

**IX.INTERNATIONAL HALICH CONGRESS ON
MULTIDISCIPLINARY SCIENTIFIC RESEARCH**

December 3-4, 2025, ISTANBUL

THE BOOK OF ABSTRACTS



**Edited by
Assoc. Prof. Mourad DERRA
Gulnaz GAFUROVA**

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**9th INTERNATIONAL HALICH CONGRESS ON
MULTIDISCIPLINARY SCIENTIFIC RESEARCH
December 3-4, 2025 / Istanbul**

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Gulnaz GAFUROVA**

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CONGRESS ID
**9th INTERNATIONAL HALICH CONGRESS ON
MULTIDISCIPLINARY SCIENTIFIC RESEARCH**

DATE AND PLACE
December 3-4, 2025 / Istanbul, Türkiye

CONGRESS CHAIR
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Malaysia, Italy, Iraq, Lebanon, Vietnam

TOTAL NUMBER OF PAPERS 385

THE NUMBER OF PAPERS FROM TÜRKİYE 186

OTHER COUNTRIES 199

NUMBER OF REJECTED PAPERS 25

EVALUATION PROCESS
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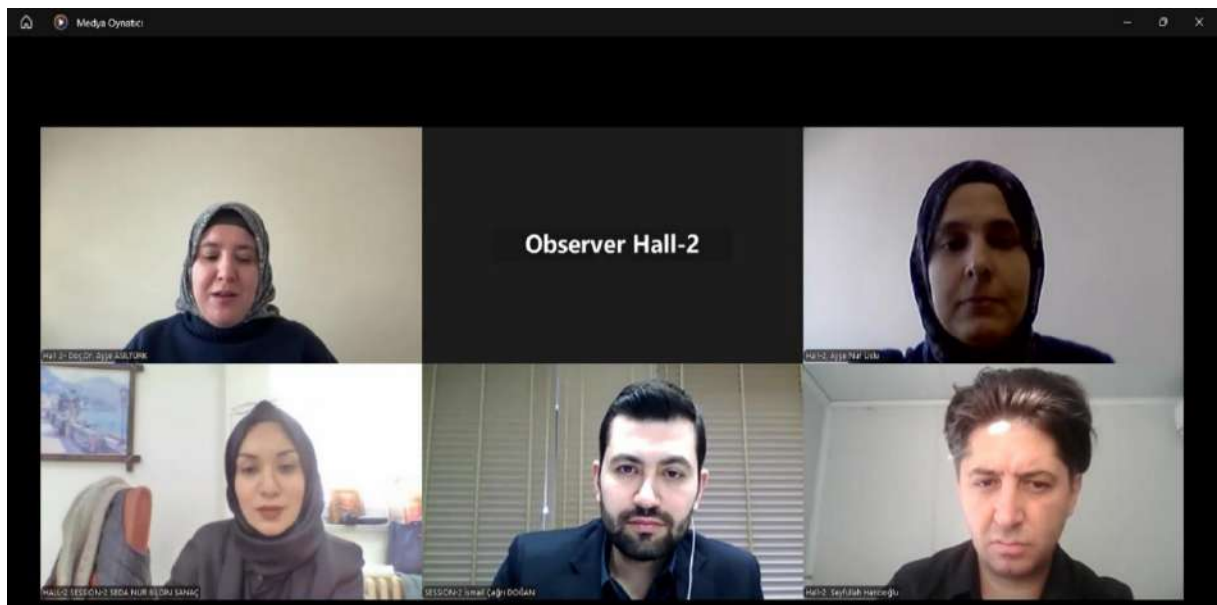


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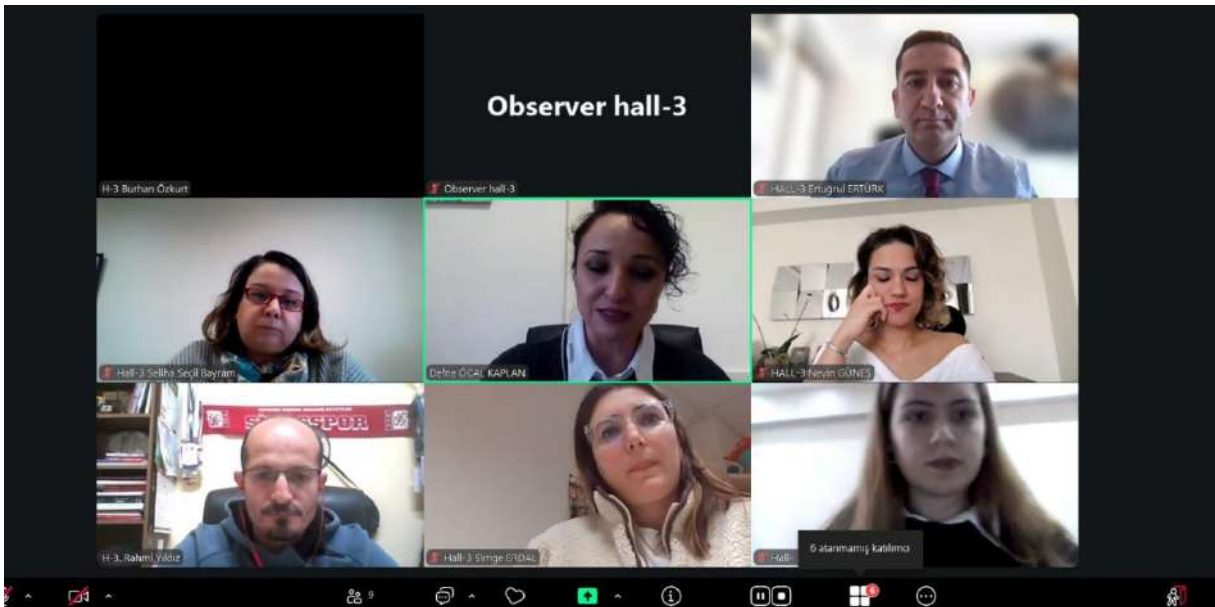


