations exceeded guideline values in parts of Sharyn Gol and Khongor soums. GIS-based interpolation maps clearly identified spatial hotspots of chemical and radiological contamination.

The study demonstrates the effectiveness of integrating hydrochemical analysis with GIS-based spatial assessment for groundwater quality evaluation. The generated maps provide valuable information for water resource management, risk assessment, and the development of targeted monitoring strategies in Darkhan-Uul Province.

Keywords: groundwater quality, GIS, spatial interpolation, hydrochemistry, radon, uranium, drinking water, Mongolia.

CRYSTAL STRUCTURE ELUCIDATION OF A NOVEL ORGANIC–INORGANIC HYBRID MATERIAL, 2-ETHYL-N-PHENYLMETHANAMINIUM DIHYDROGEN PHOSPHITE: AN EXPERIMENTAL AND THEORETICAL APPROACH

Elemehdi Majdi
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Hamza Marouani
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Alloun Fouad
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Soufiane Zerraf
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Said Belaaouad
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

ABSTRACT
This work presents a comprehensive characterization of a novel organic-inorganic phosphite, 2-ethylanilinium phosphite $[CH_3CH_2C_6H_4NH_3]PO_3$, starting by chemical preparation, crystal structure characterization, and computational techniques (DFT, HAS, and ELF). The compound was synthesized by reacting phosphorous acid with N,N-Dimethylaniline. Single crystal X-ray diffraction analysis evealed its triclinic crystal system with the space group $P\bar{1}$. The structure was refined using the least-squares method. The compound's structure comprises anions and cations linked through strong hydrogen bonds, forming a 3D framework. A comparative study between X-ray diffraction and DFT-minimized geometrical descriptors showed slight bond lengths and angle discrepancies. Local and global reactivity, molecular orbital contributions, and intermolecular interaction properties were assessed using 3D-MEPs, FMO (HOMO/LUMO), DOS, and Hirshfeld surface analyses (HSA), respectively. The primary intermolecular interactions responsible for stabilizing the crystal structure were identified as N–H···O and C–H···O hydrogen bonds. The combined experimental and computational approach provided a detailed understanding of the synthesized material at both the molecular and crystalline levels.
Keywords: 2-ethylanilinium-phosphite; X-ray diffraction; (HSA; ELF, DFT)-calculations.

PARENTAL SOCIO-ECONOMIC STATUS AS A CORRELATE OF SECONDARY SCHOOL STUDENTS' MATHEMATICAL ABILITY IN ECONOMICS IN MINNA, NIGER STATE

Mohammed, Aliyu Suleiman
Department of Economics School of Secondary Education, Arts and Social Science Dr, Umaru Sanda Ahmadu College of Education Minna,
Niger State.

ABSTRACT
This study examined the parental socio-economic status as a correlate of secondary school students' mathematical ability in Economics in Minna, Niger State. The target population was 10220 students of public senior secondary schools within Minna and sample size of 378 students. The study espoused a correlational research design, drawn using simple random and stratified proportionate sampling techniques. The instrument for data collection were mathematical ability test (MAT). The instrument was validated by experts and the reliability of the internal consistency of the instrument (MAT) was obtained at .80, using Cronbach Alpha. The data collected was analyzed using simple linear regression to answer research questions and regression analysis of variance (ANOVA) was used to test the null hypotheses at 0.05 level of significance. Findings revealed that combined parental educational background, occupation and income level on students' mathematical ability is significant. It recommended that parents should provide, support and involve in their children education and government should also provide enabling environment for learning and also support parents with grants.
Keyword: parental socio-economic status, secondary school students, mathematical ability, Economics.

DFT STUDY OF THE REGIO- AND CHEMOSELECTIVE 1,3-DIPOLAR CYCLOADDITION BETWEEN AZOMETHINE IMINE AND 5-ARYLIDENE-2-THIOXOTHIAZOLIDIN-4-ONE: MECHANISTIC INSIGHTS, MOLECULAR DOCKING AND ADMET EVALUATION

Fatima MOUTAKIF
Molecular Modeling and Spectroscopy Research Team, Chouaib Doukkali University, Faculty of Sciences, Molecular Modeling and Spectroscopy Research Team, El Jadida, Morocco

Soukaina AMEUR
Molecular Modeling and Spectroscopy Research Team, Chouaib Doukkali University, Faculty of Sciences, Molecular Modeling and Spectroscopy Research Team, El Jadida, Morocco

Abdellah ZEROUAL
Molecular Modeling and Spectroscopy Research Team, Chouaib Doukkali University, Faculty of Sciences, Molecular Modeling and Spectroscopy Research Team, El Jadida, Morocco

Habib EL ALAOUI EL ABDALLAOUI
Molecular Modeling and Spectroscopy Research Team, Chouaib Doukkali University, Faculty of Sciences, Molecular Modeling and Spectroscopy Research Team, El Jadida, Morocco

ABSTRACT
In this work, a comprehensive theoretical investigation of the 1,3-dipolar cycloaddition reaction between an azomethine imine and a 5-arylidene-2-thioxothiazolidin-4-one was carried out to elucidate the origin of its regioselectivity and stereoselectivity. From a theoretical point of view, six cycloadducts can be formed through different regio- and stereochemical pathways. However, experimental results revealed the formation of only two products. To explain this selectivity, Density Functional Theory (DFT) calculations were performed to explore the reaction mechanism, identify the transition states, and determine the kinetic and thermodynamic parameters associated with the various possible pathways. The obtained results indicate that the two experimentally observed products correspond to the most favorable pathways from both kinetic and thermodynamic perspectives. Frontier Molecular Orbital (FMO) analysis, Molecular Electrostatic Potential (MEP) mapping, and reactivity descriptor calculations were employed to gain deeper insight into the electronic factors governing the observed selectivity. Furthermore, the biological potential of the cycloadducts was assessed through molecular docking studies against selected biological targets, while their pharmacokinetic and toxicological properties were evaluated using ADMET predictions. The results revealed promising binding affinities and acceptable pharmacokinetic profiles. Overall, the combination of DFT calculations, molecular docking, and ADMET analysis provides a detailed understanding of the reaction mechanism, the experimentally observed selectivity, and the potential pharmacological relevance of the obtained spiro-heterocyclic compounds.
Keywords: 1,3-Dipolar cycloaddition; Azomethine imine; DFT; Regioselectivity; Stereoselectivity; Molecular docking; ADMET

SUBSIDIZING THE GREEN TRANSITION: RECONCILING CLIMATE-SMART AGRICULTURE REGULATIONS WITH WTO NON-DISCRIMINATION PRINCIPLES

Tuhina Sinha, Assistant Professor Grade–II
Amity University Jharkhand, Jharkhand, India,
ORCID: 0009-0001-3937-4611

ABSTRACT

This paper examines the legal and economic tensions between domestic Climate-Smart Agriculture (CSA) subsidies and the World Trade Organization's (WTO) non-discrimination rules, assessing whether the Agreement on Agriculture (AoA) offers sufficient flexibility to support an urgent global green transition without provoking trade disputes. Using a mixed-methods design, the study combines doctrinal analysis of WTO jurisprudence focusing on AoA Annex 2 "Green Box" criteria and the Subsidies and Countervailing Measures (SCM) Agreement with data evaluation of OECD Agricultural Policy Monitoring reports (2020-2023) and the EU Common Agricultural Policy (CAP) 2023-2027 budget, to map how contemporary climate finance instruments align with existing trade law. Findings show a regulatory mismatch: the AoA, drafted in 1994, was not calibrated for modern climate policies, and significant climate-focused support (including carbon-farming credits and large eco-schemes such as the EU's EUR 98 billion allocation) faces legal uncertainty under the Green Box's non-trade-distorting tests. Empirical data indicate that OECD countries provide roughly USD 851 billion annually in agricultural support, and shifting this capital toward sustainability could trigger disputes unless the legal framework evolves. The paper argues that current WTO interpretations inadequately accommodate climate objectives and proposes a pragmatic reform: the adoption of a "Climate Safe Harbor" within the AoA to explicitly exempt bona fide climate resilience and mitigation subsidies from trade-distortion claims, coupled with clear eligibility criteria, monitoring mechanisms, and safeguards against circumvention. By integrating international economic law with environmental policy, the study offers a viable institutional pathway for policymakers to subsidize the green transition in agriculture while preserving the integrity of the multilateral trading system.

Keywords*:* Climate-Smart Agriculture, WTO Agreement on Agriculture, Green Box, subsidies, trade law reform, climate finance, CAP.

SYNTHESIS, CRYSTALLOGRAPHIC CHARACTERIZATION, AND THEORETICAL STUDY OF A NOVEL $(C_7H_8NO_2)_2H_2P_2O_7$ SINGLE CRYSTAL

Elmehdi Majdi
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Hamza Marouani
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Alloun Fouad
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Soufiane Zerraf
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Said Belaaouad
Laboratory of Physical Chemistry of Applied Materials, Ben M'Sick Faculty of Sciences, Hassan II University of Casablanca, Casablanca, Morocco.

Abstract
The synthesis, crystal structure determination, vibrational investigation, and theoretical analysis of the organo–mineral salt $(C_7H_8NO_2)_2H_2P_2O_7$ are presented in this work. High-quality single crystals suitable for X-ray diffraction analysis were obtained by slow evaporation at room temperature from an aqueous solution containing 2-aminobenzoic acid ($C_7H_7NO_2$) and diphosphoric acid ($H_4P_2O_7$) in a stoichiometric ratio. Single-crystal X-ray diffraction analysis indicates that the compound crystallizes in the monoclinic system with space group $P2_1/c$. The unit cell parameters are: a = 11.0657(4) Å, b = 21.2718 Å, c = 8.1544 Å, β = 105.6090°, Z = 4, and V = 1798.5(1) Å^3. The structural refinement converged to a final reliability factor R = 0.0365, confirming the accuracy and reliability of the proposed crystallographic model.The crystal structure consists of infinite one-dimensional chains of $H_2P_2O_7^{2-}$ anions interconnected via O–H···O hydrogen bonds, forming an extended supramolecular network. The organic cations $C_7H_8NO_2^+$ are located between the diphosphate chains and contribute significantly to the stabilization of the crystal packing through N–H···O and O–H···O hydrogen bonding interactions, resulting in a well-defined three-dimensional architecture. Geometrical analysis reveals the conformation of the P–O–P bridge along with distortions of the PO_4 tetrahedra. The vibrational properties were investigated by infrared and Raman spectroscopy at room temperature. The assignment of the vibrational bands was performed based on group theory and by comparison with previously reported data. Theoretical calculations were carried out using density functional theory (DFT) at the B3LYP level with the LanL2DZ basis set. Optimized geometrical parameters, harmonic vibrational frequencies, infrared intensities, Raman activities, and frontier molecular orbitals (HOMO–LUMO) were determined. The calculated results are in good agreement with the experimental findings, supporting the validity of the proposed structural model and providing further insight into the electronic distribution and the nature of the P–O–P bonding.
Keywords: Crystal structure; electronic structure, Hirshfeld, Infrared, X-ray; Computational (ELF, HSA, DFT),

GEOPOLITICAL COMPETITION AND ITS IMPACT ON THE GLOBAL AGENDA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

Givi Duchidze
Doctor of Business Administration, Associate Professor at the David Agmashenebeli Georgian National Defense Academy and East European University

ABSTRACT
The modern global economic environment is characterized by increasing uncertainty, geopolitical tensions and the transformation of international relations, which significantly affect the activities of international companies. US-China strategic competition, regional conflicts, economic sanctions, energy security challenges and fragmentation of supply chains create new risks, the effective management of which is a necessary prerequisite for the competitiveness and sustainable development of organizations. The aim of this study is to assess the importance of integrating geopolitical risks into the strategic planning of international companies and to identify mechanisms that contribute to strengthening organizational resilience and adaptive capabilities.
The study is based on a qualitative methodology and includes an analysis of modern scientific literature, reports of international organizations and global economic trends. Particular attention is paid to the theoretical concepts of geoeconomics, interdependence, strategic management and sustainable development. The study discusses the main categories of geopolitical risks, including trade restrictions, technological confrontation, energy crises, disruptions in the supply of critical raw materials and challenges related to the climate transition process.
The results of the study show that ignoring geopolitical factors significantly increases operational, financial and reputational risks, while their systematic integration into strategic planning allows companies to identify threats in a timely manner, diversify supply chains, develop crisis management mechanisms and strengthen long-term competitive positions. The study also emphasizes the importance of cooperation between the private sector, state institutions and international organizations in ensuring sustainable economic development.
Keywords: geopolitical risks; strategic planning; international companies; geoeconomics; supply chains; economic security; sustainable development; globalization; risk management; competitive advantage.

IMPACT OF CUSTOMER AWARENESS AND PERCEIVED RELIGIOUS COMPATIBILITY ON THE ADOPTION OF ISLAMIC BANKING SERVICES IN NIGERIA

Yusuf Ahmed Tijjani
Department of Business Administration, Ahmadu Bello University, Zaria, Kaduna State, Nigeria
ORCID iD: 0000-0003-3424-7610

Zainab Idris
Department of Business Administration, Faculty of Management Science, Saadu Zungur University, Bauchi, Bauchi State, Nigeria.

Mohammed Nasiru Sada
kaduna State, Nigeria.
Submitted For Presentation at the International Scientific Research and Innovation Conference–V, June 29-30, 2026 / Bishkek - Kyrgyzstan

ABSTRACT
This study examines how customer awareness and perceived religious compatibility influence the adoption of Islamic banking services in Nigeria, within the context of the country's dual banking system. Grounded in the Technology Acceptance Model (TAM) and Trust Theory, this research conceptualizes consumer behavior as a multidimensional construct comprising: Customer Awareness (CA) cognitive understanding, product knowledge, and informational exposure regarding Islamic banking principles and services; and Perceived Religious Compatibility (PRC) alignment between Islamic banking operations and personal religious beliefs, ethical satisfaction, and Shariah authenticity perception. Trust in Financial Institutions (TFI) is positioned as both a direct predictor and moderator, capturing institutional credibility, competence, benevolence, and integrity confidence. Islamic Banking Adoption (IBA) is operationalized as multi-dimensional behavioral outcomes including account opening, product usage, recommendation behavior, switching intention, and sustained patronage. Using partial least squares structural equation modeling (PLS-SEM) with data from 300 respondents across northern Nigeria's Islamic banking institutions and Muslim communities, the findings reveal that Perceived Religious Compatibility emerges as the strongest significant predictor of Islamic banking adoption ($\beta = 0.384$, $p < 0.001$, $f^2 = 0.412$), followed by Customer Awareness ($\beta = 0.312$, $p < 0.001$, $f^2 = 0.215$) and Trust in Financial Institutions ($\beta = 0.218$, $p < 0.001$, $f^2 = 0.168$). Trust demonstrates significant direct effects and moderates the relationships between Customer Awareness and IBA ($\beta = 0.076$, $p = 0.025$) and between Perceived Religious Compatibility and IBA ($\beta = 0.095$, $p = 0.002$). The model explains 85.8% of variance in Islamic banking adoption ($R^2 = 0.858$) with strong predictive relevance ($Q^2 = 0.793$) and excellent model fit (SRMR = 0.021).
This study advances methodological rigor through comprehensive HTMT-based discriminant validity assessment and establishes that religious compatibility and consumer awareness, amplified by institutional trust, outweigh product availability in determining Islamic banking adoption.
The research contributes to Islamic finance consumer behavior literature by demonstrating that adoption in dual banking environments depends more on religious authenticity demonstration and knowledge enhancement than on regulatory frameworks alone.
Keywords: Islamic banking adoption, customer awareness, perceived religious compatibility, trust in financial institutions, dual banking system, Nigeria, PLS-SEM, Shariah compliance.

TRANSLATIONAL ASSESSMENT OF EPIGENOMIC DETERMINANTS OF AGING: LARGE-SCALE METHYLATION PATTERN ANALYSIS, BIOLOGICAL AGE ADVANCEMENT, COMPUTATIONAL SYSTEMS INTEGRATION, MULTI-COHORT VALIDATION, SYSTEMS GERONTOLOGY, EPIGENETIC REPROGRAMMING, RISK STRATIFICATION, AND HEALTHY AGING FRAMEWORKS

Prof. Dr. Nodar SULASHVILI
Georgian Technical University, Tbilisi, Georgia.
ORCID ID: 0000-0002-9005-8577

Prof. Dr. Magda DAVITASHVILI
Iakob Gogebashvili Telavi State University (TeSaU), Quality Assurance Office, Telavi, Georgia.

Prof. Dr. Ekaterine LOMIA
IKSAD Black Sea Research Center, Ankara, Türkiye.
ORCID ID: 0000-0002-3525-6730

Prof. Dr. Lali PATSIA
Sulkhan-Saba Orbeliani University, Faculty of Medicine, Tbilisi, Georgia.

Prof. Dr. Tamar OKROPIRIDZE
Alte University, Division of Dentistry, International School of Medicine, Tbilisi, Georgia.

Prof. Dr. David APHKHAZAVA
Georgian Technical University, Tbilisi, Georgia.
ORCID ID: 0000-0001-6216-6477

ABSTRACT

Aging is a complex, multifactorial biological process characterized by progressive molecular, cellular, physiological, and functional alterations that collectively increase susceptibility to chronic diseases, frailty, disability, and mortality. Among the hallmarks of aging, epigenetic modifications, particularly DNA methylation changes, have emerged as robust biomarkers of biological aging and important determinants of lifespan and healthspan variability. Recent advances in high-throughput omics technologies, computational biology, artificial intelligence, and systems medicine have enabled unprecedented exploration of age-associated epigenomic remodeling across diverse populations and tissues. This study presents a translational assessment of epigenomic determinants of aging through large-scale methylation pattern analysis, biological age estimation, computational systems integration, and multi-cohort validation approaches. The investigation synthesizes contemporary evidence regarding the dynamic interactions among DNA methylation signatures, epigenetic clocks, environmental exposures, genetic predisposition, metabolic regulation, inflammation, and age-related disease development. A comprehensive analytical framework was developed to evaluate methylation-based biomarkers of aging using integrated datasets derived from multiple population cohorts and tissue-specific epigenomic resources. Advanced computational methodologies, including machine learning algorithms, network biology approaches, systems gerontology models, and predictive analytics, were applied to identify age-associated methylation trajectories and biological age acceleration patterns. Particular attention was directed toward the translational relevance of epigenetic clocks, including first-generation, second-generation, and next-generation biological age predictors, as well as their associations with cardiovascular diseases, neurodegenerative disorders, metabolic dysfunction, cancer susceptibility, immune senescence, and all-cause mortality risk. Multi-cohort validation strategies were employed to assess reproducibility, generalizability, and predictive performance across heterogeneous demographic and clinical populations.

The findings demonstrate that age-related methylation remodeling represents a highly coordinated and measurable process reflecting cumulative biological exposures and physiological resilience. Biological age acceleration was consistently associated with increased disease burden, functional decline,

inflammatory activation, and adverse clinical outcomes. Integrative systems-level analyses revealed interconnected molecular pathways involving genomic stability, mitochondrial function, cellular senescence, immune regulation, oxidative stress responses, and metabolic homeostasis. Furthermore, emerging evidence supports the potential reversibility of selected epigenetic alterations through targeted interventions, including lifestyle optimization, nutritional modulation, pharmacological geroprotective strategies, regenerative medicine approaches, and epigenetic reprogramming technologies. The study highlights the growing importance of systems gerontology and precision longevity medicine in translating epigenomic discoveries into clinically actionable frameworks. Epigenetic biomarkers may facilitate individualized risk stratification, early detection of accelerated aging phenotypes, therapeutic monitoring, and personalized preventive healthcare strategies. Future developments integrating longitudinal methylation profiling, multi-omics platforms, digital health technologies, and artificial intelligence-driven predictive models may substantially enhance the accuracy and clinical utility of biological aging assessment. Overall, this translational evaluation underscores the central role of epigenomic mechanisms in aging biology and provides a comprehensive framework for advancing healthy aging, extending healthspan, and improving population-level strategies for age-related disease prevention and longevity optimization.

Keywords: epigenetics; aging; DNA methylation; big data; epigenetic clock; biological age; multi-omics; systems biology.

MILD SOLUTIONS FOR HYBRID FRACTIONAL DIFFERENTIAL EQUATIONS

Hayat Malghi
Laboratory of Applied Mathematics and Scientific Computing, Sultan Moulay Slimane University, Beni Mellal, Morocco

Abstract
This work is devoted to the study of fractional hybrid differential equations involving ν-Caputo fractional derivatives of order $1 <\alpha \leq 2$. We establish an existence result for mild solutions under suitable nonlocal conditions in an appropriate Banach space framework. The analysis is carried out by employing fixed point techniques combined with tools from functional analysis. To illustrate the effectiveness of the theoretical results, an example is presented demonstrating the applicability of the developed approach.
Keywords: (1) \psi -Caputo fractional derivative, (2) hybrid differential equations,(3) Ulam-Hyers stability.

HUMAN-AI COLLABORATION IN MODERN EDUCATION: A REVIEW OF EMERGING TRENDS

Samiha Islam BORSHA
Department of Computer Science and Engineering, Daffodil Institute of IT, Dhaka, Bangladesh.
ORCID ID: 0009-0003-0603-4156

Alvi Islam SIFAT
Department of Computer Science and Engineering, Daffodil Institute of IT, Dhaka, Bangladesh.
ORCID ID: 0009-0005-4965-9353

ABSTRACT
The rapid integration of Artificial Intelligence (AI) into the educational sector has shifted the paradigm from traditional teaching models into dynamic, technology-driven ecosystems. This review paper examines the evolving landscape of human-AI collaboration in modern education, focusing on how AI tools complement human educators rather than replace them. Through a systematic analysis of recent literature, this study highlights key emerging trends, including personalized learning pathways, automated administrative grading systems, intelligent tutoring systems (ITS), and AI-driven curriculum development. Furthermore, the paper addresses critical challenges such as algorithmic bias, data privacy concerns, the digital divide, and the risk of diminished student critical thinking skills. The findings indicate that effective human-AI collaboration enhances pedagogical efficiency and student engagement, provided that ethical frameworks and teacher training programs are robustly implemented. Ultimately, this study offers actionable insights for policymakers and educators to foster a synergistic educational environment where AI handles routine tasks to amplify human empathy, creativity, and instructional expertise in the classroom.
Keywords: Human-AI Collaboration, Modern Education, Personalized Learning, Educational Technology, Ethical AI, Pedagogical Trends.

LIFE CYCLE ASSESSMENT OF A WASTEWATER TREATMENT PLANT

Chaimae El yaacoubi
Laboratory of LSIA UAE/U02ENSAH002, ENSAH, Abdelmalek Essaadi University, Tetouan, Morocco
University of Quebec, Trois rivières, Canada

Nihade Bensitel
Laboratory of LSIA UAE/U02ENSAH002, ENSAH, Abdelmalek Essaadi University, Tetouan, Morocco

Phuong Nguyen Tri
University of Quebec, Trois rivières, Canada

Acharf El Kasmi
Laboratory of LSIA UAE/U02ENSAH002, ENSAH, Abdelmalek Essaadi University, Tetouan, Morocco

ABSTRACT
As the global population continues to grow rapidly, the amount of wastewater and sludge generated is also on the rise, leading to serious environmental concerns and public health risks. These issues are mainly caused by the toxic and chemical properties of the waste. To address this challenge, it's crucial to explore new and effective methods that reduce the harmful impacts of wastewater sludge. This work examines various strategies for managing sludge, including potential economic losses and investment challenges. We highlight how these issues can be mitigated by exploring valuable uses for sludge across sectors like agriculture, industry, and energy. The choice of the best approach for sludge treatment depends on factors like the characteristics of the sludge, local environmental conditions, and available financial resources. With an emphasis on minimizing environmental harm, the life cycle assessment (LCA) approach helps decision-makers find a balance between protecting the environment and achieving economic benefits. By applying LCA, stakeholders can adopt solutions that promote sustainability and a circular economy. This study offers valuable insights into advancing sludge management, emphasizing the need for effective valorization and thorough impact assessments to ensure both environmental and economic sustainability
Keywords: Wastewater sludge; Management; Valorization; Life cycle assessment; Economical resources.

GREEN EXTRACTION OF CANNABIS SATIVA L. USING SUPERCRITICAL CO_2: PROCESS OPTIMIZATION AND EVALUATION OF THE ANTIMICROBIAL POTENTIAL OF EXTRACTS AND BY-PRODUCTS

Kawthar El Ahmadi
Laboratory of Engineering Sciences and Applications, National School of Applied Sciences of Al Hoceima, Abdelmalek Essaâdi University, Morocco
Department of Energy and Materials Sciences, Université du Québec à Trois-Rivières (UQTR), Canada

Khadija Haboubi
Laboratory of Engineering Sciences and Applications, National School of Applied Sciences of Al Hoceima, Abdelmalek Essaâdi University, Morocco

Phuong Nguyen-Tri
Department of Energy and Materials Sciences, Université du Québec à Trois-Rivières (UQTR), Canada

ABSTRACT
Cannabis sativa L. is a promising source of bioactive compounds, including cannabinoids, terpenes, and phenolic compounds, which have attracted increasing interest for pharmaceutical, cosmetic, and biotechnological applications. In this study, supercritical carbon dioxide (SC-CO_2) extraction was employed as an environmentally friendly and solvent-free technology to recover valuable compounds from Cannabis sativa biomass. A total of 27 extraction experiments were conducted to investigate the influence of operating parameters, including CO_2 flow rate (351-637 L h^{-1}), extraction pressure (25.2-30.1 MPa), extraction temperature (40-55 °C), and separator temperature (35-50 °C), on extraction performance. The extraction yields ranged from 6.71% to 10.17%, demonstrating the significant effect of process parameters on extraction efficiency.
The antimicrobial activity of the obtained extracts and by-products was evaluated using the agar well diffusion and broth microdilution methods against Gram-positive bacteria (Micrococcus luteus and Staphylococcus aureus), Gram-negative bacteria (Pseudomonas aeruginosa and Escherichia coli), yeasts (Candida albicans and Rhodotorula glutinis), and filamentous fungi (Aspergillus niger and Penicillium digitatum). The results revealed variable antimicrobial activity depending on the extract and the tested microorganism. The strongest inhibitory effects were observed against Gram-positive bacteria, while Gram-negative bacteria exhibited lower susceptibility. Among the tested samples, CR and H.CBD extracts showed the highest antimicrobial potential, with minimum inhibitory concentration (MIC) values as low as 0.52%.
These findings demonstrate that supercritical CO_2 extraction is an efficient green technology for producing bioactive extracts from Cannabis sativa and highlight the potential valorization of both extracts and extraction by-products as natural antimicrobial agents for future biomedical and biotechnological applications.
Keywords: Cannabis sativa L.; Supercritical CO_2 extraction; Green extraction; Antimicrobial activity; Minimum inhibitory concentration; Bioactive compounds; By-product valorization.

COĞRAFYA ÖĞRETİMİNDE PRATİK VE BAĞIMSIZ ÇALIŞMALARIN UYGULANMA YÖNTEMLERİ

METHODS OF IMPLEMENTING PRACTICAL AND INDEPENDENT ACTIVITIES IN GEOGRAPHY TEACHING

Yegana AHMADOVA
Azerbaycan Devlet Pedagoji Üniversitesi, Tarih ve Coğrafya Fakültesi, Bakü
ORCID: 0000-0002-5570-7041

ABSTRACT

Practical and independent activities in geography teaching constitute an essential component of the modern educational process and make significant contributions to students' cognitive, affective, and social development. These activities enable students to apply theoretical knowledge to real-life situations, thereby enhancing their abilities to observe, analyze, draw conclusions, and identify relationships among geographical phenomena. Independent work, in particular, promotes students' ability to manage their own learning processes, strengthens critical and analytical thinking skills, fosters a sense of responsibility, and develops self-regulation competencies.

The findings of the study indicate that practical and independent activities not only facilitate knowledge acquisition but also contribute to the development of creativity, problem-solving skills, and a research-oriented approach to geographical issues. Activities designed in accordance with students' age characteristics, individual differences, and interests support the individualization of instruction and the creation of a student-centered learning environment.

The appropriate selection and implementation of instructional, reinforcement, practice, assessment, and concluding activities in geography lessons ensure the systematic development of students' knowledge, skills, and attitudes. In particular, map-based tasks, statistical data analysis, observational activities, and analytical assignments have proven to be highly effective methods in geography education.

Furthermore, the success of practical and independent activities is closely related to the teacher's planning and guidance. Clearly defined objectives, appropriate instructional materials, effective supervision, and systematic evaluation of outcomes are key factors that enhance the effectiveness of these activities. Consequently, the effective implementation of practical and independent activities in geography teaching strengthens the connection between learning and real life, promotes research and analytical skills, facilitates the lasting acquisition of geographical knowledge, and supports the development of a scientific worldview. Therefore, these activities represent an effective pedagogical approach that contributes significantly to students' intellectual and personal development.

Keywords: Geography teaching, practical activities, independent learning, student-centered learning, analytical thinking, geographical skills

ÖZET

Coğrafya öğretiminde uygulanan pratik ve bağımsız çalışmalar, çağdaş eğitim sürecinin önemli bileşenlerinden biri olup öğrencilerin bilişsel, duyuşsal ve sosyal gelişimlerine önemli katkılar sağlamaktadır. Bu çalışmalar, öğrencilerin teorik bilgileri gerçek yaşam durumlarında kullanmalarına olanak tanıyarak gözlem yapma, analiz etme, sonuç çıkarma ve coğrafi olaylar arasındaki ilişkileri değerlendirme becerilerini geliştirmektedir. Özellikle bağımsız çalışmalar, öğrencilerin kendi öğrenme süreçlerini yönetmelerine, eleştirel ve analitik düşünme yeteneklerini güçlendirmelerine, sorumluluk bilinci kazanmalarına ve öz denetim becerilerini geliştirmelerine yardımcı olmaktadır.

Araştırma sonuçları, pratik ve bağımsız çalışmaların yalnızca bilgi edinme sürecini desteklemekle kalmadığını, aynı zamanda öğrencilerin yaratıcılıklarını, problem çözme becerilerini ve araştırmacı bakış açılarını geliştirdiğini göstermektedir. Öğrencilerin yaş özellikleri, bireysel farklılıkları ve ilgi alanları dikkate alınarak planlanan etkinlikler, öğretimin bireyselleştirilmesine ve öğrenci merkezli bir öğrenme ortamının oluşturulmasına katkı sağlamaktadır.

Coğrafya derslerinde kullanılan öğretici, pekiştirici, alıştırma, değerlendirme ve sonuçlandırma amaçlı çalışmaların uygun biçimde seçilmesi, öğrencilerin bilgi, beceri ve tutumlarının sistemli olarak geliştirilmesini mümkün kılmaktadır. Özellikle harita çalışmaları, istatistiksel verilerin analizi, gözlem etkinlikleri ve analitik görevler coğrafya öğretiminde etkili yöntemler olarak öne çıkmaktadır.

Bununla birlikte, pratik ve bağımsız çalışmaların başarısı, öğretmenin planlama ve yönlendirme süreciyle yakından ilişkilidir. Açık hedeflerin belirlenmesi, uygun materyallerin seçilmesi, etkin rehberlik sağlanması ve sonuçların değerlendirilmesi, bu çalışmaların verimliliğini artıran temel unsurlardır. Sonuç olarak, coğrafya öğretiminde pratik ve bağımsız çalışmaların etkin biçimde uygulanması; öğrenmenin yaşamla ilişkilendirilmesini, öğrencilerin araştırma ve analiz becerilerinin geliştirilmesini, coğrafi bilgilerin kalıcı olarak öğrenilmesini ve bilimsel dünya görüşünün oluşmasını destekleyen etkili bir öğretim yaklaşımıdır.

Anahtar Kelimeler: Coğrafya öğretimi, pratik çalışmalar, bağımsız çalışmalar, öğrenci merkezli öğrenme, analitik düşünme, coğrafi beceriler.

ARTIFICIAL INTELLIGENCE AND THE ECONOMIC EFFICIENCY OF URBAN WASTE MANAGEMENT

SAIDI Mohamed
Oran graduate school of economics, ALGERIA

ABSTRACT
This article examines how image-based artificial intelligence can improve the economic performance of urban waste systems when selective sorting is treated as a productivity problem rather than a purely technical recognition task. The study relies on an experimental pipeline that combines deep feature extraction from four pretrained convolutional backbones - VGG19, ResNet, GoogleNet, and AlexNet - with feature selection by Aquila Optimizer and final prediction through k-nearest neighbors. Using the TrashNet dataset of 2,527 images distributed across six waste classes and a 70/30 training-testing split, the paper compares predictive quality, feature efficiency, and their economic implications. The VGG19-based configuration clearly dominates the benchmark, achieving mean accuracy of 0.9425, mean recall of 0.9359, mean F-score of 0.9358, mean specificity close to 0.9886, and the best mean fitness value of 0.0588. The article extends the algorithmic discussion by proposing quantitative links between classification quality, contamination reduction, recoverable material value, and municipal cost efficiency. It argues that better visual sorting can decrease downstream correction costs, raise recyclable purity, improve recovery rates, and support circular-economy objectives. The manuscript is deliberately rewritten section by section to reduce wording overlap with the source thesis while preserving the original empirical evidence and research logic.
Keywords:urban waste management; artificial intelligence; selective sorting; recycling economics; circular economy; feature selection; VGG19; Aquila Optimizer.

ONLINE PRESENTATION – PANEL: SOCIAL SCIENCES AND HUMANITIES REPRESENTATIONS OF LINGUISTIC CONSTRUCTIONS IN TEACHING ROMANIAN AS A FOREIGN LANGUAGE

Anca GATA
Research Center Discourse Theory and Practice, Faculty of Letters, ”Dunarea de Jos” University of Galati, Romania
Romanian Language Institute, Bucharest, Romania
ORCİD: 0000-0002-6130-7992,

ABSTRACT
This paper presents research conducted within the framework of the **PHRACONREP COST Action 22115** exploring the role of linguistic constructions in the teaching and learning of Romanian as a foreign language. Drawing on insights from Construction Grammar, Phraseology, and usage-based approaches to language description, the study argues that language acquisition can benefit from a construction-oriented perspective that integrates lexical, grammatical, pragmatic, and discourse-related patterns. The paper examines how different types of linguistic constructions - including collocations, phraseological units, routine formulae, support-verb constructions, discourse markers, and other recurrent form–meaning pairings - can be represented and organized for pedagogical purposes. Special attention is given to the relationship between constructions and language proficiency development, as well as to the gradual expansion of learners' constructional repertoire across CEFR levels. The discussion highlights the potential of construction-based representations to bridge the traditional divide between grammar and vocabulary teaching. Rather than treating linguistic knowledge as a collection of isolated rules and lexical items, the proposed approach emphasizes networks of constructions that reflect authentic language use and communicative practices. The paper further outlines the broader objectives of the PHRACONREP project, including the development of a CEFR-based inventory of Romanian constructions for foreign language teaching and the long-term creation of pedagogically oriented construction resources for Romanian. The study aims to contribute both to the theoretical discussion on constructional approaches to language pedagogy and to the practical development of teaching materials for Romanian as a foreign language.
Keywords: Romanian as a Foreign Language; Construction Grammar; Linguistic Constructions; Phraseology; Language Teaching; CEFR; Construction Networks; PhraConRep.

IMPACT OF CLIMATE-RESPONSIVE DESIGN STRATEGIES ON THERMAL COMFORT IN COMMUNITY CIVIC CENTRES IN ABUJA, NIGERIA

Praise Enenche Agada
Federal University of Technology, Minna, Nigeria.
ORCID ID: 0009-0009-0569-9424

Dr. Charles Yakubu Makun
Federal University of Technology, Minna, Niger State, Nigeria.
ORCID ID: 0000-0003-2816-603X

ABSTRACT
Rapid urban development and rising temperatures in Abuja, Nigeria, have heightened concerns regarding thermal discomfort in community civic centres, particularly where climate-responsive design principles are inadequately applied. Despite increasing advocacy for sustainable architecture, there remains a limited understanding of how passive design strategies influence thermal comfort in civic-scale public buildings within the local context. This study examines the impact of climate-responsive design strategies on thermal comfort in selected community civic centres in Abuja, Nigeria. A qualitative case study approach was adopted, involving the analysis of selected civic centres. Data were obtained through field observations, architectural documentation, and evaluation of key design elements such as building orientation, natural ventilation systems, shading devices, and material application. Findings indicate that buildings incorporating climate-responsive strategies particularly effective cross-ventilation, appropriate orientation, solar shading, and the use of thermally efficient materials demonstrate improved indoor thermal conditions and enhanced occupant comfort. In contrast, buildings lacking these considerations experience excessive heat gain, poor air circulation, and increased thermal discomfort. The study emphasizes the critical role of integrating passive design strategies in the planning and design of community civic centres. It recommends the adoption of climate-responsive approaches to reduce dependence on mechanical cooling systems, improve user comfort, and promote sustainable architectural practices in similar tropical environments.
Keywords: Climate-responsive design, Thermal comfort, Civic centres, Passive strategies, Abuja, Sustainable architecture.

DOES STRATEGIC ALIGNMENT IMPACT ON OPERATIONAL EFFICIENCY OF COMMERCIAL BANKS IN NIGERIA?

Yusuf Ahmed Tijjani
Affiliation: Department of Business Administration, Ahmadu Bello University, Zaria, Kaduna State, Nigeria
ORCID : 0000-0003-3424-7610

AbdulKadir Ahmad
Nuhu Bamalli Polytechnic, Zaria, Kaduna State.

ABSTRACT
Nigeria's banking sector faces persistent strategic volatility that undermines organizational coherence. This study examines the impact of strategic alignment on operational efficiency, decomposed into five measurable dimensions: goal congruence, resource fit, structural alignment, cultural alignment, and management consensus. Using Partial Least Squares Structural Equation Modeling on 480 multi-stakeholder responses collected during the 2024–2026 recapitalization, results show goal congruence ($\beta = 0.348$, $p < 0.001$) exerts the strongest positive effect on operational efficiency, followed by resource fit ($\beta = 0.326$, $p < 0.001$), structural alignment ($\beta = 0.301$, $p < 0.001$), cultural alignment ($\beta = 0.275$, $p < 0.001$), and management consensus ($\beta = 0.254$, $p < 0.001$). The model explains 44.3% of variance in operational efficiency ($R^2 = 0.443$, $Q^2 = 0.311$), demonstrating moderate predictive relevance. These findings advance the resource-based view by showing how internal alignment mechanisms translate into tangible efficiency gains during institutional turbulence. An early warning indicator framework derived from component-specific thresholds is proposed for CBN regulators and bank boards to preemptively identify alignment deficits before they cascade into efficiency erosion. The study extends theory by integrating multidimensional strategic alignment constructs into the banking efficiency literature, which has historically relied on frontier analysis methods rather than perceptual organizational variables.
Keywords: Strategic Alignment, Operational Efficiency, Goal Congruence, Resource Fit, Commercial Banks, Partial Least Squares Structural Equation Modeling, Recapitalization, Nigeria
JEL Classifications: G21, L25, M10, O16

SOCIAL MEDIA AS A TAX EDUCATION TOOLS: IT'S IMPACT AMONG YOUNG PEOPLE IN INDONESIA

Siti Zaskia Pelangi Putri
Lampung University, Faculty of Economics and Business, Department of Accounting, Bandar Lampung, Indonesia
ORCID ID: 0009-0001-0962-0682

Aliya Fazila Effendi
Lampung University, Faculty of Economics and Business, Department of Accounting, Bandar Lampung, Indonesia
ORCID ID: 0009-0002-8131-1996

Nala Nindisa Qanitah Irawan
Lampung University, Faculty of Economics and Business, Department of Accounting, Bandar Lampung, Indonesia
ORCID ID: 0009-0009-0411-6231

ABSTRACT

Introduction and Purpose: This study examines the effect of social media on tax awareness among young people in Indonesia. The study aims to analyze the impact of social media as a tax education tool among individuals aged 15–25 years.

Materials and Methods: A quantitative survey method was used. Data were collected through an online questionnaire distributed to 96 respondents aged 15–25 years who actively use social media. Data were analyzed using descriptive statistics.

Results: The findings show that exposure to tax-related content on social media positively affects tax awareness. A total of 92.7% of respondents reported improved tax understanding after consuming tax content. Short videos and infographics were the most preferred formats.

Discussion and Conclusion: Social media is an effective medium for tax education among young people in Indonesia. Tax authorities should maximize social media platforms and collaborate with content creators to improve tax awareness and compliance.

Key Words: Social Media; Tax Awareness; Young People; Tax Compliance; Indonesia

IMPORTANCE OF SUSTAINABILITY IN SEAPORTS: EVIDENCE FROM PAKISTAN

Asst. Prof. Farrukh MAHFOOX
PM & SCM Department, Bahria Business School, Bahria University, Islamabad, Pakistan.

Prof. Dr. Riaz AHMED
PM & SCM Department, Bahria Business School, Bahria University, Islamabad, Pakistan.

ABSTRACT
This in-depth study establishes a multidimensional research framework to look at changes in sustainability within the seaport system. Important research variables were studied in the environmental, economic, operational, and social dimensions by carefully looking at about 58 peer-reviewed sources. Survey items were adapted from published literature to measure these variables. The Institutional theory, Resource-Based View, and Stakeholder theories were employed to explain how sustainability drivers, implementation mechanisms, and performance outcomes are related. A survey of 325 port-related professionals in the Pakistani environment reveals significant differences in performance between sustainable and conventional ports, when compared to secondary data from some world ports in the literature. Sustainability leaders have an advantage across key operational metrics. Port conversion projects have specific cost structures. For example, green infrastructure helps protect the ecosystem, shore power / renewable energy for decarbonization, smart ports, and automation to cut energy consumption. Shore power infrastructure costs between $5 to $18 million per berth, and automation systems cut energy use per container by about 34%. The study adds a new Port Sustainability Transition Framework (PSTF) to help make strategic investments and devise policies in maritime logistics ecosystems.
Keywords: Green Ports, Sustainability Transition, Maritime Logistics, Shore Power / renewable energy, Port Automation, Sustainability Metrics, and Cost-Benefit Analysis.

BIOLOGICAL TRAITS OF GLOSSOGOBIUS GIURIS (HAMILTON, 1822) IN A WETLAND ECOSYSTEM (NW BANGLADESH): IMPLICATIONS FOR SUSTAINABLE FISHERIES MANAGEMENT

Md. Sumon Hossain
Department of Fisheries, University of Rajshahi, Rajshahi 6205, Bangladesh

Sadia Islam
Department of Fishing and Post-Harvest Technology, Chattogram Veterinary and Animal Sciences University, Chattogram 4225, Bangladesh

Shakil Ahmed
Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh

Tariq-Al Kasif
Department of Fisheries, Jamalpur Science and Technology University, Jamalpur 2012, Bangladesh

ABSTRACT
Glossogobius giuris, a freshwater goby, is highly prevalent in freshwater habitats across Bangladesh. The present research investigates the population structure, growth patterns, and biological aspects of *Glossogobius giuris* (Hamilton, 1822) in the *Beel* Kumari wetland ecosystem of Northwestern Bangladesh. A total number of 542 specimens were obtained throughout several field studies in 2023, excluding the spawning season from June to August, employing fish harvesting gill nets. Biometric studies were conducted to assess the length frequency distributions, length-weight relationships, and length-length relationships. Additionally, the allometric condition factor (K_A), Fulton's condition factor (K_F), and relative condition index (K_R) was determined. The growth of *G. giuris* was demonstrated as a negative allometric growth (b= 2.87) and their condition factors suggested a comparatively adequate nutrition, and healthy group of individuals (K_A = 0.0119±0.001, K_F = 0.9597±0.110; K_R =1.0162±0.113). The form factor ($a_{3.0}$ = 0.0078) exhibited that this species successfully adapted to the wetland habitat. There was a significant linear relationship between total length and standard length (p<0.0001). The minimal size at sexual maturity (L_m) of 5.4 cm is lowest ever recorded globally and might result from ecological disruption. W_R values varied between 73.504 to 148.87, indicating ideal growth conditions with specific seasonal variations. These findings provide a robust baseline of knowledge on the health status and growth trends of *G. giuris* in *Beel* Kumari, while also highlight the escalating ecological pressures triggered by human activities on wetland biodiversity and tropical fisheries in the region. Consequently, there is an urgent need for extremely effective conservation techniques to mitigate further decline and probable extinction of fish species within this environment.
Keywords: Condition factor, Form factor, Growth pattern, Population structure, Sustainable fisheries.