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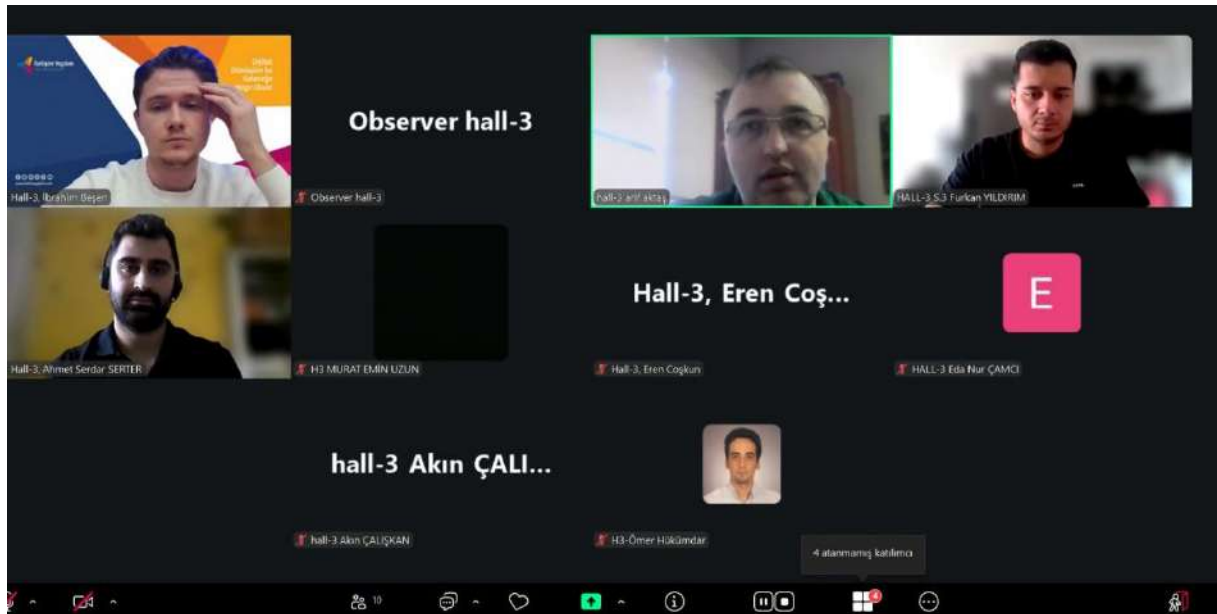


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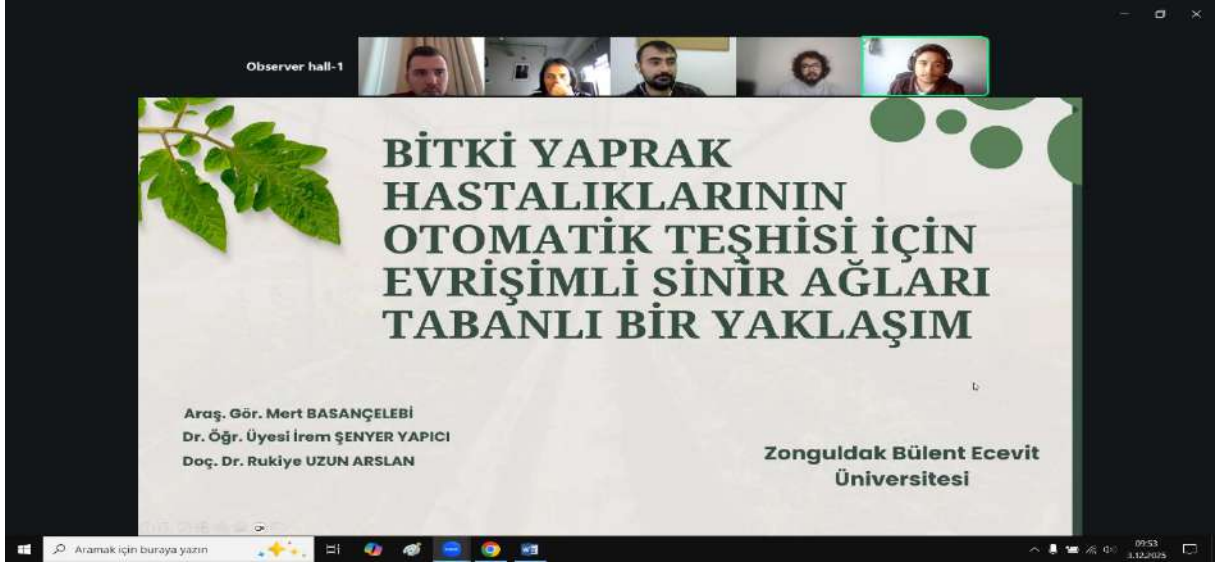


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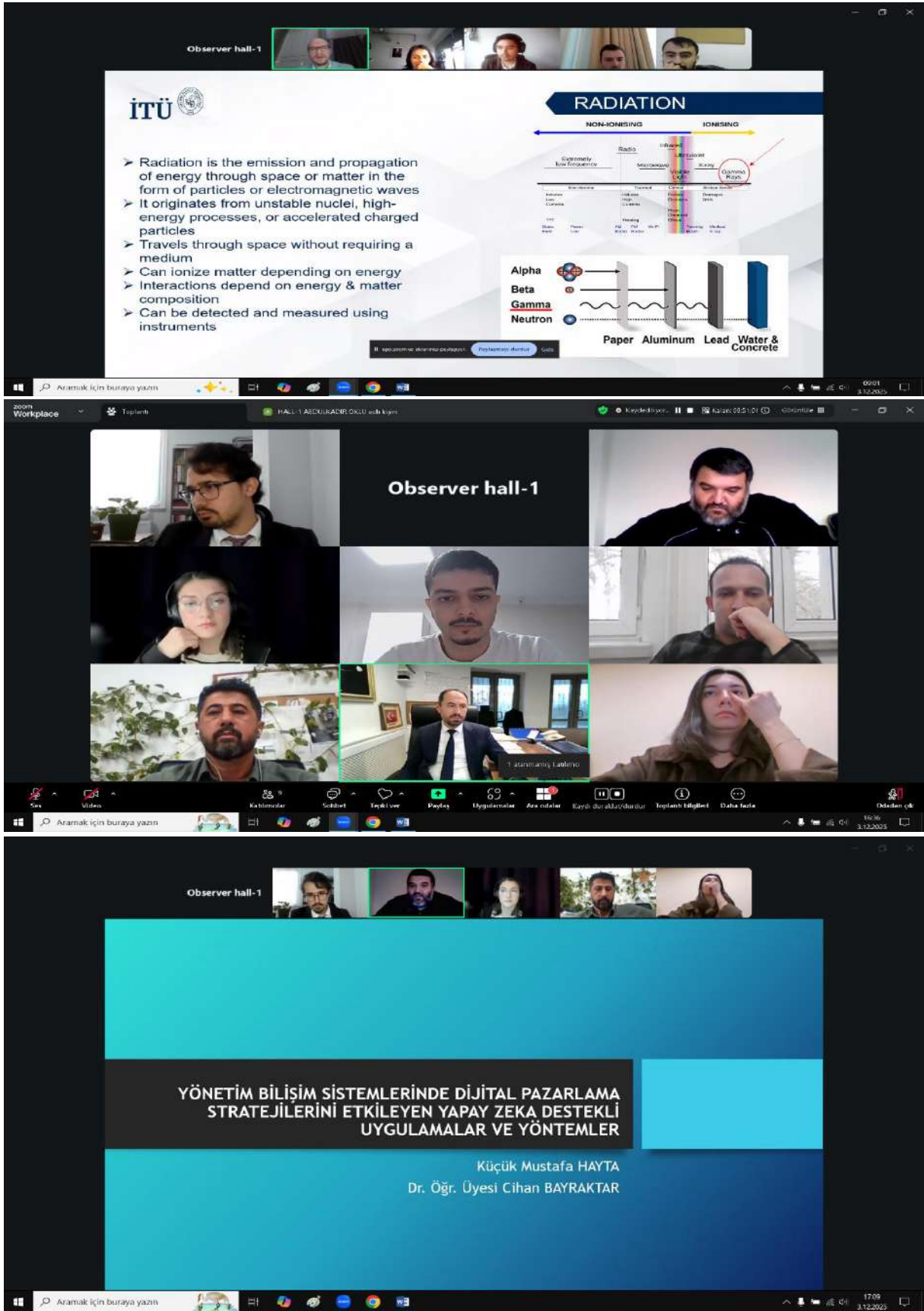


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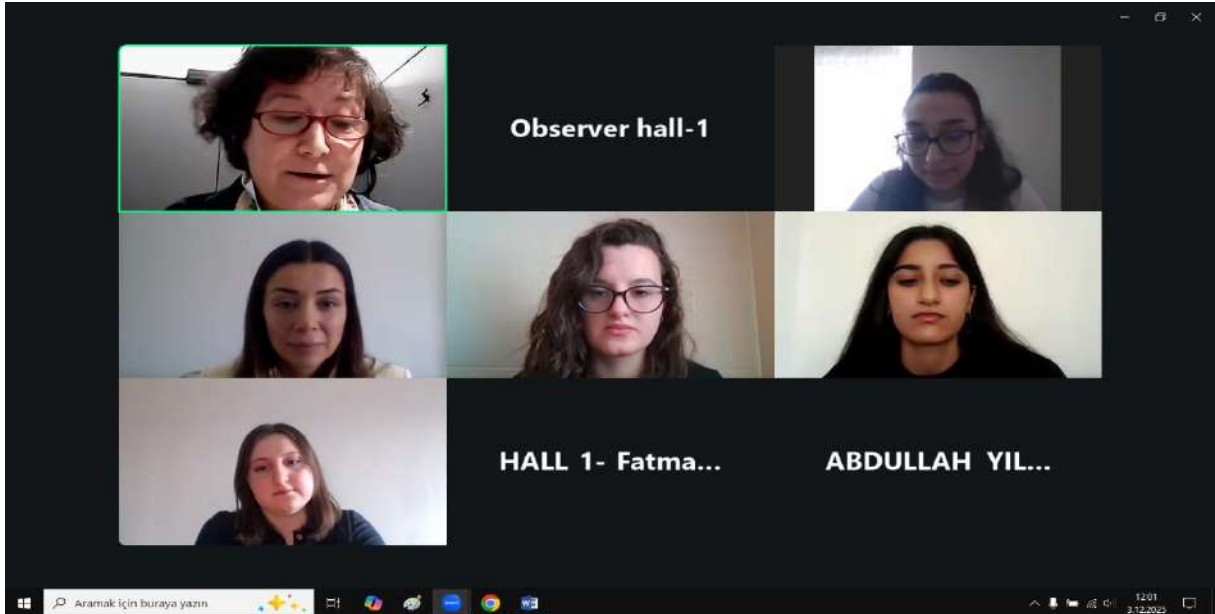
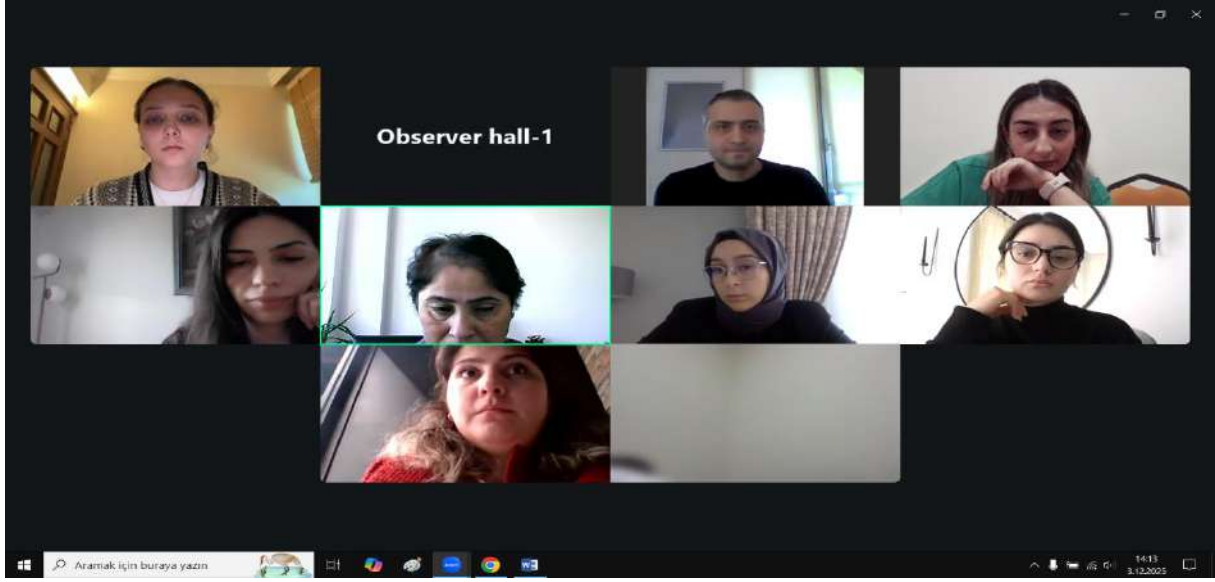