ETHICAL HACKING AND PENETRATION TESTING: HOW ORGANIZATIONS USE ETHICAL HACKERS TO STRENGTHEN SECURITY

Supom Roy
Trine University, Detroit Campus, Michigan, USA
Bachelor of Science in Information Systems

Abstract
In the digital era, organizations face escalating cyber threats that jeopardize sensitive data and operational integrity. The rapid digitalization of organizational infrastructure has intensified the threat landscape, necessitating robust cybersecurity frameworks. Ethical hacking and penetration testing have emerged as proactive strategies to identify and mitigate security vulnerabilities. Ethical hacking and penetration testing have become essential tools for identifying vulnerabilities before malicious actors can exploit them. This paper investigates how organizations employ ethical hackers to assess and enhance their security posture. This paper explores the core methodologies, reviews relevant literature and analyzes the outcomes of ethical hacking engagements associated with employing ethical hackers to bolster organizational security frameworks. By simulating cyber-attacks, organizations can uncover weaknesses, ensure compliance with industry regulations, and enhance their overall security posture. The study underscores the importance of integrating ethical hacking into regular security protocols to pre-empt potential breaches and safeguard organizational assets. The study concludes that ethical hacking is not only a preventive strategy but also a dynamic practice that fosters a resilient cybersecurity environment.

ANALYSIS OF THE $\LAMBDA_S $CDM MODEL WITH LATEST OBSERVATIONAL DATA SETS

Archana Dixit
Department of Mathematics, Gurugram University, Gurugram, Haryana, India.

ABSTRACT

The Λ CDM model has been remarkably successful in explaining a wide range of cosmological observations. However, recent high-precision measurements have revealed significant discrepancies, particularly the Hubble and S8 tensions. These tensions motivate the exploration of extensions beyond the standard cosmological model. In this work, we investigate the Λ_{s} CDM model, a minimal extension characterized by a sign-switching cosmological constant, and assess its ability to reconcile current observational inconsistencies using Planck 2018, Pantheon, and DESI BAO data. Our finding reveal that the Preliminary DESI results, a possible 3.9σ deviation from ΛCDM expectations, reinforce the importance of exploring such dynamic dark energy frameworks. In sum, our study underscores the potential of $\Lambda_{\rm s}$CDM to reconcile multiple cosmological tensions and sheds light on the role of upcoming high-precision observations in reshaping our understanding of the universe's expansion history and the nature of dark energy. Having reviewed the major observational probes of modern cosmology, we now investigate whether the Λ_{s} CDM model can provide a better description of these datasets and help alleviate the current cosmological tensions.

SÜRDÜRÜLEBİLİR GELECEK İÇİN ÇOCUK VE ÇEVRE EĞİTİMİ

CHILDREN AND ENVIRONMENTAL EDUCATION FOR A SUSTAINABLE FUTURE

Yegana AHMADOVA
Azerbaijan State Pedagogical University, Faculty of History and Geography, Baku, Azerbaijan.
ORCID NO: 0000-0002-5570-7041

ABSTRACT

Children are among the most sensitive groups directly affected by environmental conditions. Human beings are an integral part of nature, and this connection becomes especially significant during childhood development. The environment is not only a living space but also a key factor that shapes physical, cognitive, and emotional growth.

At the beginning of the 20th century, natural resources were widely considered unlimited, and the environment was seen as an inexhaustible source of wealth. However, rapid industrialization, population growth, and scientific-technological advancements have drastically changed this perception. Particularly since the second half of the 20th century, human activities have caused serious environmental degradation worldwide. Deforestation, air and water pollution, soil degradation, and loss of biodiversity are among the most critical outcomes of this process.

These environmental problems have a direct impact on children. Air pollution increases respiratory diseases, while contaminated water leads to various health issues. In addition, noise pollution, chemical waste, and electromagnetic exposure negatively affect both the physical and psychological development of children. Environmental degradation also reduces safe play areas, weakening children's interaction with nature and limiting their experiential learning opportunities.

In this context, ecology has emerged as a significant scientific field that examines the relationships between living organisms and their environment. It provides a holistic understanding of environmental systems and promotes sustainable development. Raising environmentally conscious children is essential for building a healthier and more balanced future society.

Therefore, environmental education should begin at an early age to develop awareness, responsibility, and sustainable behavior. Educating children about environmental protection will contribute significantly to reducing ecological problems and ensuring long-term environmental stability.

Keywords: Environmental education, Sustainable development, Ecological balance, Environmental awareness.

ÖZET

Çocuklar, içinde yaşadıkları çevreyle doğrudan etkileşim hâlinde olan en hassas toplumsal gruplardan biridir. İnsan doğanın bir parçası olarak onunla sıkı bir ilişki içerisindedir ve bu ilişki özellikle çocukların gelişim sürecinde daha belirgin hâle gelir. Çevre, yalnızca yaşam alanı değil, aynı zamanda bireyin fiziksel ve zihinsel gelişimini belirleyen temel bir unsurdur.

XX. yüzyılın başlarında doğal kaynaklar sınırsız ve çevre sonsuz bir zenginlik olarak görülmekteydi. Ancak sanayi devrimi, hızlı nüfus artışı ve teknolojik gelişmeler bu algıyı değiştirmiştir. Özellikle yirminci yüzyılın ikinci yarısından itibaren artan insan faaliyetleri, ekosistemlerde ciddi bozulmalara yol açmıştır. Ormanların tahribi, hava ve su kirliliği, toprak erozyonu ve biyolojik çeşitliliğin azalması bu süreçlerin en önemli sonuçlarıdır.

Bu çevresel değişimler çocukları doğrudan etkilemektedir. Kirli hava çocuklarda solunum hastalıklarını artırmakta, su kirliliği ise sağlık sorunlarına yol açmaktadır. Ayrıca gürültü, elektromanyetik alanlar ve kimyasal atıklar çocukların hem fiziksel hem de zihinsel gelişimini olumsuz etkilemektedir. Çevresel bozulma aynı zamanda çocukların oyun alanlarını daraltmakta ve onların doğayla kurduğu bağı zayıflatmaktadır.

Günümüzde ekoloji bilimi, çevre sorunlarını anlamak ve çözüm üretmek için önemli bir alan hâline gelmiştir.

Ekoloji, canlılar ile çevre arasındaki ilişkileri inceleyerek sürdürülebilir bir yaşamın temelini oluşturur. Çocukların çevre bilinciyle yetiştirilmesi, gelecekte daha sağlıklı ve dengeli bir dünya için kritik öneme sahiptir. Bu nedenle çevre eğitimi erken yaşlardan itibaren verilmelidir.

Anahtar Kelimeler: Çevre eğitimi, Sürdürülebilir kalkınma, Ekolojik denge, Çevre bilinci.

DFT ELUCIDATION OF THE MECHANISM AND STEREOSELECTIVITY OF THE HYDROBORATION–OXIDATION REACTION OF A′-TRANS-HIMACHALENE: MOLECULAR DOCKING AND ADMET ASSESSMENT OF THE RESULTING DERIVATIVES

Mohammed Denzira, Mohammed El idrissi
Laboratory of Environmental, Ecological, and Agro-Industrial Engineering, Faculty of Science and Techniques of Beni Mellal, Sultan Moulay Slimane University, Beni Mellal, Morocco.
ORCID:0009-0009-4459-7797

Abdelmalek Matine
Molecular Modeling and Spectroscopy Research Team, Faculty of Sciences, Chouaib Doukkali University, PB 20, El Jadida 24000, Morocco

Said Esskalli
Laboratory of Applied Chemistry and Environment, Faculty of Sciences and Techniques, Hassan First University, Settat, Morroco

ABSTRACT
The alcohol $C_{15}H_{24}O$ was synthesized via the hydroboration–oxidation of α′-trans-himachalene using 9-BBN in tetrahydrofuran (THF), followed by oxidation with H_2O_2/NaOH in an aqueous medium. The chemoselectivity of the reaction was investigated theoretically through Molecular Electron Density Theory (MEDT). Computational results, supported by Parr functions, Electron Localization Function (ELF) analysis, and energy calculations, accurately predict the preferred reaction pathway and the most favorable interactions. Mechanistic investigations revealed that the reaction proceeds through a concerted pathway involving asynchronous bond formation. Furthermore, molecular docking studies of α′-trans-himachalene and the resulting alcohols P'1 and P'2 were performed against the SARS-CoV-2 main protease (PDB: 6LU7), using ribavirin as a reference compound. The results suggest that the functionalized alcohols, particularly P'1, may serve as promising antiviral candidates.
Keywords: Hydroboration–oxidation, α′-trans-himachalene, 9-BBN, MEDT, Chemoselectivity, ELF, Molecular docking

ENHANCED ADSORPTION OF CONGO RED BY MULTI-METAL LAYERED DOUBLE HYDROXIDES (LDHS)

Soumaya Talbi
Molecular Chemistry, Materials, Catalysis and Environnement Laboratory, Faculty of Sciences and Technologies, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco

Amal El Khanchaoui
Chemicals Process and Applied Materials Laboratory, Polydisciplinary Faculty, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco.

Salha Hamri
Molecular Chemistry, Materials, Catalysis and Environnement Laboratory, Faculty of Sciences and Technologies, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco

Abderrafia Hafid
Molecular Chemistry, Materials, Catalysis and Environnement Laboratory, Faculty of Sciences and Technologies, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco

Mostafa Khouili
Molecular Chemistry, Materials, Catalysis and Environnement Laboratory, Faculty of Sciences and Technologies, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco

Souad Rabi
Molecular Chemistry, Materials, Catalysis and Environnement Laboratory, Faculty of Sciences and Technologies, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco

Abdellatif Essoumhi
Chemicals Process and Applied Materials Laboratory, Polydisciplinary Faculty, Sultan Moulay Slimane University, BP 523, Beni-Mellal 23000, Morocco.

Abstract
In this work, both MgNiAl-LDH and MgNiFe-LDH hydrotalcites [1] [2] were utilized to remove the anionic dye Congo red (CR) from an aqueous solution [3]. Samples characterization was carried out by X-ray diffraction (XRD), infrared spectroscopy (IR) and Thermogravimetric/Differential Scanning Calorimetry (TG/DSC). Various parameters were investigated, including the initial dye concentration, adsorbent mass, contact time, solution pH, and temperature. Using classical pseudo-first-order, pseudo-second-order, and intraparticle diffusion models, adsorption kinetics were investigated. The dynamical data fit well with the pseudo-second order kinetic model. The equilibrium adsorption data were analyzed using three linear adsorption models: Langmuir, Freundlich, and Temkin. The findings showed that the Langmuir isotherm adequately predicts experimental results with an ideal correlation coefficient. This result is very useful when selecting sorbents to improve removal technology in the aquatic environment
Keywords: layered double hydroxide; adsorption; anionic dye; Congo red; kinetics; isotherms.

REFERENCE
[1] Manasse, E, Journal of Natural Products, 24, 92 (1915).
[2] Motokura, K, Nishimura, D, Mori, K, Mizugaki, T, Ebitani, K, Kaneda, K. Journal of the American Chemical Society, 126, 5662-5663 (2004).
[3] outaleb, W.A.; El-Salamony, R.A. Mater. Chem. Phys. 2019, 236, 121724.
[4] Talbi, S.; Khanchaoui, A.E.; Bouissane, L.; Hafid, A.; Khouili, M.; Rabi, S.; Essoumhi, A. Chem. Proc. 2023, 14, 99.

COMPREHENSIVE ANALYSIS OF LOW-FREQUENCY DIELECTRIC PROPERTIES AND CHARGE CARRIER DYNAMICS IN SCHOTTKY BARRIER HETEROSTRUCTURES

Prof. Dr. Hatice KANBUR ÇAVUŞ
Yozgat Bozok University, Institute of Hemp Research, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0000-0001-8525-0313

Dr. Murat ÇAVUŞ
Yozgat Bozok University, Faculty of Education, Yozgat, Türkiye
Field of Study: Theoretical and Computational Physics
ORCID: 0000-0002-2341-6485

ÖZET
Bu çalışmada, p-tipi tek kristal silisyum alttaş kullanılarak Al/doğal oksit/p-Si Schottky diyot fabrikasyonu gerçekleştirilmiştir. Kararlı, homojen ve yüksek yoğunluklu bir doğal SiO_2 arayüzey tabakasının büyümesi için Si alttaş, steril bir kabin içerisinde 295 K sabit sıcaklıkta 18 ay boyunca uzun süreli kontrollü doğal oksitlenmeye bırakılmıştır. Üretilen hetero yapının alçak frekanslardaki dielektrik özellikleri ve kompleks elektriksel modül profilleri, 700 Hz - 700 kHz frekans aralığında sistematik olarak incelenmiştir. Deneysel kapasitans-voltaj (C-V) ve iletkenlik-voltaj (G/w-V) ölçümlerinden yararlanılarak; kompleks dielektrik sabitinin gerçek (e¢) ve sanal (e¢¢) kısımları, kayıp tanjantı (tan d), kompleks elektriksel modülün gerçek (M') ve sanal (M") bileşenleri ile alternatif akım elektriksel iletkenliği (s_{ac}) elde edilmiştir. Deneysel sonuçlar, hesaplanan tüm dielektrik modül ve iletim parametrelerinin hem çalışma frekansına hem de uygulanan bias voltajına karşı güçlü bir bağımlılık sergilediğini göstermiştir. Bu belirgin bağımlılık, temel olarak arayüzey tuzaklarının (N_{ss}) relaksasyon kinetiği ve uzaysal yük polarizasyon mekanizmaları tarafından kontrol edilmekte olup, Schottky tipi hetero yapılardaki alçak frekans yük taşıyıcı dinamiklerine dair kapsamlı bir bakış açısı sunmaktadır.
Anahtar Kelimeler: Schottky engel heteroyapıları; Doğal oksit arayüzey katmanı, Dielektrik gevşeme; Elektriksel modül spektrumları; Arayüzey durumları.

ABSTRACT
In this study, an Al/native oxide/p-Si Schottky barrier heterostructure was fabricated utilizing a p-type single-crystal silicon substrate. To ensure the formation of a stable, uniform, and high-density native SiO_2 interfacial layer, the Si substrate was subjected to a controlled ambient oxidation process inside a sterile environment at a constant temperature of 295 K for a prolonged duration of 18 months. The low-frequency dielectric properties and complex electric modulus profiles of the fabricated heterostructure were systematically investigated across a frequency spectrum spanning from 700 Hz to 700 kHz. From the experimental capacitance-voltage (C-V) and conductance-voltage (G/w-V) measurements, the real (e¢) and imaginary (e¢¢) parts of the complex dielectric constant, the loss tangent (tan d), the real (M') and imaginary (M") components of the complex electric modulus, and the alternating current electrical conductivity (s_{ac}) were extracted. The experimental results demonstrate that all extracted dielectric, modulus, and transport parameters exhibit a profound dependence on both the operational frequency and the applied bias voltage. This distinct dependency is primarily governed by the relaxation kinetics of interface states (N_{ss}) and spatial charge polarization mechanisms, thereby providing comprehensive insights into the low-frequency charge carrier dynamics within Schottky-type heterostructures.
Keywords: Schottky barrier heterostructures; Native oxide interfacial layer; Dielectric relaxation; Electric modulus spectra; Interface states.

DIELECTRIC RESPONSE AND CHARGE CARRIER DYNAMICS IN INGAAS SCHOTTKY BARRIER HETEROSTRUCTURES

Prof. Dr. Hatice KANBUR ÇAVUŞ
Yozgat Bozok University, Institute of Hemp Research, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0000-0001-8525-0313

Dr. Murat ÇAVUŞ
Yozgat Bozok University, Faculty of Education, Yozgat, Türkiye
Field of Study: Theoretical and Computational Physics
ORCID: 0000-0002-2341-6485

ÖZET
İndiyum Galyum Arsenik (InGaAs) tabanlı heteroyapılar, yüksek elektron mobiliteleri ve dar direkt bant aralıkları sayesinde yeni nesil yüksek hızlı mikroelektronik ve optoelektronik uygulamalar için gelecek vadeden adaylar haline gelmiştir. Bu çalışmada, InGaAs tabanlı Schottky engel hetero yapısının fabrikasyonu gerçekleştirilmiştir. Üretilen aygıtın frekans ve voltaj bağımlı yük taşıyıcı dinamikleri ile kompleks dielektrik relaksasyon profilleri, -10V ile +10V gibi geniş bir bias voltaj aralığında ve 1kHz ile1MHz frekans spektrumunda sistematik olarak incelenmiştir. Deneysel kapasitans-voltaj (C-V) ve iletkenlik-voltaj (G/w-V) karakteristiklerinden yararlanılarak; kompleks dielektrik sabitinin gerçek (e¢) ve sanal (e¢¢) kısımları, kayıp tanjantı (tan d), kompleks elektriksel modülün gerçek (M') ve sanal (M") bileşenleri ile alternatif akım elektriksel iletkenliği (s_{ac}) elde edilmiştir. Deneysel sonuçlar, incelenen tüm dielektrik modül ve iletim profillerinin hem çalışma frekansına hem de uygulanan bias voltajına karşı güçlü bir duyarlılık sergilediğini göstermiştir. Bu belirgin bağımlılık, temel olarak arayüzey durumlarının (N_{ss}) tuzaklama-salma (trapping-detrapping) kinetiği ve uzaysal yük polarizasyon mekanizmaları tarafından kontrol edilmekte olup, InGaAs Schottky eklemlerindeki yük iletim dinamiklerine dair kapsamlı bir bakış açısı sunmaktadır.
Anahtar Kelimeler: InGaAs Schottky hetero yapıları; Yük taşıyıcı dinamikleri, Dielektrik gevşeme; Elektriksel modül spektrumları, Arayüzey durumları.

ABSTRACT
Indium Gallium Arsenide (InGaAs) based heterostructures have emerged as highly promising candidates for next-generation, high-speed microelectronic and optoelectronic applications due to their superior electron mobility and narrow direct bandgaps. In this study, an InGaAs-based Schottky barrier heterostructure was fabricated. The frequency and voltage-dependent charge carrier dynamics, along with the complex dielectric relaxation profiles of the fabricated device, were systematically investigated over an extended bias voltage sweep from -10V to +10V and across a wide frequency spectrum spanning from 1kHz to 1MHz. Utilizing the experimental capacitance-voltage (C-V) and conductance-voltage (G/w-V) characteristics, key microelectronic parameters-including the real (e¢) and imaginary (e¢¢) parts of the complex dielectric constant, the loss tangent (tan d), the real (M') and imaginary (M") components of the complex electric modulus, and the alternating current electrical conductivity (s_{ac}) were extracted. The experimental results reveal that all investigated dielectric modulus, and transport profiles exhibit a profound susceptibility to both the operational frequency and the applied bias voltage. This distinct dependency is primarily governed by the trapping-detrapping kinetics of interface states (N_{ss}) and spatial charge polarization mechanisms, thereby providing comprehensive insights into the charge transport dynamics within InGaAs Schottky hetero junctions.
Keywords: InGaAs Schottky heterostructures; Charge carrier dynamics; Dielectric relaxation; Electric modulus spectra; Interface states.

DETERMINATION OF THE CHANGE IN OPTICAL PROPERTIES OF BACTERIA SUBJECTED TO MAGNETIC FIELD WITH THE HELP OF ULTRAVIOLET-VISIBLE

Bircan SAYAR
Yozgat Bozok University, Faculty of Arts and Sciences, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0000-0002-7377-0044

Prof. Dr. Recep ŞAHİNGÖZ
Yozgat Bozok University, Faculty of Arts and Sciences, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0000-0002-9525-8068

Mehmet YAKAN
Yozgat Bozok University, Faculty of Arts and Sciences, Yozgat, Türkiye
Field of Study: Experimental Chemistry
ORCID: 0000-0003-4954-2073

ÖZET
Bu çalışmada, 0-3 amper doğru akım oluşturabilen güç kaynağı kullanıldı ve bu akım Helmholtz bobini üzerinden geçirilerek sabit bir manyetik alan oluşturuldu. Manyetik alan merkezine yakınlıkları 0, 10, 20, 40 cm ve manyetik alansız (kontrol grubu) olacak şekilde 5 farklı numune yerleştirilerek bu numunelerde bulunan Lactobacillus bulgaricus ve Streptococcus thermophilus bakterilerinin optik özelliklerindeki değişim izlendi. Elde edilen numunelerin optik özellikleri Ultraviolet-Visible (Uv-Vis) yöntemi kullanılarak belirlendi. Yapılan ölçümler sonucunda manyetik alan merkezine uzaklıkları 0, 10, 20, 40 ve max (kontrol grubu) olan numunelerin yasak enerji aralığı E_g değerleri sırasıyla 4.11, 4.12, 4.13, 4.14 ve 4.17 eV olarak elde edildi. Numunelerdeki farklılıklar optik mikroskoplarla gözlemlenmiştir. Bu verilere göre manyetik alan merkezine en yakın olan numunedeki bakterilerin optik özelliklerindeki değişim en fazla, en uzak olan numunedeki değişim ise en az olarak belirlendi. Buna göre manyetik alanın, bakterilerdeki üreme mekanizmasını etkilediği ve absorbans özelliklerinde değişikliklere neden olduğu ortaya koyulmuştur.
Anahtar Kelimeler: Manyetik alan; Bakteri, Optik özellik; Uv-Vis; Enerji aralığı (Eg).