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Observer hall-1

 **9th INTERNATIONAL HALICH CONGRESS ON
MULTIDISCIPLINARY SCIENTIFIC RESEARCH**
3-4 ARALIK 2025

**Restorasyon Amaçlı Hidrolik Kireç ve Kiremit Tozu Esaslı Roma
Harçlarında Keçi Kılı Katkısının Yapısal Davranışa Etkisi**

**The Effect of Goat Hair Addition on Structural Behavior in Hydraulic
Lime and Tile Dust Based Roman Mortars for Restoration Purposes**

Dr. Öğr. Üyesi Leyla KADERLİ¹, Doç. Dr. Ali İhsan ÇELİK², Hanife BÖYÜKÇEKİÇ¹,
Sena KIRMIZITAŞ¹, Reyhan Meltem DEMİRTAŞ¹, Abdullah YILDIZ¹

¹Erciyes Üniversitesi, Mimarlık Fakültesi, Mimarlık Anabilim Dalı, Kayseri, 38039, Türkiye
²Kayseri Üniversitesi, Tomarza Mustafa Akıncıoğlu Meslek Yüksekokulu, İnşaat Bölümü, Kayseri, 38940, Türkiye

Observer Hall-4

Rihab Bamaarouf

A B M Ashraful

Observer Hall-4

derra mourad

AIT MESSAASD...

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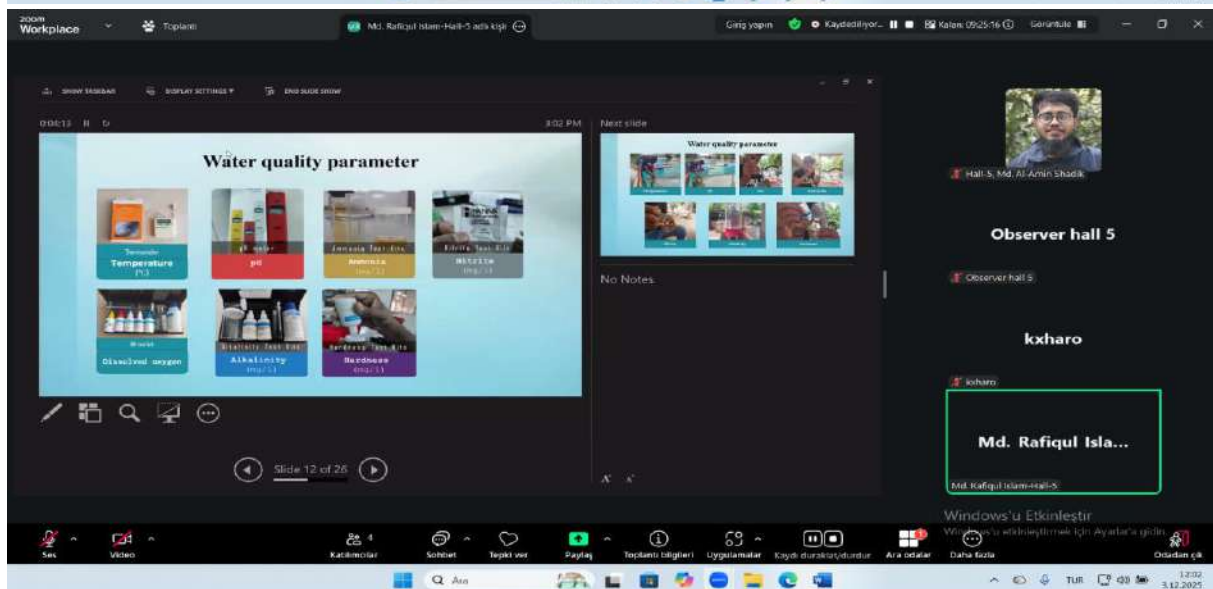
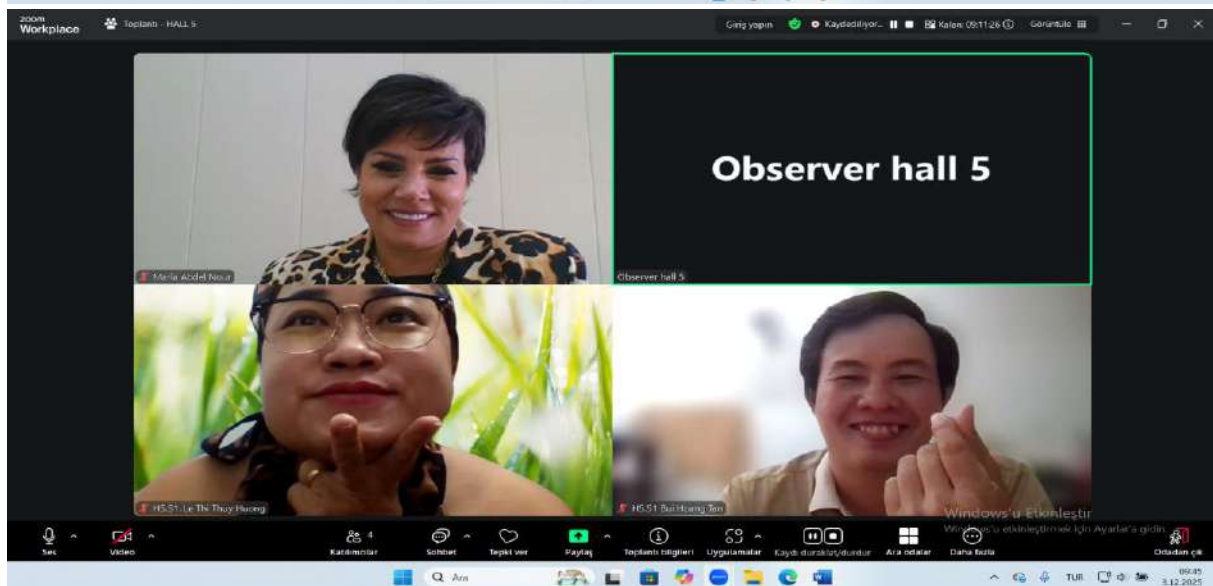


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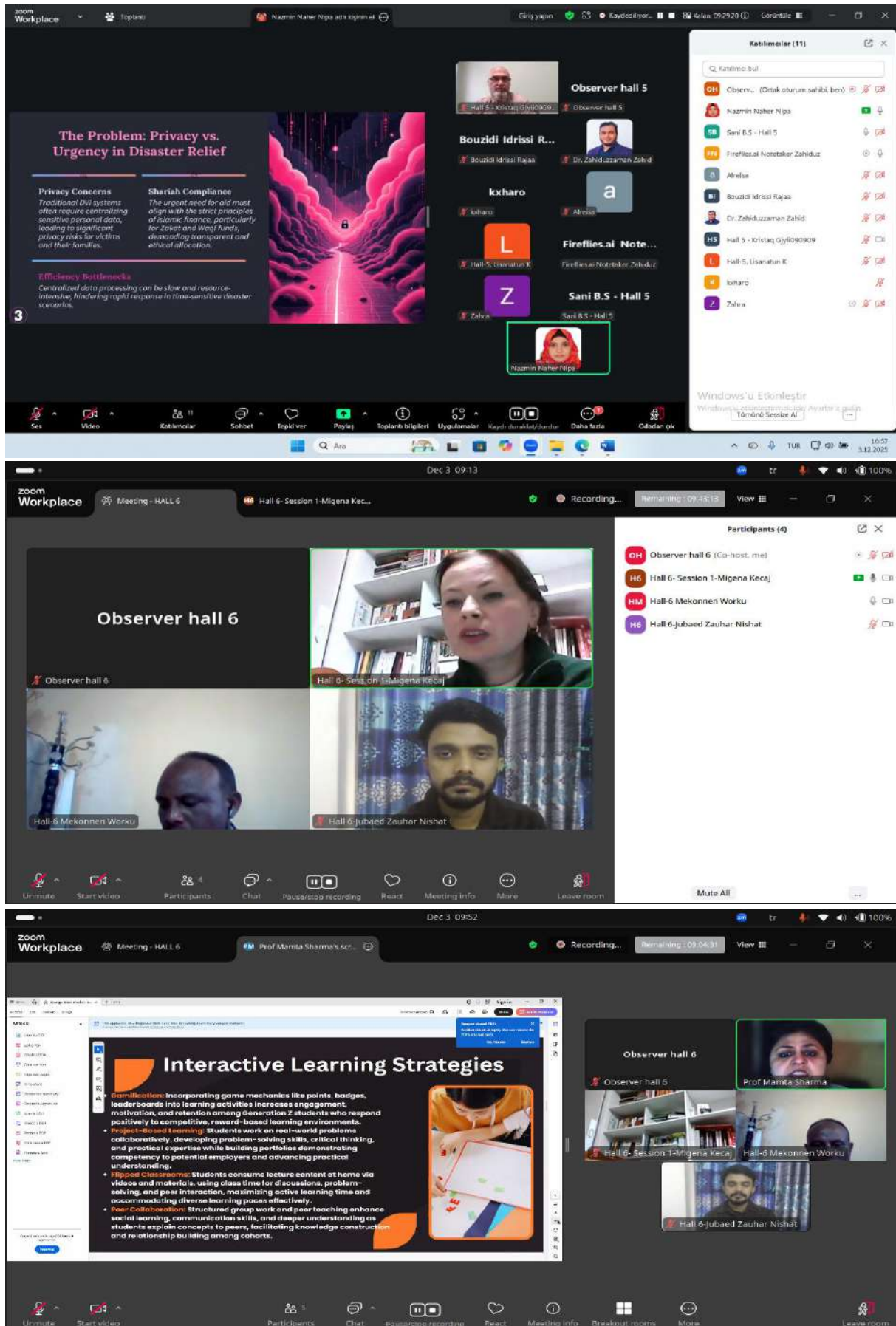


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Dec 3 11:31

zoom Workplace Meeting - HALL 6 Hall 6 - Emmanuel Ikegwu... Recording... Remaining: 09:58:25 View

Statistical Assessment of Awareness, Attitude towards and Practices Promoting Mental Health among Tertiary Institutions Students in Lagos Nigeria

By
Ikegwu, Emmanuel M.; Okorafor, Uneke; Obidiegwu, Samuel O. Ajayi, Ruth O

Department of Statistics, Yaba College of Technology, Yaba Lagos, Nigeria
Presented at the **9th International Halich Congress on Multidisciplinary Scientific Research at Istanbul**
December 3 – 4, 2025