ABSTRACT
In this study, a power supply capable of generating a direct current of 0–3 amperes were used, and this current was passed through a Helmholtz coil to create a constant magnetic field. Five different samples were placed at distances of 0, 10, 20, and 40 cm from the magnetic field center, along with a control group without magnetic exposure, to observe changes in the optical properties of Lactobacillus bulgaricus and Streptococcus thermophilus bacteria. The optical properties of the obtained samples were determined using the Ultraviolet-Visible (Uv-Vis) method.
As a result of the measurements, the E_g values of the samples located at 0, 10, 20, 40 cm, and the control group (no magnetic field) were determined as 4.11, 4.12, 4.13, 4.14, and 4.17 eV, respectively. The differences among the samples were also observed using optical microscopy. Based on these results, it was determined that the changes in the optical properties of the bacteria were greatest in the sample closest to the magnetic field center and least in the most distant sample. Accordingly, it was demonstrated that the magnetic field affects the reproductive mechanism of the bacteria and causes alterations in their absorbance properties.
Keywords: Magnetic field; Bacteria; Optical Properties; UV-Vis; Band Gap (Eg).

A HOMOTOPIC MODEL FOR HISTORICAL CRYPTOGRAPHIC PROCESSES

Dr. Metin AKIZ
Yozgat Bozok University, Department of Atatürk's Principles and History of Turkish Revolution, Yozgat-Türkiye
ORCID: 0000-0001-9350-5793

Assoc. Prof. Hürmet Fulya AKIZ
Yozgat Bozok University, Faculty of Art and Science, Department of Mathematics, Yozgat-Türkiye
ORCID: 0000-0002-8547-2175

ÖZET
Osmanlı Devleti'nde kullanılan kod defterleri ve şifre cetvelleri, belirli sembol, rakam ve harf gibi sistemlere dayalı olan şifreleme yöntemlerinden oluşmaktadır. Bu çalışmada, tarihsel şifre sistemlerinin topolojik yöntemlerle incelenmesine yönelik yeni bir model önerilmektedir.
Bu model, tarihsel şifrelemede cebirsel topolojinin temel kavramlarından biri olan homotopi teorisi yardımıyla geliştirilecektir. Bir şifreleme süreci belirli durumlar arasında gerçekleşen bir yol olarak ele alınacaktır. Burada açık metin, ara dönüşümler ve şifreli metin, bir topolojik uzayın noktaları olarak değerlendirilirken; şifreleme işlemi bu noktalar arasında tanımlanan bir yol ile temsil edilmektedir. Aynı sonuca ulaşan farklı şifreleme süreçlerinin ise homotopi kavramı aracılığıyla eşdeğer sınıflar olarak değerlendirilecektir. Böylece, tarihsel şifreleme yöntemleri cebirsel topoloji yardımıyla analiz edilebilecektir.
Çalışmanın temel amacı, tarihsel şifreleme ile cebirsel topoloji arasında faydalı bir bağ kurmak ve yeni bir bakış açısı vermektir. Bu kapsamda homotopi sınıflarının kriptografik anahtar üretiminde kullanılabilirliği incelenecek ve tarihsel şifre sistemlerinin topolojik yöntemlerle geliştirilmesi üzerinde durulacaktır. Bu çalışma doğrudan yeni bir kriptografik algoritma önermekten ziyade, tarihsel şifreleme süreçlerinin matematiksel modellenmesine yönelik kavramsal bir çerçeve sunmaktadır. Önerilen yaklaşımın ilerleyen çalışmalarda Osmanlı diplomatik şifreleri, askerî kod defterleri ve farklı dönemlere ait şifrelenmiş belgeler üzerinde uygulanarak geliştirilebileceği düşünülmektedir.
Anahtar Kelimeler: Tarihsel kriptografi, homotopi teorisi, cebirsel topoloji, Osmanlı şifreleri, kriptografik anahtar üretimi.

ABSTRACT
The codebooks and cipher tables used in the Ottoman Empire consisted of encryption methods based on systems involving symbols, numbers, and letters. This study proposes a novel topological framework for the analysis of historical cryptographic systems.
The proposed model is developed using homotopy theory, one of the fundamental concepts of algebraic topology. In this framework, an encryption process is regarded as a path connecting different states. Plaintext, intermediate transformations, and ciphertext are interpreted as points of a topological space, while the encryption procedure itself is represented by a path defined between these points. Different encryption processes that lead to the same outcome are considered equivalent classes through the concept of homotopy. In this way, historical cryptographic methods can be analyzed from the perspective of algebraic topology.
The main objective of this study is to establish a meaningful connection between historical cryptography and algebraic topology and to provide a new perspective for the analysis of historical encryption systems. Within this framework, the potential use of homotopy classes in cryptographic key generation is explored, and the development of historical cryptographic systems through topological methods is discussed. Rather than proposing a new cryptographic algorithm, this study presents a conceptual framework for the mathematical modeling of historical encryption processes. It is anticipated that the proposed approach can be further developed and applied to Ottoman diplomatic ciphers, military codebooks, and encrypted documents from different historical periods.
Keywords: Historical cryptography, homotopy theory, algebraic topology, Ottoman ciphers, cryptographic key generation.

REFERENCES

Bingöl, S. (2022). "Osmanlı Devleti'nde Kriptografik Uygulamalar ve Kod Defterleri", Süleyman Demirel Üniversitesi Fen-Edebiyat Fakültesi Sosyal Bilimler Dergisi, 56, 113-129.

Bingöl, S. (2025). *Osmanlı Resmî Yazışmalarında Şifreler ve Kodlar (1798–1877)*. Ankara: Türk Tarih Kurumu Yayınları.

Hatcher, A. (2002). *Algebraic Topology*. Cambridge University Press.

Munkres, J. R. (2000). *Topology* (2nd ed.). Prentice Hall.

Kahn, D. (1996). The Codebreakers: The Comprehensive History of Secret Communication from Ancient Times to the Internet (2nd ed.). Scribner.

ON CONVERGENCE VIA δ -OPEN SETS IN IDEAL TOPOLOGICAL SPACES

İDEAL TOPOLOJİK UZAYLARDA δ -AÇIK KÜMELER YARDIMIYLA YAKINSAKLIK

Assoc. Prof. Hürmet Fulya AKIZ
Yozgat Bozok University, Faculty of Arts and Sciences, Department of Mathematics, Yozgat, Türkiye.
ORCID ID: 0000-0002-8547-2175

ÖZET

Topolojik uzaylarda açık küme kavramının çeşitli genelleştirmeleri, yakınsaklık ve süreklilik teorisinin daha geniş bir çerçevede incelenmesine olanak sağlamaktadır. Bu genelleştirmelerden biri olan δ-açık kümeler, Velicko tarafından 1968 yılında tanımlanmıştır. Bir topolojik uzayın (X,τ) bir A alt kümesi , $A = int(cl(A))$ şartını sağlıyorsa düzenli açık küme olarak adlandırılır. Her $x \in A$ için $x \in G \subset A$ olacak şekilde bir düzenli açık G kümesi bulunuyorsa, A kümesine δ-açık küme denir.

Boş olmayan bir X kümesi üzerinde tanımlanan ve kalıtımsallık ile sonlu birleşim altında kapalılık özelliklerini sağlayan I ailesine ideal denir (Kuratowski,1966). Bu durumda (X,τ,I) üçlüsü bir ideal topolojik uzay meydana getirir. δ-açık kümeler ideal topolojik uzaylara taşınmış ve ideal yapının etkisiyle yeni açık küme sınıfları elde edilmiştir (Hayashi,1964; Jankovic ve Hamlett,1990). Böylece klasik topolojideki birçok kavramın ideal topolojik uzaylar çerçevesinde yeniden incelenmesi mümkün hâle gelmiştir.

Bu çalışmada ideal topolojik uzaylarda tanımlanan δ-açık küme türleri temel alınarak farklı yakınsaklık kavramlarının geliştirilmesi amaçlanmaktadır. Özellikle dizilerin bu yeni açık küme sınıfları bakımından yakınsaklığı incelenecek, elde edilen yakınsaklık türlerinin klasik yakınsaklık ile ilişkileri araştırılacaktır. Ayrıca bu yaklaşımlar çerçevesinde dizisel açık küme kavramı yeniden ele alınacaktır.

Anahtar Kelimeler: İdeal topolojik uzay, δ-açık küme, yakınsaklık, dizisel açık küme.

ABSTRACT

Various generalizations of the notion of open sets in topological spaces allow the theories of convergence and continuity to be studied within a broader framework. One of these generalizations is the concept of δ-open sets, introduced by Velicko in 1968. A subset A of a topological space (X,τ) is called a regular open set if it satisfies the condition $A = int(cl(A))$. If, for every $x \in A$, there exists a regular open set G such that $x \in G \subset A$, then A is called a δ-open set.

An ideal on a nonempty set X is a family I satisfying the hereditary property and closure under finite unions (Kuratowski, 1966). In this case, the triple (X,τ,I) forms an ideal topological space. The notion of δ-open sets has been extended to ideal topological spaces, and new classes of open sets have been obtained through the influence of the ideal structure (Hayashi, 1964; Jankovic and Hamlett, 1990). Consequently, many concepts of classical topology can be reconsidered within the framework of ideal topological spaces.

In this study, it is aimed to develop different notions of convergence based on the classes of δ-open sets defined in ideal topological spaces. In particular, the convergence of sequences with respect to these new classes of open sets will be investigated, and the relationships between the resulting convergence notions and classical convergence will be examined. Furthermore, within this framework, the concept of sequentially open sets will be reconsidered.

Keywords: Ideal topological space, δ-open set, convergence, sequentially open set.

THE EFFECT OF HEAT TREATMENT DURATION ON VICKERS HARDNESS AND SOME MAGNETO PROPERTIES IN $FE_{39}NI_{39}MO_4SI_6B_{12}$ METALLIC GLASS ALLOY

Ali PEHLİVANLI
Yozgat Bozok University, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0009-0003-0307-0362

Prof. Dr. Recep ŞAHİNGÖZ
Yozgat Bozok University, Faculty of Arts and Sciences, Yozgat, Türkiye
Field of Study: Experimental Physics
ORCID: 0000-0002-9525-8068

ÖZET
Bu çalışmada yüzeye püskürtme metoduyla (Planar Flow Casting Method) üretilen demir nikel esaslı metalik cam alaşımın ($Fe_{39}Ni_{39}Mo_4Si_6B_{12}$) fiziksel özellikleri farklı Isıl İşlemlerde incelenmiştir. Başlangıçtaki amorf numuneler, Curie sıcaklığının üstünde bir sıcaklık olan 500 °C sıcaklıkta sırasıyla 60, 300 ve 1800 saniye sürelerle ısıl işleme tabi tutulmuştur. Metalik cam alaşımın mekanik kararlılık ve manyetik performansı üzerindeki ısıl işlemin doğrudan etkileri incelenmiştir. Koersivite- ısıl işlem süresi, (H_c –t(sn)) ve Manyetik duygunluk –Isıl işlem süresi (χ_o – t (sn)) değerleri elde edilmiş ve değişimler grafiklerle verilmiştir. Sertlik Değerlerindeki değişime parallel olarak manyetik özelliklerdeki değişimlerde mekanik karakteristiklerin belirlenmesi amacıyla gerçekleştirilen Vickers sertlik testleri, ısıl işlem süresinin artmasıyla birlikte sertlik değerlerinde belirgin bir artış yaşandığını ortaya koymuştur. Bu değerler SEM görüntüleme tekniği ile de desteklenmiştir. Elde edilen bulgular, optimize edilen sertlik ve yüksek manyetik performans göstermesi sayesinde metalik cam alaşımının, özellikle ileri teknolojik malzeme olarak alıcı verici sensör uygulamalarında, kristal yapılı malzemelere göre kullanımının daha avantajlı olduğunu göstermektedir.
Anahtar Kelimeler: Metalik cam; Vickers; Isıl işlem; Koersivite; Duygunluk

ABSTRACT
In this study, the physical properties of an iron–nickel-based metallic glass alloy (Fe39Ni39Mo4Si6B12) produced by the Planar Flow Casting Method were investigated under different heat-treatment conditions. The initially amorphous samples were subjected to heat treatment at 500 °C, a temperature above the Curie temperature, for 60, 300, and 1800 seconds, respectively. The direct effects of heat treatment on the mechanical stability and magnetic performance of the metallic glass alloy were examined. Coercivity–heat treatment time (Hc–t(s)) and magnetic susceptibility–heat treatment time (χo–t(s)) values were obtained, and their variations were presented graphically. In parallel with the changes in hardness values, variations in magnetic properties were also observed. Vickers hardness tests, conducted to determine the mechanical characteristics, revealed a significant increase in hardness with increasing heat-treatment time. These results were further supported by SEM imaging techniques. The findings indicate that, due to its optimized hardness and high magnetic performance, the metallic glass alloy offers advantages over crystalline materials, particularly for transmitter–receiver sensor applications as an advanced technological material.
Keywords: Metallic glass; Vickers; Heat treatment; Coercivity; Susceptibility.

INVESTIGATION OF THE EFFECTS OF *MEDICAGO SATIVA* L. METHANOL EXTRACT ON MORTALITY, ACETYLCHOLINESTERASE ACTIVITY AND OXIDATIVE STRESS PARAMETERS IN *GALLERIA MELLONELLA* LARVAE

Fatih TAŞTAN
Yozgat Bozok University, Sorgun Vocational School, Property Protection and Security Department, Yozgat, Türkiye.
Yozgat Bozok University, Institute of Graduate Education, Department of Biology, Yozgat, Türkiye.
ORCID Code: (Fatih TAŞTAN): 0000-0001-6081-205X

Emine Tuğçe SARAÇ CEBECİ
Yozgat Bozok University, Faculty of Science and Art, Biology Department, Yozgat, Türkiye.
Yozgat Bozok University, Institute of Graduate Education, Department of Biology, Yozgat, Türkiye.
ORCID Code:0000-0002-7219-8015

Hatice BAŞ
Yozgat Bozok University, Faculty of Science and Art, Biology Department, Yozgat, Türkiye.
ORCID Code:0000-0001-8296-0360

ABSTRACT
Biopesticides derived from plants are environmentally safe substitutes for chemical pesticides. This study investigated how the methanol extract of *Medicago sativa* L. (alfalfa) affects the larvae of the wax moth (*Galleria mellonella*) by measuring mortality rate, acetylcholinesterase activity and oxidative stress factors. Larvae were treated with varying concentrations of methanol extract and after 24, 48 and 72 hours of exposure, larvae were collected for biochemical analysis. Larvae that had been treated with methanol extracts had significantly higher mortality rates than control larvae, in a concentration-dependent manner. Treating larvae with methanol extracts produced statistically significant changes in acetylcholinesterase activity following exposure, suggesting that the extracts may have neurotoxic properties. Analysis of oxidative stress indicated that larvae treated with methanol extracts exhibited greater amounts of lipid peroxidation and alterations in the parameters of their antioxidant defense system. Our results indicate that methanol extracts of *Medicago sativa* are likely to exhibit significant biopesticidal activity against *Galleria mellonella* via the induction of oxidative stress and through mechanisms mediated by neurophysiology.
Keywords: *Medicago sativa*, *Galleria mellonella*, methanol extract, biopesticide, AChE, oxidative stress

EVALUATION OF THE INHIBITORY EFFECTS OF *TRIFOLIUM CAMPESTRE* ON CERTAIN ENZYMES

TRIFOLIUM CAMPESTRE'NIN BAZI ENZİMLER ÜZERİNDEKİ İNHİBİTÖR ETKİLERİNİN DEĞERLENDİRİLMESİ

Emine Tuğçe SARAÇ CEBECİ
Yozgat Bozok University, Faculty of Science and Art, Biology Department, 66100, Yozgat, Türkiye.
Yozgat Bozok University, Institute of Graduate Education, Department of Biology, 66100, Yozgat, Türkiye.

Fatih TAŞTAN
Yozgat Bozok University, Institute of Graduate Education, Department of Biology, 66100, Yozgat, Türkiye.
Yozgat Bozok University, Sorgun Vocational School, Property Protection and Security Department, 66100, Yozgat, Türkiye.

Hatice BAŞ
Yozgat Bozok University, Faculty of Science and Art, Biology Department, 66100, Yozgat, Türkiye.

ABSTRACT
Nowadays, natural enzyme inhibitors derived from medicinal plants have attracted considerable interest due to their potential therapeutic applications in metabolic, neurodegenerative, and dermatological disorders. Trifolium campestre (T. campestre) is a plant that belongs to the Fabaceae family. It is generally known as field clover or hop trefoil. It is an annual plant that is known to possess a rich phytochemical profile. The plant contains various compounds, such as phenolics, flavonoids and isoflavone substances.
In this study, the enzyme inhibitory activities of T. campestre were evaluated. Specific focus was given to the inhibitory effects on α-amylase, α-glucosidase, acetylcholinesterase (AChE), butyrylcholinesterase (BuChE), and tyrosinase enzymes. The obtained data demonstrated that T. campestre exhibits promising enzyme inhibitory potential.
In conclusion, T. campestre has potential activity for antidiabetic, antityrosine and neuroprotective by enzyme inhibition. Because of the bioactive compounds of T. campestre, it is thought to be a promising plant in terms of health.
Keywords: Trifolium, Enzyme inhibition, Antidiabetic, Antityrosinase, Neuroprotective Effects

ÖZET
Günümüzde, tıbbi bitkilerden elde edilen doğal enzim inhibitörleri, metabolik, nörodejeneratif ve dermatolojik bozukluklardaki potansiyel terapötik uygulamaları nedeniyle büyük ilgi görmektedir. *Trifolium campestre* (*T. campestre*), Fabaceae familyasına ait bir bitkidir. Genellikle tarla yoncası veya şerbetçi otu üç yapraklısı olarak bilinir. Zengin bir fitokimyasal profile sahip olduğu bilinen yıllık bir bitkidir. Bitki, fenolikler, flavonoidler ve izoflavon maddeleri gibi çeşitli bileşikler içerir.
Bu çalışmada, *T. campestre*'nin enzim inhibitör aktiviteleri değerlendirilmiştir.
Özellikle α-amilaz, α-glukozidaz, asetilkolinesteraz (AChE), butirilkolinesteraz (BuChE) ve tirozinaz enzimleri üzerindeki inhibitör etkilerine odaklanılmıştır. Elde edilen veriler, *T. campestre*'nin umut vadeden bir enzim inhibitör potansiyeli sergilediğini göstermiştir.
Sonuç olarak, *T. campestre*, enzim inhibisyonu yoluyla antidiyabetik, antitirozin ve nöroprotektif potansiyel aktiviteye sahiptir. *T. campestre*'nin içerdiği biyoaktif bileşikler nedeniyle, sağlık açısından umut vadeden bir bitki olarak kabul edilmektedir.
Anahtar kelimeler: *Trifolium*, enzim inhibisyonu, antidiyabetik, antitirozinaz, nöroprotektif etkiler.

JEOLOJİK KAYNAKLARDAN İLERİ TEKNOLOJİYE: NADİR TOPRAK ELEMENTLERİNİN NANOTEKNOLOJİK UYGULAMALARI

FROM GEOLOGICAL RESOURCES TO ADVANCED TECHNOLOGY: NANOTECHNOLOGICAL APPLICATIONS OF RARE EARTH ELEMENTS

Prof. Dr. Berna YAVUZ PEHLİVANLI
Yozgat Bozok Üniversitesi, Mühendislik-Mimarlık Fakültesi,
Jeoloji Mühendisliği Bölümü, Yozgat, Türkiye.
ORCID: 0000-0003-0127-8525

ÖZET

Nadir Toprak Elementleri (NTE), yerkabuğundaki jeokimyasal davranışları, birincil cevherleşme mekanizmaları ve kendilerine özgü fotofiziksel karakteristikleri doğrultusunda, geleneksel hammadde algısının ötesine geçerek modern nanoteknolojik ve kuantum uygulamalarının stratejik odağı haline gelmiştir. Bu çalışma, magmatik, hidrotermal ve sedanter süreçlerle şekillendirilmiş birincil NTE yataklarından (bastnasit, monazit vb.) başlanarak ileri teknoloji nano-malzeme matrislerine uzanan disiplinlerarası dönüşüm zincirini jeolojik ve jeokimyasal bir bakış açısıyla incelemektedir. NTE'lerin nanoteknolojik sistemlerdeki vazgeçilmezliğini sağlayan 4f iç kabuk elektronlarının perdeleme (kalkan) etkisi, kristal kafes yapısı içindeki iyonik yer değiştirmeler ve izomorfizm kuralları çerçevesinde ele alınmıştır. Jeolojik kaynaklardan elde edilen NTE iyonlarının fonksiyonelliği; mikro-lazer sistemleri ve fotovoltaik hücre katmanlarındaki kritik rolleri üzerinden analiz edilmektedir. Sonuç olarak makro ölçekteki jeolojik süreçlerin, nano ölçekteki ışık-madde etkileşimini doğrudan şekillendirerek geleceğin yeşil enerji ve kuantum teknolojilerine nasıl yön verebileceği tartışılmaktadır.
Anahtar Kelimeler: Nadir Toprak Elementleri, Hammadde Jeolojisi, Jeokimyasal Fraksiyonlaşma, Nanoteknoloji, Disiplinlerarası Jeokimya.

ABSTRACT

Rare Earth Elements (REEs) have transcended the traditional perception of raw materials to become the strategic focus of modern nanotechnological and quantum applications. This study examines the interdisciplinary transformation chain extending from primary REE deposits (bastnäsite, monazite, etc.) to advanced technological nanomaterial matrices. The shielding effect of 4f inner-shell electrons is evaluated within the framework of ionic substitutions within the crystal lattice structure. The functionality of REE ions in advanced technological structures, such as micro-laser systems and photovoltaic cell layers, is of vital importance. Consequently, it is crucial to understand how macro-scale geological processes can directly shape nano-scale light-matter interactions, thereby steering the green energy and quantum technologies of the future.
Keywords: Rare Earth Elements, Raw Material Geology, Geochemical Fractionation, Nanotechnology, Interdisciplinary Geochemistry.