Observer hall 6

Hall 6 - Emmanuel Ikegwu

Hall 6 - Tarif Hosen

Prof - Dr IMAD Alattabe

Hall 6 - Egle Morkuniene

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Dec 3 11:56

zoom Workplace Meeting - HALL 6 Recording... Remaining: 09:31:29 View

Observer hall 6

Observer hall 6

Hall 6 - Tarif Hosen

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Prof - Dr IMAD Alattabe

Hall 6 - Egle Morkuniene

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Observer hall 6

Observer hall 6

Gazment Koduzi

Hall 6 - Nadour Senae

Hall 6 - Suraya Sanjana Hogue

Hall 6 - Tayub Bin Shahajahan

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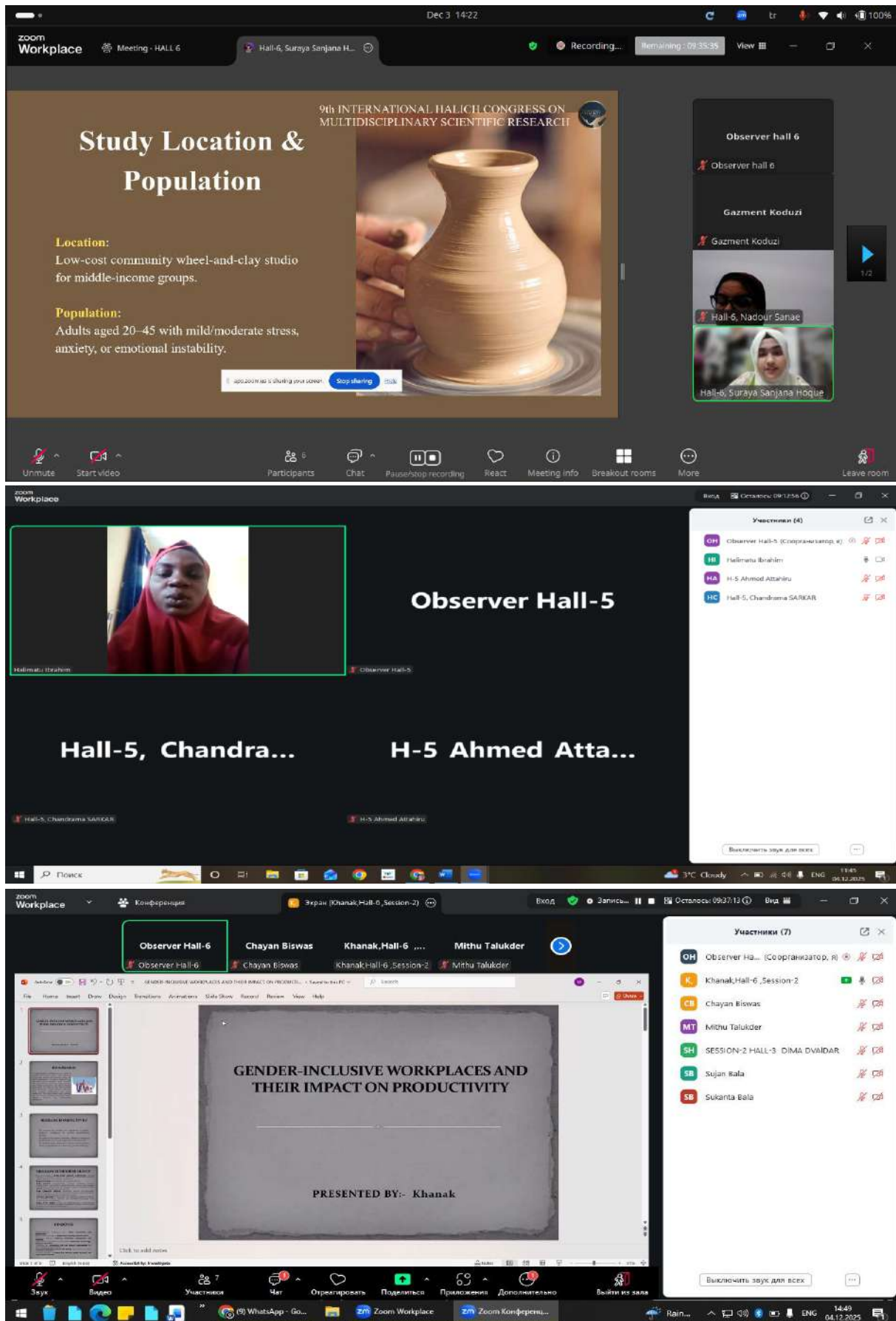


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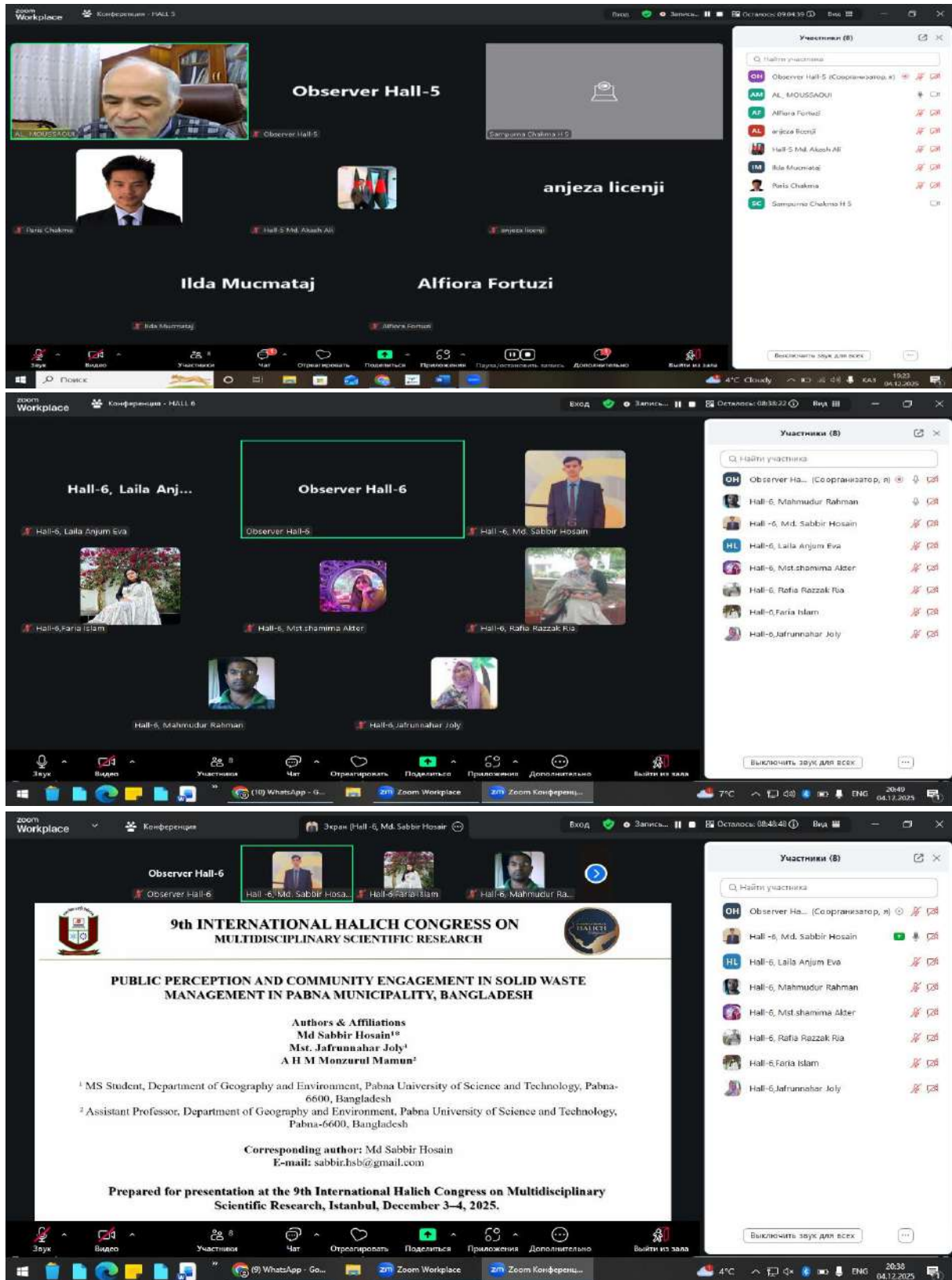


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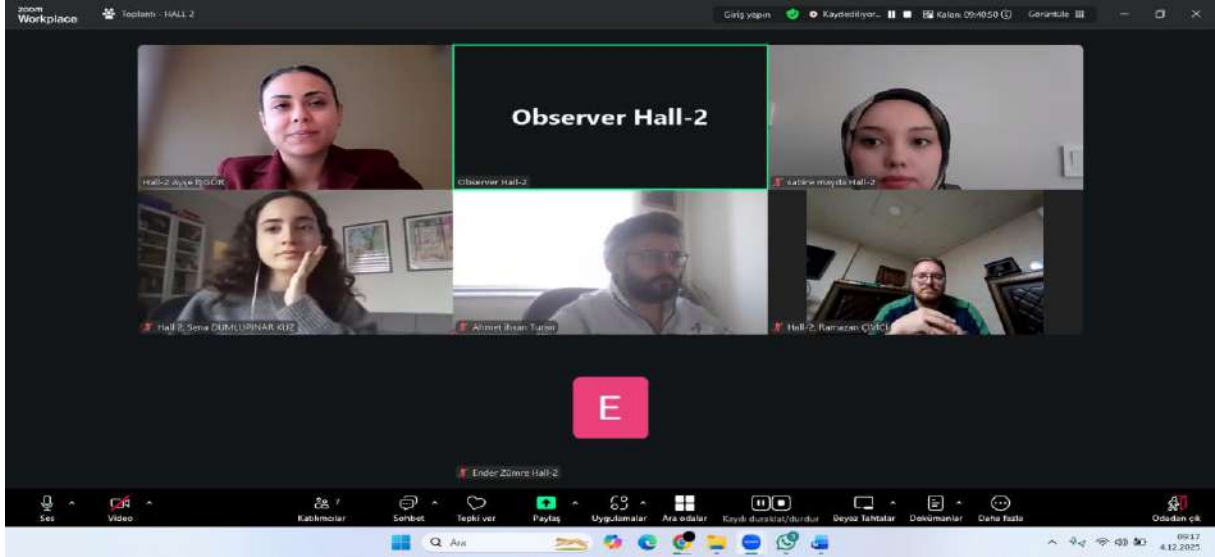