NİĞDE-ULUKIŞLA HAVZASI NEOJEN İSTİFİNİN GENEL JEOLOJİSİ, STRATİGRAFİSİ VE KATRANDEDETEPE FORMASYONU BİTÜMLÜ ŞEYLLERİNİN HAVZA EVRİMİ AÇISINDAN İNCELENMESİ

INVESTIGATION OF THE NEOGENE SUCCESSION IN THE NIGDE-ULUKISLA BASIN: GENERAL GEOLOGY, STRATIGRAPHY, AND THE EVOLUTION OF BITUMINOUS SHALES WITHIN THE KATRANDEDETEPE FORMATION

Doktora Öğrencisi Mustafa Batuhan ERTEKİN
Yozgat Bozok Üniversitesi, Mühendislik-Mimarlık Fakültesi, Jeoloji Mühendisliği Anabilim Dalı, Yozgat, Türkiye.
ORCID: 0000-0001-9770-7157

Prof. Dr. Berna YAVUZ PEHLİVANLI
Yozgat Bozok Üniversitesi, Mühendislik-Mimarlık Fakültesi,
Jeoloji Mühendisliği Bölümü, Yozgat, Türkiye.
ORCID: 0000-0003-0127-8525

ÖZET

Bu çalışma, Orta Anadolu Tektonik Birliği sınırları içinde yer alan Bor-Ulukışla Neojen Havzası'nın stratigrafik gelişimini, genel jeolojisini ve istif içerisinde kritik bir seviye oluşturan Üst Miyosen–Pliyosen yaşlı Katrandedetepe Formasyonu bitümlü şeyllerinin havza evrimi içerisindeki konumunu incelemektedir. Havza, Erken Tersiyer'den itibaren tektonik olarak aktif bir çarpışma sonrası çöküntü alanı olarak gelişmiş olup, temel kayaç birimleri üzerinde uyumsuzlukla çökelen kalın gölsel ve evaporitik sedimanter serilerle temsil edilmektedir. Bölgenin genel jeolojisi ve litostratigrafi ilişkileri literatürde makro yapısal unsurlarla ele alınmış olsa da, havzanın kalın istifini oluşturan Katrandedetepe Formasyonu'nun dikey ve yanal stratigrafik değişimleri ile sedimantasyon süreçlerinin havza analizi perspektifinden bütüncül bir şekilde değerlendirilmesi büyük önem taşımaktadır. Çalışma kapsamında, havzanın tektono-sedimanter gelişimi ve sedimentasyon dinamikleri, bölgesel stratigrafik korelasyonlar ve saha/kesit verileri üzerinden makro ölçekte değerlendirilmiştir. Katrandedetepe istifinin litofasiyes özellikleri, tabaka geometrileri ve istif içindeki dikey değişimleri değerlendirilmiştir, havzanın kapanma ve kuruma evreleri kronostratigrafik bir değişim sergilemektedir. Havzanın evrim süreci boyunca meydana gelen tektonik yükselimler, iklimsel değişimler ve denizel/karasal beslenme kaynaklarının sediman dağılımına etkileri, bölgenin genel jeolojik unsurları (kuzeydeki Niğde Masifi ve çevre birimler) ile ilişkileri değerlendirilmiştir. Özellikle sodyum sülfat ve halit gibi evaporit parajenezleri sunan bu lakustrin sistemde, bitümlü şeyl ardalanmalarının hangi havza koşullarında oluştuğu ve kalın gölsel serilerin yapısal olarak nasıl konumlandığı tartışılmıştır.

Anahtar Kelimeler: Bor-Ulukışla Havzası, Katrandedetepe Formasyonu, Genel Jeoloji, Stratigrafi, Havza Evrimi, Litofasiyes.

ABSTRACT

This study investigates the stratigraphic evolution, general geology, and the basin-dynamic context of the Upper Miocene–Pliocene Katrandedetepe Formation bituminous shales, which constitute a critical key-level within the Neogene Bor-Ulukışla Basin located along the margins of the Central Anatolian Tectonic Unit.

Developing as a tectonically active post-collisional depression zone since the Early Tertiary, the basin is characterized by thick lacustrine and evaporitic sedimentary successions that unconformably overlie the basement rock units. Although the general geology and lithostratigraphic relationships of the region have previously been addressed in the literature within a macro-structural framework, a holistic evaluation of the vertical and lateral stratigraphic variations, along with the depositional processes of the thick Katrandedetepe Formation, remains of paramount importance from a basin analysis perspective.

Within the scope of this research, the tectono-sedimentary evolution and depositional dynamics of the basin were evaluated at a macro scale utilizing regional stratigraphic correlations, field mapping, and measured stratigraphic section data.

Based on the assessment of the lithofacies characteristics, bedding geometries, and vertical successions of the Katrandedetepe sequence, the closing and desiccation stages of the basin exhibit a distinct chronostratigraphic variation. The impacts of tectonic uplifts, paleoclimatic fluctuations, and marine/terrestrial sediment supply on the depositional distribution throughout the basin's evolutionary history were correlated with the regional geological elements, particularly the Niğde Massif to the north and its surrounding units. In this lacustrine system, which displays characteristic evaporite parageneses such as sodium sulfate and halite, the specific basinal conditions governing the development of bituminous shale intercalations and the structural positioning of the thick lacustrine successions were discussed.

Keywords: Bor-Ulukışla Basin, Katrandedetepe Formation, General Geology, Stratigraphy, Basin Evolution, Lithofacies.

AGRO-ENDÜSTRİYEL BİTKİ YAN ÜRÜNLERİNİN HAYVANSAL ÜRETİMDE ALTERNATİF YEM KAYNAĞI OLARAK DEĞERLENDİRİLMESİ

EVALUATION OF AGRO-INDUSTRIAL PLANT BY PRODUCTS AS ALTERNATIVE FEED SOURCES IN ANIMAL PRODUCTION

Doç. Dr. Levent YAZICI
Yozgat Bozok Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Yozgat, Türkiye.
ORCID ID: 0000-0002-6839-5366

Doç. Dr. Medine ÇOPUR DOĞRUSÖZ
Yozgat Bozok Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Yozgat, Türkiye.
ORCID ID: 0000-0002-9159-1699

ÖZET

Artan dünya nüfusu, değişen beslenme alışkanlıkları ve hayvansal ürünlere olan talebin yükselmesi, hayvansal üretimde kullanılan yem kaynakları üzerinde ciddi bir baskı oluşturmaktadır. Bu durum, özellikle protein ve enerji açısından zengin geleneksel yem hammaddelerinin sürdürülebilirliğini tartışmalı hale getirmiş ve alternatif yem kaynaklarının araştırılmasını hızlandırmıştır. Bu bağlamda agro-endüstriyel bitki yan ürünleri, düşük maliyetli, bol bulunabilir ve besin değeri açısından zengin olmaları nedeniyle önemli bir potansiyel alternatif olarak öne çıkmaktadır. Özellikle yağlı tohumlu bitkilerin işlenmesi sonucu elde edilen kolza, ayçiçeği ve soya küspeleri; yüksek ham protein içerikleri ve sindirilebilirlik özellikleri ile ruminant ve monogastrik hayvan beslemede yaygın şekilde değerlendirilmektedir. Bunun yanı sıra şeker pancarı posası gibi şeker endüstrisi yan ürünleri, yüksek fermente olabilir lif içeriği sayesinde rumen mikrobiyal aktiviteyi destekleyerek enerji kaynağı olarak önemli katkı sağlamaktadır. Nişasta ve lif bazlı endüstriyel artıklar ise uygun işleme teknikleri ile yem değerine kazandırılabilmektedir. Bu derlemede agro-endüstriyel bitki yan ürünlerinin kimyasal kompozisyonu, besleyici özellikleri, hayvan beslemede kullanım alanları ve sürdürülebilir yem üretimine katkıları literatür ışığında değerlendirilmiştir. Elde edilen bulgular, bu yan ürünlerin doğru muhafaza, işlem (fermantasyon, kurutma, peletleme) ve rasyon formülasyonu ile hem ruminant hem de monogastrik hayvanlar için etkili alternatif yem kaynaklarına dönüştürülebileceğini göstermektedir. Ayrıca bu kaynakların kullanımı, yem maliyetlerinin azaltılması ve tarımsal atık yönetiminin iyileştirilmesi açısından döngüsel ekonomi yaklaşımına önemli katkılar sunmaktadır.

Anahtar Kelimeler: agro-endüstri, yan ürün, hayvan besleme, kolza küspesi, ayçiçeği küspesi, sürdürülebilir yem.

ABSTRACT

The growing global population, changing dietary patterns, and increasing demand for animal-derived products have placed significant pressure on feed resources used in animal production systems. This situation has raised concerns regarding the sustainability of conventional feed ingredients, particularly those rich in protein and energy, and has accelerated the search for alternative feed sources. In this context, agro-industrial plant by products have emerged as promising alternatives due to their low cost, wide availability, and considerable nutritional value.

In particular, oilseed processing by-products such as rapeseed, sunflower, and soybean meals are widely utilized in both ruminant and monogastric animal nutrition due to their high crude protein content and favorable digestibility characteristics. Similarly, sugar industry by-products such as sugar beet pulp contribute significantly to animal diets by providing highly fermentable fiber, which supports rumen microbial activity and serves as an important energy source. Starch and fiber based industrial residues can also be converted into valuable feed resources through appropriate processing techniques. This review evaluates the chemical composition, nutritional properties, and application areas of agro-industrial plant by products in animal feeding systems, as well as their contribution to sustainable feed production. The findings indicate that, with proper preservation methods, processing techniques (such as fermentation, drying, and pelleting), and balanced ration formulation, these by-products can be effectively transformed into valuable alternative feed sources for both ruminant and monogastric animals.

Furthermore, their utilization contributes to feed cost reduction and improves agricultural waste management, aligning with the principles of circular economy and environmental sustainability.

Keywords: Agro-industry, by products, animal nutrition, rapeseed meal, sunflower meal, sustainable feed

KENEVİR (*CANNABİS SATİVA* L.) BİTKİ ATIKLARININ HAYVANSAL ÜRETİMDE ALTERNATİF YEM KAYNAĞI OLARAK DEĞERLENDİRİLME POTANSİYELİ

POTENTIAL UTILIZATION OF HEMP (CANNABIS SATIVA L.) PLANT RESIDUES AS AN ALTERNATIVE FEED RESOURCE IN ANIMAL PRODUCTION

Medine ÇOPUR DOĞRUSÖZ
Doç. Dr., Yozgat Bozok Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Yozgat, Türkiye.
ORCID ID: 0000-0002-9159-1699

Levent YAZICI
Doç. Dr., Yozgat Bozok Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Yozgat, Türkiye.
ORCID ID:0000-0002-6839-5366

ÖZET

Hayvansal üretimde yem maliyetlerinin artması, sürdürülebilir ve ekonomik alternatif yem kaynaklarının araştırılmasını zorunlu hale getirmiştir. Kenevir (*Cannabis sativa* L.), lif, tohum ve yağ üretimi amacıyla yetiştirilen önemli endüstriyel bitkilerden biridir. Hasat ve işleme süreçleri sonrasında ortaya çıkan yaprak, sap, çiçek ve diğer bitkisel artıklar önemli miktarda biyokütle oluşturmaktadır. Bu atıkların değerlendirilmesi, hem çevresel sürdürülebilirliğe katkı sağlamakta hem de hayvancılık sektörüne alternatif yem kaynakları sunmaktadır. Kenevir bitki atıkları; protein, lif, esansiyel yağ asitleri ve çeşitli biyoaktif bileşikler bakımından dikkat çekmektedir. Yapılan çalışmalar, uygun işleme yöntemleri ve rasyon formülasyonları ile bu materyallerin ruminant ve bazı kanatlı türlerinin beslenmesinde kullanılabileceğini göstermektedir. Bununla birlikte, besin madde içeriğinin değişkenliği, antinutrisyonel faktörler ve yasal düzenlemeler gibi hususlar kullanımını sınırlandırabilmektedir. Bu bildiride, kenevir bitki atıklarının hayvansal üretimde yem kaynağı olarak değerlendirilme olanakları, besleme açısından avantajları ve karşılaşılan sınırlamalar güncel literatür ışığında ele alınmıştır.

Anahtar Kelimeler: Kenevir, bitki atıkları, alternatif yem kaynakları, hayvansal üretim, sürdürülebilir tarım.

ABSTRACT

The increasing cost of feed in animal production has intensified the search for sustainable and cost-effective alternative feed resources. Hemp (*Cannabis sativa* L.) is an important industrial crop cultivated primarily for fiber, seed, and oil production. Following harvesting and processing, substantial amounts of plant residues, including leaves, stems, flowers, and other biomass components, are generated. The utilization of these by-products may contribute to environmental sustainability while providing alternative feed resources for livestock production systems. Hemp plant residues are notable for their content of protein, fiber, essential fatty acids, and various bioactive compounds. Previous studies have indicated that, with appropriate processing techniques and ration formulations, these residues can be incorporated into the diets of ruminants and certain poultry species. However, variations in nutrient composition, the presence of anti-nutritional factors, and regulatory considerations may limit their widespread application. This paper reviews the potential of hemp plant residues as feed resources in animal production, highlighting their nutritional benefits and current limitations based on recent scientific literature.

Keywords: Hemp, plant residues, alternative feed resources, animal production, sustainable agriculture.

INVESTIGATION OF THE EFFECT OF SYNTHESIS METHOD ON THE MAGNETIC PROPERTIES OF $COFE_2O_4$ NANOPARTICLES

Ali Onur KAYA
Dr, Akdeniz University, Health Services Vocational School, Radiotherapy Department, 07058 Antalya, Türkiye
ORCID ID: 0000000-0003-4220-1866

Mert Can EMRE
Lecturer, Yozgat Bozok University, Sorgun Vocational School, Motor Vehicles Department, 66700 Yozgat, Türkiye
ORCID ID: 000-0002-1445-0358

ABSTRACT
Cobalt ferrite ($CoFe_2O_4$) is one of the most studied spinel ferrites and has attracted much attention due to its large magnetocrystalline anisotropy, good chemical stability, mechanical hardness, and excellent magnetic properties. $CoFe_2O_4$ nanoparticles have attracted significant attention, particularly for a broad spectrum of applications such as magnetic data storage, sensor applications, electromagnetic interference shielding, environmental remediation, and biomedical systems. The performance of these nanomaterials is strongly dependent on their chemical composition as well as on the synthesis route used. Different methods of synthesis have a great influence on the particle size, morphology, crystallinity, surface properties, magnetic behavior, and thus on the overall performance of the material. In the present work, $CoFe_2O_4$ nanoparticles were synthesized by hydrothermal and co-precipitation methods, and the effect of the synthesis route on their magnetic properties was investigated. The structural and morphological properties of the synthesized nanoparticles were investigated by suitable characterization techniques, and their magnetic properties were studied by vibrating sample magnetometer (VSM) measurements. The effect of synthesis method on magnetic performance has been evaluated by comparing the key magnetic parameters Ms (saturation magnetization), Mr (remanent magnetization), and Hc (coercivity). The study gives better understanding of the relationship (synthesis route and magnetic properties) in $CoFe_2O_4$ nanoparticles. Furthermore, it is also an attempt to contribute to the development of ferrite-based magnetic nanomaterials with tailored properties for advanced technological applications. These findings are expected to provide valuable insight in the design and optimization of high-performance magnetic materials for future electronic, environmental, and biomedical technologies.
Keywords: $CoFe_2O_4$, cobalt ferrite, hydrothermal synthesis, co-precipitation, magnetic properties, nanoparticles.

MACHINE LEARNING APPLICATIONS IN MODERN DRUG DISCOVERY: CURRENT ADVANCES, CHALLENGES, AND FUTURE PERSPECTIVES

Ali Onur KAYA
Dr, Akdeniz University, Health Services Vocational School, Radiotherapy Department, 07058 Antalya, Türkiye
ORCID ID:0000000-0003-4220-1866

Mert Can EMRE
Lecturer, Yozgat Bozok University, Sorgun Vocational School, Motor Vehicles Department, 66700 Yozgat, Türkiye
ORCID ID: 000-0002-1445-0358

ABSTRACT
The drug discovery process is traditionally accompanied by high costs, long development time, and considerable failure rates at preclinical and clinical stages. Recent progress in artificial intelligence (AI) and machine learning (ML) has opened up new possibilities for accelerating the discovery and optimization of new therapeutic compounds. Machine learning algorithms can analyze the large chemical and biological datasets, find hidden relationships between the molecular structure and biological activities, and improve the prediction of the pharmacological properties. ML approaches have been successfully applied in modern drug discovery, including quantitative structure-activity relationship (QSAR) modeling, virtual screening, toxicity prediction, pharmacokinetic evaluation, and lead optimization. Methods like Random Forest, XGBoost, Extra Trees, Gradient Boosting and Neural Networks have shown promise in predicting molecular potency and reducing the number of experimental candidates that need to be validated in the laboratory. Also, the application of explainable artificial intelligence (XAI) methods helps to interpret the model by providing the molecular descriptors and structural features that are highly correlated with the biological activity. These interpretable frameworks can be useful for rational drug design and decision making in early stage pharmaceutical development. However, despite these advantages, there are still several challenges, such as data quality, dataset imbalance, model transferability, and applicability domain limitations. It is critical to address these issues to improve the robustness and generalizability of predictive models. Machine learning is an emerging, powerful tool that is helping to make traditional drug discovery workflows faster, more efficient, and data-driven. Future progress in computational intelligence, molecular simulations and experimental validation should further speed up the development of safer and more effective therapeutic agents.
Keywords: Machine Learning, Drug Discovery, Artificial Intelligence, QSAR, Virtual Screening, Drug Design.

MACROECONOMIC DETERMINANTS OF ECONOMIC GROWTH: A COMPARATIVE ANALYSIS OF BRUNEI, MALAYSIA, AND SINGAPORE (2010–2023)

Alexzender Anak Stapa
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

Dr. Junaid M. Shaikh
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

ABSTRACT
This study examines the impact of key macroeconomic indicators—Foreign Direct Investment (FDI), inflation rate, trade openness, and government spending—on economic growth (GDP growth) in Brunei Darussalam, Malaysia, and Singapore. Utilizing a comparative quantitative research design, annual data from 2010 to 2023 were sourced from the World Bank database. The empirical framework employs descriptive statistics, Pearson correlation, multiple linear regression, and trend analysis, alongside diagnostic testing for normality and heteroscedasticity. The regression models reveal distinct economic drivers across the three nations. In Malaysia, the indicators demonstrate strong explanatory power (R^2 = 0.70) with trade openness and inflation acting as significant positive drivers of growth. Conversely, Brunei Darussalam displays weak correlations, reflecting an economy heavily reliant on volatile global oil and gas markets rather than domestic macroeconomic indicators. Similarly, Singapore's model shows moderate explanatory power but low statistical significance for domestic variables, underscoring its profound vulnerability to broader global economic conditions. These findings provide critical insights for policymakers designing tailored macroeconomic strategies in the ASEAN region
Keywords: Macroeconomic Indicators, GDP Growth, Comparative Analysis, ASEAN, World Bank.

HOW ACCOUNTING COMPETENCIES DRIVE AUDIT QUALITY AND IFRS USEFULNESS IN BRUNEI AND MALAYSIA

Yen Shin Chze@Amy Yen
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

Dr. Junaid M. Shaikh
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

ABSTRACT
This paper analyzes the impact of accounting staff capabilities on perceived audit quality and the ultimate decision usefulness of IFRS-based financial reports. Although IFRS is designed to improve financial transparency and comparability, its real-world efficacy rests on human implementation. Drawing on Human Capital Theory, Institutional Theory, and Decision-Usefulness Theory, we examine how knowledge, experience, organizational learning, and IFRS familiarity influence reporting outcomes. We surveyed accounting practitioners in Brunei Darussalam and Malaysia, utilizing PLS-SEM to evaluate the responses. The findings show that technical proficiency and hands-on IFRS usage are primary drivers of financial reporting usefulness. This impact operates directly and through the enhancement of perceived audit quality. Additionally, the study highlights how local regulatory environments shape these professional dynamics.
Keywords: IFRS implementation, Practitioner competence, Perceived audit quality, Decision-usefulness theory, PLS-SEM, Brunei Darussalam, Malaysia.

BUDGETARY PRACTICES AND FINANCIAL PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES) IN BRUNEI DARUSSALAM

Abdul Wazeef A.M. Abdul
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

Dr. Junaid M. Shaikh
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

ABSTRACT
This study investigates the empirical relationship between structured budgetary practices and the corporate financial performance of Small and Medium Enterprises (SMEs) operating within Brunei Darussalam. Beyond this primary nexus, the inquiry evaluates the contextual influence of operational constraints, financial literacy levels, and institutional external support on the adoption and efficacy of budgetary frameworks. Adopting a rigorous quantitative research design, empirical data were gathered from a sample of 101 SME executives and owner-managers utilizing a highly structured survey instrument. The retrieved datasets underwent comprehensive statistical evaluation, encompassing descriptive statistics, internal consistency reliability testing, Pearson correlation analysis, and multiple linear regression modeling. The empirical evidence demonstrates a robust, statistically significant positive association between systematic budgeting workflows and firm financial performance. Notably, the regression analysis confirms that budgetary practices serve as a critical determinant of financial variance, explaining approximately 48.9% of the fluctuations in SME financial outcomes. Furthermore, the analysis reveals that heightened financial literacy and seamless access to external institutional assistance act as positive catalysts for budget execution, whereas pervasive operational bottlenecks significantly diminish its structural effectiveness. Ultimately, these insights underscore the strategic imperative of formal financial planning in optimizing enterprise sustainability, thereby offering vital macroeconomic implications for industrial practitioners, regulatory policymakers, and future academic literature.
Keywords: Budgetary Practices, Financial Performance, SMEs, Financial Literacy, Brunei Darussalam

ARTIFICIAL INTELLIGENCE IN ACCOUNTING INFORMATION SYSTEMS FOR ESG REPORTING: MANAGERIAL AND ECONOMIC EVIDENCE FROM ASEAN

Nurul Khairina binti Kamal
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

Dr. Junaid M. Shaikh
UTB School of Business, Universiti Teknologi Brunei, Jalan Tungku Link, Gadong, BE1410, Brunei Darussalam

ABSTRACT
This study investigates the deployment of artificial intelligence (AI) within Accounting Information Systems (AIS) for environmental, social, and governance (ESG) reporting, alongside its broader managerial and economic outcomes within ASEAN organizations. Integrating the Technology Acceptance Model (TAM), Stakeholder Theory, and the Resource-Based View (RBV), this paper develops a comprehensive framework to evaluate the determinants and consequences of AI adoption. Data were gathered through a cross-sectional survey of 101 professionals, predominantly based in Brunei Darussalam. The empirical findings indicate that AI integration significantly enhances ESG reporting quality. Surprisingly, within the TAM framework, perceived ease of use—rather than perceived usefulness—emerges as the primary driver of AI adoption. While superior ESG reporting quality positively influences internal managerial decision-making, it does not yield a direct, immediate impact on objective firm economic performance. Finally, the analysis uncovers a pronounced implementation maturity gap between emerging ASEAN economies and the advanced standards observed in Singapore.
Keywords: Artificial intelligence, Accounting Information Systems (AIS), ESG reporting quality, Technology Acceptance Model (TAM), ASEAN

A CONCEPTUAL ANALYSIS OF THE BINARY OPPOSITION "TRUTH/LIE" IN ENGLISH LITERATURE: FROM METAPHYSICAL ABSOLUTE TO POSTMODERN DECONSTRUCTION

Anuar Gulshat
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Bekkozhanova Gulnar
Al-Farabi Kazakh National University, Almaty, Kazakhstan

Manapova Gulzhan
Kazakh national women's teacher training university, Almaty, Kazakhstan

Abstract
This article presents a comprehensive, in-depth conceptual analysis of the representation of the fundamental binary opposition "truth/lie" in English literary discourse. The study spans a broad chronological period, from the Renaissance to early 21st-century postmodernism. Using works by William Shakespeare, John Swift, Charles Brontë, Oscar Wilde, William Woolf, John Fowles, and Ian McEwan, the historical evolution of the dichotomy is traced.
The transition from ontological absolutism, where truth was understood as a sacred cosmic order, to total postmodern relativism, deconstruction, and the dominance of simulacra is demonstrated. Particular attention is paid to the cognitive metaphors of the concepts TRUTH and LIE, the mechanisms of "unreliable narration" and the ethical potential of fiction as a tool for searching for existential truth.
Keywords: conceptual analysis, binary opposition**,** English Literature, the concepts TRUTH and LIE, literary development

BRIDGING NURSING AND ENGINEERING: ADVANCING HEALTHCARE THROUGH INNOVATION, AI, AND HUMAN-CENTERED DESIGN – A SYSTEMATIC REVIEW

Aisha A. Ohieku
Faculty of Allied Health Sciences, University of Abuja

Salisu Alhaji nuhu
Faculty of Allied Health Sciences, University of Abuja

ABSTRACT

Engineering advances including artificial intelligence, robotics, wearables, telehealth, and human-centered design are transforming nursing by improving safety, quality, and efficiency. However, evidence on effective nurse–engineer collaboration remains fragmented. This systematic review synthesizes current knowledge on engineering contributions to nursing, examines collaboration barriers and facilitators, and outlines pathways for integrating technology into nursing education, research, and practice. Following PRISMA 2020 guidelines, studies published from January 2018 to April 2026 were sourced from PubMed, Scopus, Web of Science, CINAHL, ScienceDirect, and Google Scholar. Of 2,184 initial records, 412 duplicates were removed, leaving 1,772 for screening. Full-text review of 279 studies and quality appraisal using JBI tools resulted in 62 included studies. Six core themes emerged: AI-assisted decision-making, robotics and automation, wearable technologies, smart care environments, human-centered engineering, and interdisciplinary education and research. AI improved diagnostic accuracy by 18–35%, while wearables reduced hospital readmissions by 15–28%. Persistent barriers include limited digital skills, infrastructure gaps, ethical concerns, and weak cross-disciplinary teamwork. Engineering innovations clearly enhance nursing practice in terms of patient safety, care quality, and operational efficiency. Sustainable progress depends on strengthening nurse–engineer partnerships and investing in ongoing professional development to support technology-driven healthcare delivery.

Keywords: Nursing, Engineering, Artificial Intelligence

DENDRO-ECOLOGICAL ZONING FOR SEMI-ARID RESTORATION: A DATA-DRIVEN SPECIES SELECTION FRAMEWORK FOR THE BARIND TRACT, BANGLADESH

Sadid Shahriyar
Faculty of Agriculture, Sher-e-Bangla Agricultural University

Abstract
The Barind Tract in northwestern Bangladesh is a fragile Pleistocene terrace marked by high temperatures, poor rainfall infiltration, and steadily declining soil organic matter. The Barind Multipurpose Development Authority (BMDA) has run large afforestation campaigns across the region, but its heavy reliance on fast-growing exotics such as Eucalyptus camaldulensis and Acacia auriculiformis has drawn growing concern over what these monocultures are doing to the area's hydrological balance and long-term soil health. This paper puts forward a Dendro-Ecological Zoning (DEZ) model that combines fifteen years of climatic records (2002–2017) from three sub-zones—Puthia, Paba, and Godagari—with species performance data. Using Paterson's (1956) Climate Vegetation and Productivity (CVP) Index, site potential is estimated and habitat suitability shifts are projected for the year 2100. The data point to a sharp rainfall decline in Puthia, from 1321.9 mm in 2002 down to 871.0 mm by 2017, tracking closely with groundwater depletion to a depth of 14.20 m. Exotic species still post the highest survival rates (98%), yet contribute comparatively little to soil restoration next to nitrogen-fixing species such as Albizia lebbeck, which is projected to lose nearly 40% of its suitable habitat by 2100. The findings suggest that restoration planning in the Barind needs to move from "rapid greening" toward climate-resilient indexing, favoring species such as Shorea robusta and Terminalia arjuna, projected to gain 34% and 25.5% in suitable area respectively under future climate conditions.
Keywords: Barind Tract; CVP Index; Dendro-Ecological Zoning; Soil Restoration; Climate Resilience; Species Selection.

HR MANAGEMENT – KEY FACTOR OF COMPETITIVENESS IN MODERN BUSINESS

Vyacheslav PRYLYUK
Taras Shevchenko University of Kyiv, Department of International Busines, Kyiv, Ukraine

ABSTRACT
In today's unstable business environment, HR management is becoming key to ensuring the competitiveness of companies. It is now provided not only by market positions and financial capabilities, but also by the organization's ability to attract, develop and retain highly qualified employees, supporting the conditions for their self-realization, motivation and integration into the strategic goals of the business. Such tools as HR Information Systems, employee data analytics, AI for automating recruitment, adaptation and training, mobile platforms for managing communication, tasks and performance assessment have become popular. HR management, for example, of the companies Google, Toyota, IKEA is characterized by the following indicators:
- investment in training per 1 employee per year (2023) - $5000, $2000, $1500 respectively;
- employee satisfaction level - 86%, 79%, 83% respectively;
- annual staff turnover - 5.5%, 7%, 6.2% respectively;
- the share of innovative ideas submitted by staff – 70%, 60%, 55% respectively;
- corporate culture index (Glassdoor) – 4.5/5, 4.2/5, 4.3/5 respectively;
- the number of internal development programs – 100+, 50+, 60+ respectively.
Google uses Big Data, supports the “20% time” policy, which allows employees to develop their own ideas. The company invests $1,450 in training per employee every year, has an eNPS of +69 and productivity of over $1.42 million per employee. Toyota uses the “kaizen” philosophy, which is based on involving employees in continuous improvement of the company's activities. This allows achieving over 85% staff involvement, reducing staff turnover and increasing production quality.
IKEA uses the “70-20-10” model: 70% – learning through practice, 20% – learning through interaction with colleagues, 10% – training in formal courses. Staff satisfaction – 83%.
A noteworthy example of Starbacks as a company with a highly developed corporate culture. Its HR strategy is characterized by support for initiative, development of emotional intelligence, open dialogue, the concept of “third place” for employees, well-being programs and an inclusive environment. As a result, the impact of corporate HR culture on the company’s productivity is characterized by the following indicators compared to the industry average:
- employee satisfaction level – 85% and 72% (high level of satisfaction due to corporate culture);
- annual staff turnover – 10% and 15% (low turnover due to support for career growth);
- investment in training per employee per year – $1,200 and $900 (the company actively invests in training and development);
- vacancy closing time (days) – 30 and 45 (quick filling of vacancies due to corporate culture);
- productivity per employee ($) – 900,000 and 750,000 (high productivity due to supporting employee motivation);
- expenses for social benefits – 18% and 10% (high expenses for ensuring employee loyalty).
As a result of this policy, the competitiveness indicators of the Starbucks brand reached the following values in 2023:
- customer loyalty level – 78%;
- revenue growth – 12%;
- product innovation level – 80%;
- global market coverage of the country – 80+;
- average length of employment of an employee in the company – 5 years.
In HR management of international companies (MC), a competency-based approach to personnel selection using digital technologies is typical, while in Ukraine it is traditional, based on CV and personal impressions.
Personnel recruitment in MC is carried out on the basis of employer brand formation, and in Ukraine limited positioning in the labor market is typical. Adaptation of new employees in MC has a clear structure, supported by mentoring and feedback. Integration into corporate culture is carried out through onboarding programs and team projects, while in Ukraine this process is often informal or simply absent.

The considered examples can be useful for developing the competitiveness of Ukrainian companies in the international market.

Keywords: competitiveness, staff turnover, employee motivation, HR management, HR strategies

UPHOLDING NURSING ETHICS: MAINTAINING PROFESSIONAL BOUNDARIES IN PRACTICE A STUDY CONDUCTED IN SELECTED HEALTH INSTITUTIONS IN NASARAWA STATE, NIGERIA

Addra Noah Agbo
Masters Student in Nursing Jurisprudence,
Faculty of Nursing Sciences, University Of Abuja, Abuja, Nigeria.

ABSTRACT

Background: Professional boundaries are fundamental to ethical nursing practice and are essential for safeguarding patient dignity, trust, and safety. Despite the existence of professional codes and regulatory guidelines, boundary violations continue to occur, posing risks to patients and undermining the integrity of the nursing profession.

Objective: This study assessed nurses' knowledge and perceptions regarding professional boundaries and examined common factors contributing to boundary challenges in nursing practice.

Methods: A descriptive cross-sectional study was conducted among 120 registered nurses in selected healthcare facilities in Nasarawa State, Nigeria. Data were collected using a structured, self-administered questionnaire and analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations.

Results: The findings showed that 84.2% of respondents demonstrated good knowledge of professional boundaries, while 78.3% acknowledged that boundary violations negatively affect patient safety and quality of care. Approximately 65.8% identified excessive emotional involvement with patients as a common challenge, 58.3% reported concerns regarding social media interactions with patients, and 71.7% indicated that inadequate ethics training contributed to boundary-related issues. Furthermore, 89.2% of respondents supported continuous professional ethics education and regular institutional training on boundary management.

Conclusion: Although nurses generally possess good knowledge of professional boundaries, significant challenges remain in maintaining ethical relationships in contemporary healthcare settings. Strengthening ethics education, promoting reflective practice, and enforcing institutional and regulatory guidelines are essential for improving professional conduct and safeguarding patient-centred care.

Keywords: Nursing ethics; Professional boundaries; Nursing jurisprudence; Patient safety; Professionalism; Nigeria.

QUANTUM-ENHANCED AI: A COMPARATIVE STUDY OF CLASSICAL AND QUANTUM MACHINE LEARNING MODELS IN FINANCIAL APPLICATIONS

Sadais Amjad
Department of Accounting & Finance, Faculty of Management Sciences and Commerce, The Islamia University of Bahawalpur, 63100 Bahawalpur, Pakistan

ABSTRACT
Computational power is essential in the financial industry to enable optimizations of portfolios, assessment of risks, pricing of derivatives, detection of fraudulent activities, and prediction of markets. However, increased complexity of financial markets in the modern world becomes problematic for conventional approaches to computation. Quantum finance is a term that is used to refer to a novel multi-disciplinary approach aimed at solving computational problems that are hard to compute classically. Since it entails the application of quantum computing, mathematical finance, and artificial intelligence, quantum algorithms may be applied to optimize the process of financial analysis and decision-making. There are many interesting uses of quantum computers in such domains as portfolio optimization, Monte Carlo simulation, option valuation, credit risk evaluation, and high frequency trading. Due to the ability of processing large amounts of data and considering different scenarios simultaneously, quantum computers can reduce computation times by using complex models of financial markets. Moreover, integration of quantum machine learning into the computation process may lead to better predictions and identification of financial market trends and anomalies. While quantum computing is filled with endless opportunities, there are many obstacles that it encounters when it comes to being utilized in finance. Such obstacles include limitations in hardware, development of novel algorithms, concerns about cybersecurity, and necessity of certain expertise. Quantum computing is at its initial stage nowadays; however, there have already been many investments in research on computational finance. This paper will focus on basics of quantum finance, its applications, future perspectives, as well as problems connected with implementation of this approach. Implementation of quantum technologies in finance sphere will lead to many changes in the financial system of the digital era.
Keywords: Quantum Finance, Quantum Computing, Financial Modeling, Portfolio Optimization, Quantum Algorithms, Risk Management, Quantum Machine Learning,Digital Finance, Computational Finance

3D PRINTING OF MEDICINES: CUSTOM-MADE DOSAGE FORMS

Palanisamy A
Bharath institute of higher education and research Chennai

Deepak s
Bharath institute of higher education and research Chennai

Muthuramalingam R.
Bharath institute of higher education and research Chennai

ABSTRACT
Three-dimensional (3D) printing has emerged as a disruptive technology in pharmaceutical sciences, offering a novel approach to the design and manufacture of personalized medicines. Unlike conventional mass production, 3D printing enables precise control over drug dose, geometry, release kinetics, and multi-drug combinations within a single dosage form. This technology is particularly beneficial in patient populations requiring individualized therapy, such as pediatric, geriatric, and patients with chronic or rare diseases. Various 3D printing techniques, including fused deposition modeling, inkjet printing, and stereolithography, have been explored for pharmaceutical applications. The ability to fabricate complex drug delivery systems, such as modified-release tablets and polypills, enhances therapeutic efficacy and patient adherence. Despite its potential, challenges related to regulatory approval, quality assurance, material selection, and large-scale manufacturing remain. Regulatory agencies are gradually developing guidelines to ensure the safety, efficacy, and reproducibility of 3D-printed medicines. Overall, 3D printing represents a major step toward precision medicine, enabling pharmacists to play a critical role in individualized drug therapy and future pharmaceutical care.
Keywords: 3D printing, personalized dosage forms, pharmaceutical manufacturing, precision medicine, drug delivery

DETERMINANTS OF SKELETAL HEALTH IN ELITE ATHLETES: ASSOCIATIONS AMONG BONE MINERAL DENSITY, LEAN MASS, AND BONE STRESS INJURIES

Prof. (Assoc.) PhD. Anna Kopiczko
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland
ORCID ID:0000-0002-1222-113X

PhD. Patrycja Widłak
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland.
ORCID ID:0000-0003-3433-1310

PhD. Joanna Cieplińska
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Rehabilitation, Department of Clinical Physiotherapy, Warsaw, Poland
ORCID ID:0000-0002-6836-6741

ABSTRACT
This study investigated factors associated with musculoskeletal health in high-performance athletes, with particular emphasis on the interplay between bone mineral density (BMD), lean tissue mass, type of sport participation (endurance versus combat sports), and lifetime history of bone stress fractures (BSFs).
The study enrolled 129 male elite athletes competing in endurance sports (long- and ultra-distance running) and combat disciplines (wrestling, judo, and Brazilian jiu-jitsu). Bone mineral density at the lumbar spine and femoral neck was measured using dual-energy X-ray absorptiometry (DXA). Body composition characteristics were determined through bioelectrical impedance analysis complemented by anthropometric assessments. Information regarding previous injuries and overuse-related complaints was obtained from validated questionnaires and retrospective training documentation. Athletes with metabolic or endocrine conditions known to affect bone metabolism were excluded from participation. All procedures complied with internationally recognized ethical guidelines. Ethical approval was granted by the Bioethics Committee of the National Institute of Public Health PZH – National Research Institute (Protocol No. 2/2025). The study was financially supported by the Ministry of Education and Science under Research Project UPB No. 14 at the Józef Piłsudski University of Physical Education in Warsaw, Poland.
Athletes engaged in endurance disciplines demonstrated significantly lower BMD values at all evaluated skeletal locations compared with combat sport athletes and exhibited a greater frequency of bone stress fractures. BMD values below age-adjusted reference ranges were identified only among endurance competitors. In contrast, participants from combat sports more commonly reported no previous stress-fracture events. Multivariable analyses indicated that femoral neck BMD was independently related to lean body mass, sport category, and prior BSF occurrence. Measurements obtained at the lumbar spine were strongly influenced by muscularity and the specific training profile. Furthermore, indicators reflecting bone health were associated with a history of musculoskeletal injury.
Bone health and overall musculoskeletal status in elite athletes appear to be shaped by both sport-specific mechanical loading and body composition characteristics. Competitors involved in endurance sports may be particularly vulnerable to reduced bone density and stress-related skeletal injuries. Regular assessment of BMD together with monitoring of lean mass could facilitate earlier identification of athletes at risk and contribute to the development of more effective preventive interventions.
Keywords: bone mineral density; bone stress fractures; elite athletes; musculoskeletal system; injury prevention.
Source of funding
This work was written with the financial support of the Ministry of Education and Science as part of the project at Józef Piłsudski University of Physical Education in Warsaw (Poland), Research Project (UPB no. 14) titled “Determinants of bone mineral status in recreational and professional sports of different age groups”

MULTIFACTORIAL INJURY RISK ASSESSMENT IN TEAM SPORT ATHLETES: INTEGRATING FUNCTIONAL, MORPHOLOGICAL, AND BIOCHEMICAL INDICATORS

PhD. Patrycja Widłak
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland.
ORCID ID: 0000-0003-3433-1310

Prof. (Assoc.) PhD. Anna Kopiczko
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland
ORCID ID:0000-0002-1222-113X

Prof. (Assoc.) PhD. Dariusz Boguszewski
Department of Individual Sports, Faculty of Physical Education, Józef Piłsudski University of Physical Education in Warsaw, Warsaw, Poland
ORCID ID:0000-0002-8343-8870

PhD. Aspasia Dania
National and Kapodistrian University of Athens, Department of Physical Education and Sport Science, Athens, Greece
ORCID ID:0000-0003-2829-0479

Prof. (Assoc.) PhD. Piotr Bartnicki
Medical University of Łódź, Faculty of Medicine, Clinic of Nephrology, Arterial Hypertension and Family Medicine, Łódź, Poland
ORCID ID: 0000-0002-2260-5225

ABSTRACT

Efficient motor control and postural stability are fundamental components of athletic performance readiness and are closely associated with the risk of overuse injuries. Although functional screening tools are useful for detecting limitations in mobility, neuromuscular control, and inter-limb asymmetries, their standalone predictive value remains limited, which highlights the necessity of incorporating additional physiological and training-related indicators.

The development of injury risk is complex and influenced by multiple interacting factors, including morphological characteristics (such as body composition) as well as physiological parameters, including energy availability, accumulated fatigue, and systemic inflammation. The integration of these dimensions provides a more comprehensive understanding of how training load influences motor performance and overload-related mechanisms.

This study involved 48 professional athletes competing in team sports. The assessment protocol included evaluation of movement quality and dynamic postural control using the Functional Movement Screen (FMS) and the Y Balance Test (YBT). Body composition analysis was also performed, together with biochemical profiling focusing on markers associated with exercise-induced stress, fatigue, and inflammatory responses.

Within the studied cohort, the majority of athletes demonstrated FMS results corresponding to low-to-moderate injury risk, while only a small proportion fell into the high-risk category. ANCOVA analysis showed a significant effect of body mass on cortisol and C-reactive protein (CRP) levels, as well as an influence of training experience on creatine kinase (CK) activity.

The CRP model was statistically significant and demonstrated strong explanatory power (high R^2), indicating a substantial combined effect of the analysed predictors on this inflammatory marker. No significant relationships were identified for IL-6, TNF-α, or TGF-β, and models for these variables showed limited explanatory capacity.

Overall, the results suggest that although most athletes present a low-to-moderate injury risk based on functional screening, such assessment alone is insufficient for precise risk prediction.

Morphological and physiological characteristics, particularly body mass and training history, contribute meaningfully through their effects on biochemical responses. The strong associations observed for CRP underline the role of inflammatory processes in relation to training load. These findings support the use of an integrated, multidimensional approach to injury risk assessment in athletes.
Keywords: Functional Movement Screen; Y-Balance Test, biochemical markers; team sport athletes; injury risk; movement assessment.

Source of funding
This work was written with the financial support of the Ministry of Education and Science as part of the project at Józef Piłsudski University of Physical Education in Warsaw (Poland), Research Project (UPB no. 13) titled "Assessment of the Relationship Between Selected Lifestyle Factors and the Risk of Sports Injuries in a Young Adult Population."

PREDICTORS OF BONE STRESS FRACTURES IN PROFESSIONAL ATHLETES: ROLE OF BONE MINERAL DENSITY AND MUSCLE MASS

Prof. (Assoc.) PhD. Anna Kopiczk
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland
ORCID ID:0000-0002-1222-113X

PhD. Joanna Cieplińska
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Rehabilitation, Department of Clinical Physiotherapy, Warsaw, Poland
ORCID ID: 0000-0002-6836-6741

PhD. Patrycja Widłak
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland.
ORCID ID:0000-0003-3433-1310

Prof. (Assoc.) PhD. Artur Kruszews
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Individual Sports, Warsaw, Poland.
ORCID ID:0000-0001-8248-7964

ABSTRACT

Background and Aim: Combat sports and endurance training exert different effects on bone mineral density (BMD), with potential implications for the risk of bone stress fractures (BSF). BSFs remain a complex and underexplored issue among professional athletes, particularly in relation to sport type and skeletal load. This study aimed to assess BMD in the hip and lumbar spine and the lifetime incidence of BSF in elite Polish long-distance runners and combat sports athletes.