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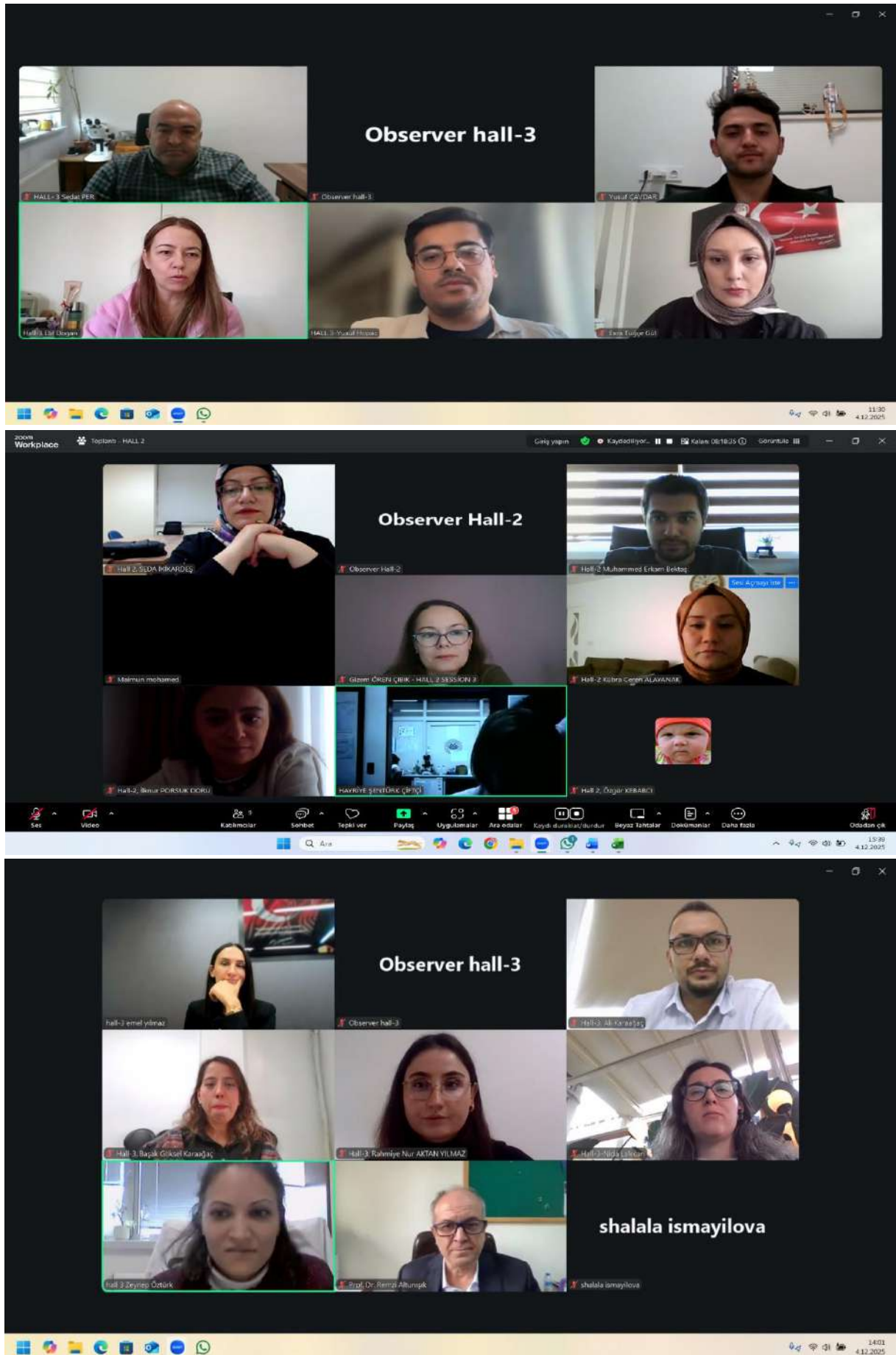


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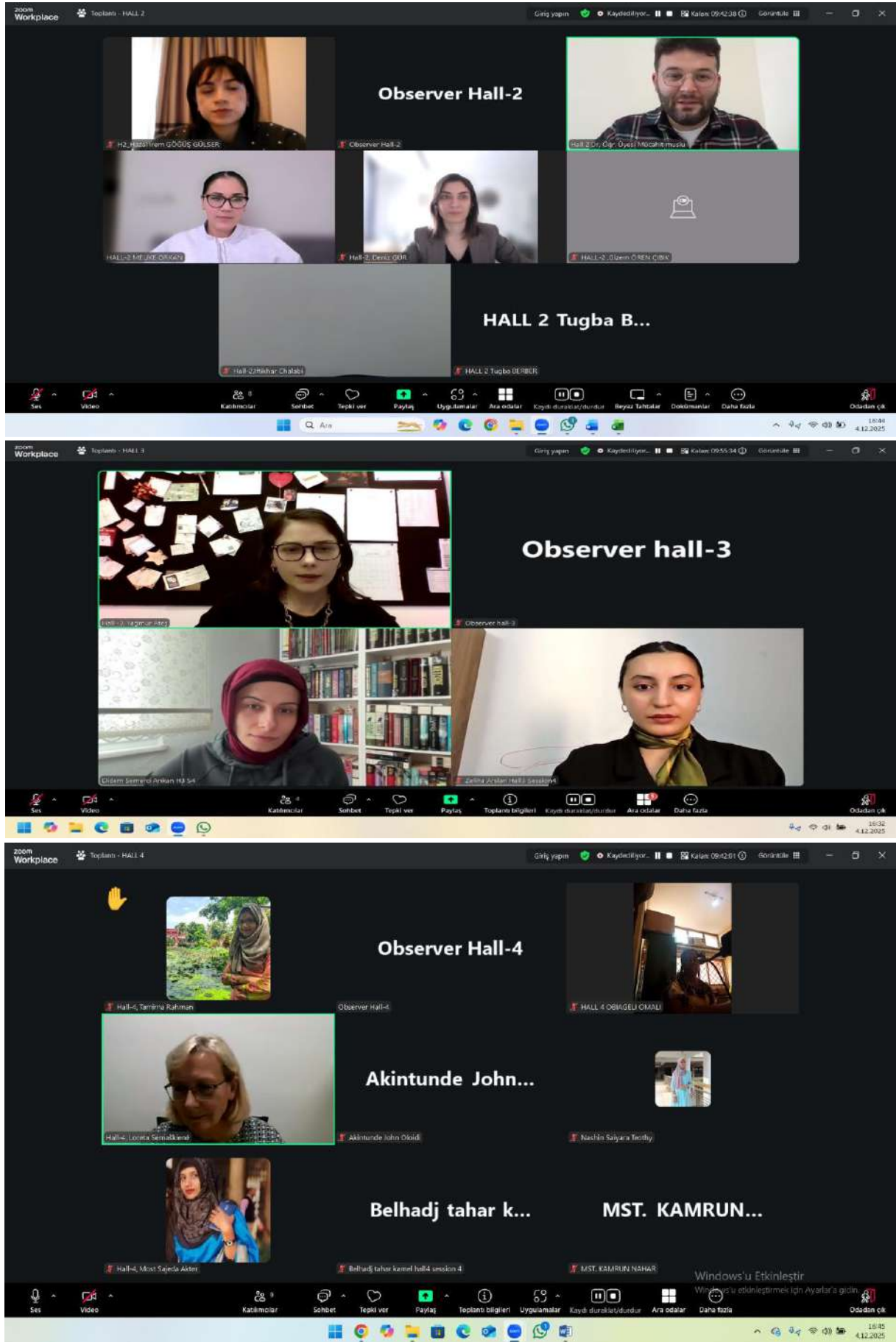


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