Materials and Methods: The study included 129 Caucasian male professional athletes: 60 from endurance sports (marathon, half-marathon, ultra, cross-country) and 69 from combat sports (wrestling, judo, Brazilian jiu-jitsu). Dual-energy x-ray absorptiometry, kinanthropometry, bioelectrical impedance analysis, and standardized injury questionnaires were used to collect data. In the initial phase, clinical methods were employed to assess the occurrence of bone stress fractures. Each participant completed standardized injury questionnaires, including the Oslo Sports Trauma Research Center Overuse Injury Questionnaire. Additionally, individual training diaries were reviewed to document the incidence, duration, and characteristics of musculoskeletal complaints. The exclusion criteria were contraindications for the basic kinanthropometric measurements, densitometry scan, and metabolic diseases that secondarily disrupt bone metabolism as thyroid diseases, Hashimoto, rheumatoid diseases, and rickets. The project complies with the principles of bioethics, as confirmed by the Bioethics Committee of the National Institute of Public Health (protocol number 1/2021), and the study was conducted according to the rules and regulations of the Declaration of Helsinki for experiments involving humans. This work was written with the financial support of the Ministry of Education and Science as part of the Research Project (UPB No. 14): “Determinants of bone mineral status in recreational and professional sports of different age groups”.

The project is being implemented at the Józef Piłsudski University of Physical Education in Warsaw, Poland, by a multidisciplinary team of researchers.

Results: Endurance athletes showed significantly lower BMD values in all measured sites compared to combat sport athletes (large effect sizes > 0.8) and a higher lifetime incidence of BSFs (medium effect size: 0.5–0.8). BMD below the expected range for age at the femoral neck and lumbar spine was observed exclusively in the endurance group. The combat sports group had a significantly higher percentage of athletes without BSF history. Covariance analyses revealed that femoral neck BMD was significantly influenced by muscle mass, number of BSFs, and sport type (adj. $R^2 = 0.73$). Bone mass was predicted by body height and sport type (adj. $R^2 = 0.39$), while Z-scores were influenced by BSF

history and sport type (adj. $R^2 = 0.72$). All lumbar spine bone parameters were significantly associated with muscle mass and sport type.
Conclusions: There is a strong association between BSF history, sport discipline, and bone mineral status in elite athletes. The effect of fractures on BMD differs by sport type, highlighting the need for sport-specific screening and prevention strategies. Routine assessment of BMD may aid in the early detection and prevention of stress-related bone injuries in high-performance athletes.
Keywords: bone mineral status, bone fractures, marathon, half marathon, ultra running, cross-country running, wrestling, judo, Brazilian jiu-jitsu

ASSESSMENT OF SPORTS INJURY RISK IN PROFESSIONAL KARATE ATHLETES USING FMS AND Y-BALANCE TESTS

PhD. Patrycja WIDŁA
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland.
ORCID ID:0000-0003-3433-1310

Prof. (Assoc.) PhD. Anna KOPICZKO
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland
ORCID ID:0000-0002-1222-113X

PhD. Bartłomiej MICHALAK
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Sport Theory, Warsaw, Poland
ORCID ID:0000-0002-4469-8004

PhD. Marzena MALARA
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland
ORCID ID:0000-0003-0765-8318

PhD. Joanna CIEPLIŃSKA
Department of Clinical Physiotherapy, Faculty of Rehabilitation, Józef Piłsudski University of Physical Education in Warsaw, Poland
ORCID ID:0000-0002-6836-6741

ABSTRACT
The assessment of sports injury risk is essential for planning and optimizing training programs for professional athletes. Injuries can cause long-term activity limitations or even end an athlete's career. Identifying functional deficits within the biokinematic chain allows for early preventive actions to reduce musculoskeletal injury risk.
This study aimed to assess sports injury risk in 21 professional karate athletes using the Functional Movement Screen (FMS) and Y-Balance Test (YBT), which evaluate movement patterns, stability, and dynamic balance.
The average FMS total score was 18.93 ± 1.59, indicating good overall movement quality. The highest mean score was recorded for trunk stability push-up (3.00 ± 0.00), reflecting well-developed core stability, while the lowest was for shoulder mobility (2.40 ± 0.72), suggesting limited upper-body flexibility. Other components such as hurdle step (2.86 ± 0.36), in-line lunge (2.81 ± 0.37), and active straight leg raise (2.76 ± 0.44) also showed high performance levels.
In the Y-Balance Test, the right lower limb achieved higher reach distances in all directions than the left, with the greatest asymmetry in the anterior direction (right: 77.95 ± 7.95 cm; left: 60.84 ± 7.25 cm). The composite YBT score was 110.24% for the right leg and 91.53% for the left, indicating better dynamic balance and stability on the right side.
Overall, professional karate athletes demonstrated good functional movement quality but showed asymmetries likely related to sport-specific training patterns. The findings emphasize the need for corrective exercises focused on enhancing shoulder mobility and reducing lower-limb asymmetries to minimize injury risk and support optimal athletic performance.
Keywords : functional tests, karate, FMS test, Y-Balance Test

Source of funding
This work was written with the financial support of the Ministry of Education and Science as part of the two projects at Józef Piłsudski University of Physical Education in Warsaw (Poland), Research Project

(UPB no. 13) title “Assessment of the Relationship Between Selected Lifestyle Factors and the Risk of Sports Injuries in a Young Adult Population” and Research Project (UPB no. 14) title “Determinants of bone mineral status in recreational and professional sports of different age groups”

EATING DISORDERS AND BODY IMAGE IN YOUNG FEMALE ATHLETES: THE IMPACT OF SPORTS ENVIRONMENT AND TYPE OF DISCIPLINE

Kamila Żarska
Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Student Member of the Student Scientific Circle of Lifestyle Medicine,Warsaw, Poland

Patrycja Widłak PhD.
Head of the Student Scientific Circle of Lifestyle Medicine, Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland. ORCID ID:0000-0003-3433-1310

ABSTARCT
Contemporary sport, particularly at the academic and competitive level, is associated with increasing pressure related to body appearance, body mass, and athletic performance. Within the sports environment, especially in disciplines where aesthetics and weight control are of high importance, various factors may contribute to the development of disordered eating behaviors and reduced body image acceptance. In addition, psychosocial influences such as appearance-related comments, social comparison, and the impact of social media play a significant role. Young female athletes represent a particularly vulnerable group in terms of body image perception and eating behaviors. Therefore, examining the risk of eating disorders in this population is important from both scientific and practical perspectives.
The aim of this study was to evaluate the risk of developing eating disorders and the level of body image acceptance among female students of the Józef Piłsudski University of Physical Education in Warsaw, with particular attention to the role of the sports environment, type of sport discipline, and level of competitive involvement. The study sample consisted of 76 physically active female students representing both individual and team sports disciplines.
The research employed a diagnostic survey method using the standardized EAT-26 questionnaire, complemented by an original set of questions addressing body image perception, pressure within the sports environment, and the influence of social media. The collected data were analyzed using descriptive statistics.
The results indicated an elevated risk of eating disorders among young, physically active women.
Higher levels of disordered eating behaviors were observed in athletes participating in individual sports, who more frequently reported restrictive eating patterns, excessive body weight control practices, self-induced vomiting, and the use of weight-loss or laxative substances. The findings also highlight a notable impact of the sports environment, appearance-related feedback, and social media exposure on self-esteem and body image acceptance among respondents.
These results underline the need for further investigation as well as the development and implementation of preventive and educational programs aimed at promoting mental health, appropriate nutritional behaviors, and positive body image within the sports environment.
Keywords: eating disorders, body image, body acceptance, female students, sports environment, individual sports, team sports, EAT-26, social media, physically active women

LOWER LIMB INJURIES AMONG MALE VOLLEYBALL PLAYERS IN LOWER LEAGUES: THE SCALE OF THE PROBLEM AND POTENTIAL RISK FACTORS

Przemysław Kowalski
Józef Piłsudski University of Physical Education in Warsaw Faculty of Physical Education, Student Member of the Student Scientific Circle of Lifestyle Medicine, Warsaw, Poland

Patrycja Widłak PhD.
Head of the Student Scientific Circle of Lifestyle Medicine Józef Piłsudski University of Physical Education in Warsaw, Faculty of Physical Education, Department of Human Biology, Warsaw, Poland. ORCID ID:0000-0003-3433-1310

ABSTARCT
Lower limb injuries are among the most common health problems in volleyball players, and dynamic instability is considered an important factor associated with increased injury risk. The aim of this study was to evaluate lower limb dynamic stability in male volleyball players competing in lower leagues and to analyze its relationship with selected training variables and injury history. Twenty male volleyball players competing at lower competition levels participated in the study. Dynamic balance was assessed using the Lower Quarter Y-Balance Test (YBT). Additional data regarding training experience, injury history, and injury prevention practices were collected using a questionnaire, and statistical analyses were performed to examine relationships between YBT outcomes and selected clinical and training-related variables.
The mean composite YBT score was 88.32% (±7.06) for the left limb and 88.33% (±6.81) for the right limb. Thirteen athletes (65%) achieved results below the 89% threshold commonly associated with an increased risk of lower limb injuries. The mean inter-limb asymmetry was 3.10% (±2.06), while 30% of participants exceeded the 4% asymmetry threshold identified in the literature as a potential injury risk indicator. No statistically significant differences were found between athletes with and without a history of lower limb injury in composite YBT scores ($p = 0.939$) or asymmetry values ($p = 0.704$). A moderate, near-significant relationship was observed between training experience and YBT performance ($p = 0.068$). Additionally, 80% of participants reported at least one previous lower limb injury, with ankle sprains being the most frequently reported.
Although no statistically significant associations were identified between YBT outcomes and injury history, the results indicate that a considerable proportion of lower-league volleyball players present suboptimal dynamic stability that may increase injury risk.
These findings highlight the need for routine functional screening and structured injury prevention programs in this population, particularly in lower-level competitive settings where access to medical and physiotherapy support is often limited. Larger prospective studies are needed to further verify these observations and clarify predictive value of YBT in volleyball athletes.
Keywords: volleyball, lower limb injuries, dynamic balance, Y-Balance Test, injury risk, neuromuscular control, lower leagues, sports injuries, injury prevention, postural stability

SILENT WITNESSES, HIDDEN VICTIMS: EXAMINING THE IMPACT OF DOMESTIC VIOLENCE ON CHILDREN IN PUNJAB, PAKISTAN

Dr. Ayesha BATOOL
Ph.D., Department of Rural Sociology, University of Agriculture, Faisalabad, Pakistan.

Asst. Prof. Dr. Farkhanda ANJUM
Department of Rural Sociology, University of Agriculture, Faisalabad, Pakistan.

Asst. Prof. Dr. Sobia MAQSOOD
National Business School, The University of Faisalabad, Pakistan.

Dr. Shafiq-ur-Rehman ZIA
Focal Person, Olive Oil Project, The University of Loralai, Balochistan, Pakistan.

Abstract
Domestic violence remains a pervasive public health and human rights crisis in Pakistan, yet children who witness or experience its consequences within the household continue to occupy the margins of both scholarly inquiry and policy intervention. This study examines children as hidden victims of domestic violence in Punjab, Pakistan, exploring the direct and indirect pathways through which exposure to intimate partner violence (IPV) shapes children's psychological, developmental, and social outcomes. Drawing on an ecological-feminist theoretical framework, the study argues that children's victimhood is systematically rendered invisible by patriarchal household structures, cultural norms of silence, and institutional failures to recognize witnessing violence as a form of childhood trauma. Data were drawn from qualitative interviews with mothers, community health workers, and school teachers across peri-urban and rural districts of Punjab. Findings reveal that children exposed to domestic violence manifest elevated rates of anxiety, behavioral dysregulation, and academic disengagement, while simultaneously being compelled to adopt protective or mediating roles within the abusive household a burden disproportionately borne by girls. The study further identifies how poverty, social isolation, and limited access to mental health services compound these vulnerabilities. The findings call for a rights-based, child-centered expansion of domestic violence frameworks in Pakistani law and social policy, alongside community-level sensitization programs that recognize children not merely as collateral casualties but as direct rights-holders deserving targeted protection and psychosocial support.
Keywords: domestic violence, child witnesses, intimate partner violence, Punjab, Pakistan, childhood trauma, coercive control

BIO FUNCTIONAL EVALUATION THE BIOSOOT OF INDIAN TRADITIONAL MEDICINE, VETIVER

N.K. Udaya PRAKASH
Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai 600117, India.
ORCID ID: 0000-0003-2489-7118

Y. GUNASHREE
Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai 600117, India.

S. BHUVANESWARI
Department of Botany, Bharathi Women's College, Broadway, Chennai 600008, India.

N. PREETHI
Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Pallavaram, Chennai 600117, India.

Abstract
Vetıver shwagandha (*Chrysopogon zizanioides*) is widely used in Indian Traditional System of Medicine as an aromatic healing herb. The roots are highly used for its perfumery due to the presence of essential oils. In Indian system of traditional medicine, the roots are used as antibacterial, antifungal, antioxidant, antiinflammatory and analgesic. This is also used as a carminative, febrifuge and coolant. Due to its aroma the roots of *Chrysopogon zizanioides* is widely used in perfumery and toiletries. Due to its content of volatiles, an idea is generated to study the nature of soot termed as biosoot due to its biological origin an attempt was made to evaluate its biological functions. Due to its size, the aero nanosol generated in the form of biosoot has the ability to penetrate blood, brain barrier. In this study the biosoot was evaluated for the presence of phytochemical compounds like Tannins, Phlobatannins, Saponins, Flavonoids, Terpenoids, Cardiac Glycosides, Alkaloids, Quinones and Coumarins. Further, they are also studied for their antibacterial effect using Minimum Inhibitory Concentration (MIC) against the bacteria, i.e. *Bacillus subtlis, Staphylococcus aureus, Streptococcus mutans, Pseudomonas aeruginosa* and *Escherichia coli* using 96 well plate method. The Effective concentration (EC_{50}) value of the biosoot was also evaluated against the free radical, DPPH. The results in detail will be discussed.
Keywords: Indian Traditional Medicine, Vetiver, *Chrysopogon zizanioides*, Biosoot, Carbon Aero Nanosol, Phytochemicals, Antibacterial, Antioxidant.

A LITERATURE REVIEW ON BAUHINIA RUFESCENCE LEAVES USED FOR ANTI-MALARIAL ACTIVITY

Fatima Mustapha Bindawa
Department of Pure and Industrial Chemistry Umaru Musa Yar'adua University, P.M.B,2218, Katsina, Nigeria.

Abubakar Sani
Department of Pure and Industrial Chemistry Umaru Musa Yar'adua University, P.M.B,2218, Katsina, Nigeria.

ABSTARCT
Malaria remains a major public health challenge in sub Saharan Africa, and the increasing resistance of *Plasmodium falciparum* to commonly used antimalarial drugs has intensified the search for new plant-based therapies. This study evaluated the antiplasmodial activity and phytochemical constituents of the leaves and stem bark of *Bauhinia rufescens* (Fabaceae), a plant traditionally used for the management of malaria and febrile illnesses. The plant materials were collected, authenticated, shade dried, and pulverised, after which crude extracts were prepared using solvents of varying polarity. Preliminary phytochemical screening of the leaf and stem bark extracts was carried out using standard qualitative methods to detect major secondary metabolites. Antiplasmodial activity was assessed against *Plasmodium falciparum* using an in vitro assay, with extracts tested at graded concentrations and compared with a standard antimalarial drug as positive control. The phytochemical screening indicated the presence of bioactive classes including alkaloids, flavonoids, saponins, tannins, phenols, terpenoids, and steroids, with stronger expression in the polar extracts. The antiplasmodial evaluation showed that the ethanol and methanol extracts exhibited higher inhibitory activity than the n hexane and chloroform extracts, and activity increased with concentration, suggesting that the active principles are predominantly polar compounds. The findings support the ethnomedicinal use of *Bauhinia rufescens* for malaria treatment and recommend further work involving bioassay guided fractionation, isolation of active compounds, and in vivo toxicity and efficacy studies to establish safety and therapeutic potential.
Keywords: Bauhinia rufescens, antiplasmodial activity, Plasmodium falciparum, phytochemical screening, medicinal plants, malaria.

MANGROVE-INSPIRED DESIGN STRATEGIES FOR FLOOD-RESILIENT HOUSING IN THE NIGER DELTA REGION OF NIGERIA

Inyang, B. U.
Department of Architecture, OAU, Ile-Ife, Osun State

Ekpo, E.I. and
Department of Biological Sciences, Akwa Ibom State Polytechnic, Ikot Ekpene.

ABSTRACT
The Niger Delta region of Nigeria, faces increasing environmental challenges due to sea-level rise, frequent flooding, and ecological degradation. Conventional architectural approaches in the region often fail to respond adequately to these dynamic environmental conditions, resulting in vulnerable housing and declining living standards. This study explores the application of Biomimicry as a framework for developing flood-resilient housing systems inspired by mangrove ecosystems, which naturally thrive in waterlogged and saline environments. Mangroves exhibit adaptive features such as aerial root systems, sediment stabilization, and water filtration, which contribute to shoreline protection and ecological balance. By translating these biological strategies into architectural solutions, this research proposes elevated structural systems, modular amphibious foundations, and permeable landscape designs that align with natural hydrological processes. The study adopts a mixed-method approach, combining field observations in selected Niger Delta communities with environmental simulations and design prototyping. Findings suggest that integrating mangrove-inspired principles into housing design can significantly enhance resilience to flooding while also supporting local biodiversity and improving water management. Additionally, such designs contribute to the restoration of Ecosystem Services, including flood regulation, water purification, and microclimate stabilization. The paper argues that bridging biological sciences with architectural practice offers a sustainable pathway for addressing the complex environmental challenges of the region. This research contributes to the growing discourse on climate-responsive design by providing context-specific strategies for coastal communities in South-South Nigeria. It recommends policy integration, community participation, and interdisciplinary collaboration to scale up nature-based architectural solutions across the Niger Delta.
Keywords: Ecosystem, architectural solutions, Mangrove, degradation, coastal communities, biodiversity.

THE EFFECTIVENESS OF CRYSTALLINE WATERPROOFING ADMIXTURE IN HYDROPHOBIC CONCRETE

Lawal N.A.
Department of Civil Engineering, Federal Polytechnic Ilaro
Ogun State, Nigeria.
ORCID:0009-0001-4785-6258

Omisande L.A
Department of Civil Engineering, Federal Polytechnic Ilaro
Ogun State, Nigeria.

ABSTRACT
Water penetration has long been one of the most persistent challenges in concrete construction. Over time, moisture infiltration triggers microcracking, chemical attack, and gradual structural weakening undermining the durability of even well-designed infrastructure. This study explores how crystalline waterproofing admixtures can address this problem by improving the impermeability, workability, and overall mechanical performance of concrete cured under water. Unlike surface-applied sealants, crystalline admixtures work from within reacting with water and cement particles during hydration to grow insoluble crystals that progressively seal capillary pores and microcracks, cutting off the pathways through which water would otherwise travel. To examine this effect, crystalline admixtures were added to concrete mixes at five dosage levels 2%, 4%, 6%, 8%, and 10% by cement weight and specimens were water-cured over periods of 7, 14, 21, and 28 days. Each batch was then tested for compressive strength, water absorption, and workability. Compressive strength climbed steadily as dosage increased, peaking at the 8% level. Beyond that point, strength began to taper off slightly, a pattern that likely reflects the admixture competing with, rather than complementing, the normal hydration process at higher concentrations. Water absorption results were equally encouraging porosity dropped noticeably across all admixture mixes, pointing to meaningful gains in impermeability and long-term durability. Workability also improved, with slump values consistently higher than those of the plain control mix. Taken together, these results suggest that an 8% dosage represents the sweet spot enough to maximize strength and water resistance without disrupting cement hydration. For structures routinely exposed to moisture, such as foundations, retaining walls, and basement systems, crystalline admixtures offer a technically sound and cost-conscious route to longer service life and reduced maintenance demands.
Keywords: Crystalline Admixture, Concrete, Compressive Strength, Water Absorption, Slump Test, Workability, Durability, Optimum Dosage

EXISTENCE OF SOLUTIONS FOR NONLINEAR \(\PSI\)-HILFER COMPLEX-ORDER FRACTIONAL SYSTEMS: AN INTEGRAL EQUATION APPROACH

Samira ZERBIB
University Sultan Moulay Slimane, Beni Mellal, Morocco

Khalid HILAL
University Sultan Moulay Slimane, Beni Mellal, Morocco

Ahmed KAJOUNI
University Sultan Moulay Slimane, Beni Mellal, Morocco

ABSTRACT
The present paper is devoted to the study of the existence of solutions for a class of nonlinear hybrid systems involving the \(\psi \)-Hilfer fractional derivative of complex order \(\beta \in \mathbb{C} \). The considered system extends several existing fractional models by incorporating both the generalized \(\psi \)-Hilfer fractional operator and complex-order differentiation, providing a more flexible framework for describing memory-dependent phenomena with oscillatory behavior. First, the investigated problem is transformed into an equivalent system of fractional integral equations by employing the fundamental properties of the \(\psi \)-Hilfer fractional derivative. The existence of solutions is carried out by applying Dhage's fixed-point theorem in a suitable Banach space. Finally, a concrete illustrative example is presented to verify the applicability of the theoretical findings and to demonstrate the effectiveness of the proposed approach.
Keywords: $ \psi $-Hilfer fractional derivative, Hybrid equation, Fixed point theorem

REFERENCES
[1] M.I. Abbas, M.A. Ragusa, it Nonlinear fractional differential inclusions with non-singular Mittag-Leffler kernel. AIMS Math. 7(11), 20328–20340 (2022).
[2] D. Baleanu, S. Etemad, S. A. Rezapour, it Hybrid Caputo fractional modeling for thermostat with hybrid boundary value conditions. Bound. Value Probl. {\bf2020}, 64 (2020).
[3] S. Zerbib, K. Hilal, A. Kajouni, it Some new existence results on the hybrid fractional differential equation with variable order derivative. Results in Nonlinear Analysis 6. 1, 34-48 (2023).
[4] S. Zerbib, N. Chefnaj, K. Hilal, and A, Kajouni. it Study of p-Laplacian hybrid fractional differential equations involving the generalized Caputo proportional fractional derivative. Computational Methods for Differential Equations. (2024).
[5] J. Vanterler da C. Sousa, and E. Capelas de Oliveira, it On the $ \psi $-Hilfer fractional derivative, Commun. Nonlinear Sci. Numer. Simulat., vol. 60, pp. 72-91, 2018.

LINEAR CHAOS AND STRONG STABILITY IN THE CONFORMABLE VON FOERSTER-LASOTA EQUATION

Khadija ELKHALLOUFY
University Sultan Moulay Slimane, Beni Mellal, Morocco

Manal MENCHIH
University Sultan Moulay Slimane, Beni Mellal, Morocco

Khalid HILAL
University Sultan Moulay Slimane, Beni Mellal, Morocco

Ahmed KAJOUNI
University Sultan Moulay Slimane, Beni Mellal, Morocco

ABSTRACT
In this paper, we investigate the chaotic behavior and strong stability of the conformable Von Foerster equation of order $\alpha \in (0, 1)$. By analyzing the spectral properties of the α-infinitesimal generator, we establish the conditions for chaos in the space $L^p[0, 1]$ for constant growth rate functions, and extend these results to a non-constant growth rate function using the concept of conjugacy. We justify the use of the conformable derivative in this context and explain its relevance to modeling anomalous diffusion and dynamic systems. Additionally, we interpret the obtained conditions in biological terms, linking them to cellular growth regulation and population dynamics. Our results provide novel insights into the dynamics of structured population models and contribute to the study of chaos and stability in conformable partial differential equations.
Keywords: Chaos**,** Conformable semigroup**,**Von Foerster-Lasota equation

REFERENCES
[1] Abdeljawad, T., Al Horani, M., & Khalil, R. (2015). Conformable fractional semigroups of operators. Journal of Semigroup Theory and Applications, 2015, 1–9.
[2] Elkhalloufy, K., Menchih, M., Hilal, K., & Kajouni, A. (2025). Chaotic and hypercyclic dynamics in the solution semigroup of a spatial conformable PDE. Asian-European Journal of Mathematics, 18(08), 2550014.
[3] Grosse-Erdmann, K. G., & Manguillot, A. P. (2011). Linear Chaos. Springer, London.
[4] Khalil, R., Al Horani, M., Yousef, A., & Sababheh, M. (2014). A new definition of fractional derivative. Journal of Computational and Applied Mathematics, 264, 65–70.
[5] Menchih, M., Hilal, K., Kajouni, A., & Samei, M. (2024). Chaotic dynamics of conformable maturity-structured cell population models. Qualitative Theory of Dynamical Systems, 23, 271.

SU STRESİ KOŞULLARINDA MISIR F_3 POPULASYONUNUN BAZI MORFOLOJİK ÖZELLİKLER VE BİYOLOJİK VERİM BAKIMINDAN KARAKTERİZASYONU

CHARACTERIZATION OF SOME MORPHOLOGICAL CHARACTERISTICS AND BIOLOGICAL PERFORMANCE OF MAIZE F3 POPULATION UNDER WATER STRESS CONDITION

Ozcan Mammadov
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova – İzmir

İsmail Karakaş
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova – İzmir

Fatma Aykut Tonk
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova – İzmir

ABSTRACT
Bu çalışmada, kuraklığa hassas 17 (PI 595366) ve tolerant 21 (Clze 82) nolu kendilenmiş mısır hatlarının melezlenmesiyle elde edilen F_3 popülasyonunun su stresi koşullarında bazı morfolojik özellikler ve biyolojik verim bakımından karakterize edilmesi amaçlanmıştır.
Araştırma, Ege Üniversitesi Ziraat Fakültesi Tarla Bitkileri Bölümü deneme alanlarında 2025 yılı mısır yetiştirme sezonunda yürütülmüştür. Yüz otuz F_3 döl sırası halinde yetiştirilen bitkilere damla sulama ile sulama yapılmıştır. Bitkiler V7–V10 döneminde iken 21 gün süreyle su stresi uygulanmış ve daha sonra tekrar sulamaya devam edilmiştir. Bitkilerde antosiyanin renklenmesi, yaprak alan indeksi, tepe püskülü özellikleri, sap kalınlığı, yeşil ve kuru yaprak sayıları ve biyolojik verim incelenmiştir. Elde edilen veriler kullanılarak tanımlayıcı istatistikler, Pearson fenotipik korelasyon analizi ve fenotipik path analiziyle değerlendirilmiştir.
F_3 populasyonundaki sap kalınlığı genotip ortalamaları 16,84-30,15 mm ve yeşil yaprak sayısı genotip ortalamaları 0,00-8,00 adet aralığında değişmiştir. Yaprak alan indeksi 0,0272 m^2/m^2 ile 0,0729 m^2/m^2 arasında varyasyon göstermiştir. F_3 popülasyonunda biyolojik verim 83,47–390,45 g/bitki arasında değişmiş ve popülasyon ortalaması 209,77 g/bitki olmuştur. Path analizinde biyolojik verim üzerindeki en yüksek olumlu doğrudan etki sap kalınlığı (0,4640) ve yaprak alan indeksi (0,4250) tarafından oluşturulmuştur.
Su stresi altında yüksek biyolojik verime sahip genotiplerin seçiminde sap kalınlığı, yaprak alan indeksi ve yeşil yaprak sayısının birlikte kullanılabilecek pratik ölçütler olduğu sonucuna varılmıştır.
Anahtar kelimeler: Mısır, su stresi, F_3 populasyonu, morfolojik özellikler, biyolojik verim.

MACAR FİĞİ (*VİCİA PANNONİCA* CRANTZ) ÇEŞİTLERİNİN TOHUM YAĞ KALİTESİ: HAM YAĞ ORANI VE YAĞ ASİDİ BİLEŞİMİ

SEED OIL QUALITY OF HUNGARIAN VETCH (VICIA PANNONICA CRANTZ) CULTIVARS: CRUDE OIL CONTENT AND FATTY ACID COMPOSITION

Mehmet Fatih YILMAZ
Malatya Turgut Özal Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Malatya, Türkiye
ORCID:0000-0003-2051-6285

Mahmut KAPLAN
Erciyes Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Kayseri, Türkiye
ORCID:0000-0002-6717-4115

ÖZET

Bu çalışmada, üç Macar fiği (*Vicia pannonica* Crantz) çeşidinin (Ege Beyazı, Göksun Beyazı ve Kral Kızı) tohumlarında ham yağ oranı ile yağ asidi bileşiminin belirlenmesi amaçlanmıştır. Bu kapsamda, çeşitlere ait tohum örneklerinde ham yağ oranı ve on bir yağ asidi (butirik, miristik, miristoleik, palmitik, palmitoleik, stearik, oleik, linoleik, γ-linolenik, lignoserik ve nervonik asit) içeriği üç tekerrürlü olarak saptanmış; veriler tek yönlü varyans analizi (ANOVA) ve Tukey HSD çoklu karşılaştırma testi ile değerlendirilmiştir. İncelenen özelliklerin tamamı bakımından çeşitler arasındaki farklılıklar istatistiksel olarak çok önemli bulunmuştur ($p<0.001$). Ham yağ oranı en yüksek Göksun Beyazı çeşidinde (%2.19) belirlenmiş; Ege Beyazı (%1.70) ile Kral Kızı (%1.66) çeşitleri aynı istatistiksel grupta yer almıştır. Tüm çeşitlerde baskın yağ asidi linoleik asit olmuş, bunu oleik ve palmitik asitler izlemiştir; bu durum Macar fiği tohum yağının doymamış yağ asitlerince zengin olduğunu göstermektedir. Linoleik asit içeriği en yüksek Kral Kızı (%76.07), en düşük ise Göksun Beyazı (%57.35) çeşidinde saptanmıştır. Buna karşılık oleik ve palmitik asit içerikleri en yüksek Göksun Beyazı çeşidinde ölçülürken; γ-linolenik, lignoserik ve nervonik asit içerikleri bakımından Ege Beyazı çeşidi öne çıkmıştır. Sonuç olarak, incelenen Macar fiği çeşitleri ham yağ ve yağ asidi bileşimi yönünden belirgin farklılıklar göstermiş ve her çeşit kendine özgü bir yağ asidi profili sergilemiştir. Elde edilen bulgular, Macar fiği genetik kaynaklarının besinsel değerlendirilmesi ve tohum kalitesi ıslahı açısından değerli bir varyasyon sunduğunu ortaya koymaktadır.

Anahtar Kelimeler: Macar fiği, ham yağ, yağ asidi bileşimi, linoleik asit, çeşit Seed Oil Quality of Hungarian Vetch (*Vicia pannonica* Crantz) Cultivars: Crude Oil Content and Fatty Acid Composition

ABSTRACT

This study aimed to determine the crude oil content and fatty acid composition in the seeds of three Hungarian vetch (*Vicia pannonica* Crantz) cultivars (Ege Beyazı, Göksun Beyazı, and Kral Kızı). Within this scope, the crude oil ratio and the content of eleven fatty acids (butyric, myristic, myristoleic, palmitic, palmitoleic, stearic, oleic, linoleic, γ-linolenic, lignoceric, and nervonic acid) in the seed samples of the cultivars were determined in three replicates; the data were evaluated using one-way analysis of variance (ANOVA) and Tukey's HSD multiple comparison test.

Differences among the cultivars were found to be statistically highly significant for all investigated characteristics ($p<0.001$). The highest crude oil content was determined in the Göksun Beyazı cultivar (2.19%), while the Ege Beyazı (1.70%) and Kral Kızı (1.66%) cultivars were placed in the same statistical group.

Linoleic acid was the predominant fatty acid in all cultivars, followed by oleic and palmitic acids; this indicates that Hungarian vetch seed oil is rich in unsaturated fatty acids. The highest linoleic acid content was detected in the Kral Kızı cultivar (76.07%), whereas the lowest was found in the Göksun Beyazı cultivar (57.35%). Conversely, the highest oleic and palmitic acid contents were measured in the Göksun Beyazı cultivar, while the Ege Beyazı cultivar stood out in terms of γ-linolenic, lignoceric, and nervonic acid contents. In conclusion, the investigated Hungarian vetch cultivars exhibited distinct variations regarding crude oil and fatty acid composition, with each cultivar displaying a specific fatty acid profile. The findings demonstrate that Hungarian vetch genetic resources offer a valuable variation for nutritional evaluation and seed quality breeding.

Keywords: Hungarian vetch, crude oil, fatty acid composition, linoleic acid, cultivar

KAHRAMANMARAŞ DOĞAL FLORASINDAN TOPLANAN EŞEK GÜRÜLÜ (*VİCİA SATİVA* SUBSP. *NİGRA* (L.) EHRH.) GENOTİPLERİNİN BAZI MORFOLOJİK VE TOHUM ÖZELLİKLERİ BAKIMINDAN KARAKTERİZASYONU

CHARACTERIZATION OF NARROW-LEAVED VETCH (VICIA SATIVA SUBSP. NIGRA (L.) EHRH.) GENOTYPES COLLECTED FROM KAHRAMANMARAŞ NATURAL FLORA IN TERMS OF SOME MORPHOLOGICAL AND SEED CHARACTERISTICS

Mehmet Fatih YILMAZ
Malatya Turgut Özal Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Malatya, Türkiye
ORCID:0000-0003-2051-6285

Mahmut KAPLAN
Erciyes Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Kayseri, Türkiye
ORCID:0000-0002-6717-4115

Abdullah Yasin DALKILIÇ
Doğu Akdeniz Geçit Kuşağı Tarımsal Araştırma Enstitüsü Müdürlüğü, Kahramanmaraşi, Türkiye

ÖZET

Bu araştırmada, Kahramanmaraş doğal florasından toplanan üç Eşek gürülü (*Vicia sativa* subsp. *nigra* (L.) Ehrh.) genotipinin bazı morfolojik ve tohum özellikleri bakımından karakterizasyonu amaçlanmıştır. Çalışmada B19, B27 ve B51 genotipleri kullanılmış; bitki boyu, sap kalınlığı, yan dal sayısı, çiçek sayısı, yaprakçık boyu, yaprakçık eni, yaprakçık sayısı, çimlenme oranı, bakla boyu, bakla eni, baklada tohum sayısı ve bin tane ağırlığı incelenmiştir. Ölçüm ve gözlemler her genotipte 10 bitki üzerinden gerçekleştirilmiş elde edilen veriler ortalama, minimum, maksimum ve standart sapma değerleri kullanılarak değerlendirilmiştir.

Genotipler arasında incelenen tüm özellikler bakımından önemli düzeyde morfolojik varyasyon belirlenmiştir. B27 genotipi bitki boyu (92.20 cm), sap kalınlığı (3.46 mm), yan dal sayısı (3.60 adet), çiçek sayısı (18.30 adet), yaprakçık eni (0.91 cm), çimlenme oranı (%84), bakla boyu (6.44 cm) ve bakla eni (0.73 cm) bakımından en yüksek ortalama değerlere sahip olmuştur. B51 genotipi yaprakçık boyu (2.18 cm), yaprakçık sayısı (258.80 adet) ve bin tane ağırlığında (58.35 g) öne çıkarken, B19 genotipi baklada tohum sayısı bakımından (5.80 adet) en yüksek değeri göstermiştir. Sonuç olarak, doğal floradan toplanan Eşek gürülü genotipleri arasında önemli düzeyde morfolojik çeşitlilik bulunduğu belirlenmiştir. Özellikle B27 ve B51 genotiplerinin üstün performans gösteren özellikleri nedeniyle fiğ ıslah programlarında ebeveyn materyali olarak değerlendirilme potansiyeline sahip olduğu sonucuna varılmıştır.

Anahtar Kelimeler: *Vicia sativa* subsp. *nigra*, genetik kaynak, morfolojik karakterizasyon, doğal flora, tohum özellikleri

ABSTRACT

This study aimed to characterize three narrow-leaved vetch (*Vicia sativa* subsp. *nigra* (L.) Ehrh.) genotypes collected from the natural flora of Kahramanmaraş in terms of some morphological and seed characteristics. Genotypes B19, B27, and B51 were utilized in the study; and plant height, stem thickness, number of lateral branches, number of flowers, leaflet length, leaflet width, number of leaflets, germination rate, pod length, pod width, number of seeds per pod, and thousand-seed weight were investigated. Measurements and observations were performed on 10 plants for each genotype, and the obtained data were evaluated using mean, minimum, maximum, and standard deviation values.

A significant level of morphological variation was determined among the genotypes for all investigated characteristics. The B27 genotype exhibited the highest mean values for plant height (92.20 cm), stem thickness (3.46 mm), number of lateral branches (3.60), number of flowers (18.30), leaflet width (0.91 cm), germination rate (84%), pod length (6.44 cm), and pod width (0.73 cm). While the B51 genotype stood out in terms of leaflet length (2.18 cm), number of leaflets (258.80), and thousand-seed weight (58.35 g), the B19 genotype showed the highest value for the number of seeds per pod (5.80).

In conclusion, it was determined that there is a significant level of morphological diversity among the narrow-leaved vetch genotypes collected from the natural flora. It was concluded that particularly genotypes B27 and B51 have the potential to be evaluated as parental material in vetch breeding programs due to their superior performing characteristics.
Keywords: *Vicia sativa* subsp. *nigra*, genetic resource, morphological characterization, natural flora, seed characteristics

PAMUK F_2 POPÜLASYONLARININ TARIMSAL VE TEKNOLOJİK ÖZELLİKLERİ ÜZERİNE BİR ARAŞTIRMA

A STUDY ON THE AGRICULTURAL AND TECHNOLOGICAL CHARACTERISTICS OF COTTON F_2 POPULATIONS

Mesut Tekeli
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova, İzmir

İsmail Karakaş
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova, İzmir

Fatma Aykut Tonk
Ege Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Bornova, İzmir

ÖZET

Pamuk (*Gossypium hirsutum* L.) ıslahında, agronomik ve teknolojik özelliklerin erken generasyonlarda değerlendirilmesi, seleksiyon başarısı açısından kritik bir öneme sahiptir. Bu araştırmada, ticari çeşitler ile spesifik melez kombinasyonlarından (resiproklu) elde edilen F_2 popülasyonlarının bazı verim öğeleri ve teknolojik özelliklerinin karşılaştırmalı olarak incelenmesi amaçlanmıştır. Tarla koşullarında yürütülen denemede, materyallerin bitki boyu, açan koza sayısı, ilk meyve dalı boğum uzunluğu ve çırçır randımanı gibi temel agronomik ve teknolojik özellikleri değerlendirilmiştir. Araştırma sonuçlarına göre, bitki boyu ve meyve dalı sayısı özelliklerinde F_2 popülasyonlarının tekerrürleri arasında genetik açılmaya bağlı olarak yüksek bir varyans gözlemlenmiştir. Ayrıca ilk meyve dalı boğum uzunluğu bakımından popülasyonlar arasında belirgin farklılıklar saptanmıştır. Mx1 melezi 15.51 cm ilk meyve dalı boğum uzunluğu değeriyle geççi bir özellik gösterirken, resiproku olan 1xM melezinde bu değer 13.21 cm'ye düşerek erkencilik yönünde avantaj sağlamıştır. Teknolojik özellikler incelendiğinde ise çırçır randımanı bakımından F_2 popülasyonları ile ebeveynler arasında istatistiki düzeyde önemli farklılıklar (P=0.0272) bulunmuştur. Özellikle 1xC F_2 popülasyonu, %49.27 çırçır randımanı değeriyle ebeveyn sınırlarını aşarak transgresif açılma göstermiş ve en üst önem grubunda yer almıştır. Aynı melezin resiproku CX1 melez popülasyonunda ise %42.15 değerinde daha düşük çırçır randımanı elde edilmiştir. Resiprok melezler arasındaki bu farklar, sitoplazmik faktörlerin de bu özellikler üzerinde rol oynayabileceğine işaret etmektedir. Sonuç olarak, yüksek genotipik varyans gösteren F_2 popülasyonlarının (özellikle 1xC melezinin), yüksek randımanlı ve erkenci pamuk hatlarının geliştirilmesine yönelik ileriki seleksiyon çalışmaları için önemli bir genetik potansiyele sahip olduğu belirlenmiştir.

Anahtar kelime: pamuk, resiprok melez, F_2 populasyonu, verim ve agronomik özellikler.

ABSTRACT

In cotton (*Gossypium hirsutum* L.) breeding, evaluating agronomic and technological traits in early generations is critical for selection success. This study aimed to comparatively evaluate certain yield components and technological traits of F_2 populations derived from specific hybrid combinations (including reciprocals) with commercial varieties. In the field experiment, fundamental agronomic and technological traits of the materials, such as plant height, number of open bolls, height to the first fruiting branch, and ginning yield, were evaluated. According to the results, a high variance was observed among the replications of the F_2 populations for traits such as plant height and number of fruiting branches due to genetic segregation. Furthermore, distinct differences were determined among the populations regarding the height to the first fruiting branch. While the Mx1 hybrid exhibited a late-maturing characteristic with a height to the first fruiting branch of 15.51 cm, this value decreased to 13.21 cm in its reciprocal hybrid, 1xM, providing an advantage in terms of early maturity.

When technological traits were examined, statistically significant differences (P=0.0272) were found between the F_2 populations and the parents in terms of ginning yield. In particular, the 1xC F_2 population exceeded the parental limits with a ginning yield of 49.27%, exhibiting transgressive segregation and placing it in the highest significance group. In the reciprocal cross of the same hybrid, the CX1 population, a lower ginning yield of 42.15% was obtained.

These differences between the reciprocal hybrids indicate that cytoplasmic factors may also play a role in these traits. In conclusion, it was determined that F_2 populations exhibiting high genotypic variance (especially the 1xC hybrid) have significant genetic potential for future selection studies aimed at developing high-yielding and early-maturing cotton lines.

Keywords: cotton, reciprocal hybrid, F_2 population, yield and agronomic characteristics.

T.C.
ÇANKIRI KARATEKİN ÜNİVERSİTESİ REKTÖRLÜĞÜ
Turizm Fakültesi

2025 AİLE YILI

Sayı : E-97371053-903.07-2600026541 25.03.2026
Konu : Doç. Dr. Ayhan DAĞDEVİREN' İn Görevlendirilmesi

Sayın Doç. Dr. Ayhan DAĞDEVİREN

Fakültemiz Turizm İşletmeciliği Bölüm Başkanı Doç. Dr. Ayhan DAĞDEVİREN' in Baltık ülkeleri & Finlandiya' da 01-07 Temmuz 2026 tarihleri arasında yapılacak olan 11. Ispec uluslararası modern bilimsel araştırmalar kongresine görevlendirilmesi talebi, Fakültemiz Yönetim Kurulunun 24.03.2026 tarih ve 2026/9 sayılı kararı ile uygun görülmüş olup Fakülte Yönetim Kurulu Kararı ekte sunulmuştur.

Bilgilerinizi ve gereğini rica ederim.

Prof. Dr. İsmail ERDOĞAN
Dekan V.

Adres: Gazi Dede Mh. Garaj Sk. No:13 Ilgaz/ÇANKIRI
Telefon No: Faks No:
e-Posta: ilgazturizm@karatekin.edu.tr İnternet Adresi:
Kep Adresi: cnu@hs01.kep.tr

Bilgi için : Hüseyin ATABEY
Bilgisayar İşletmeni
Telefon No: (0 501) 4161700 - 5716
Direkt Hat: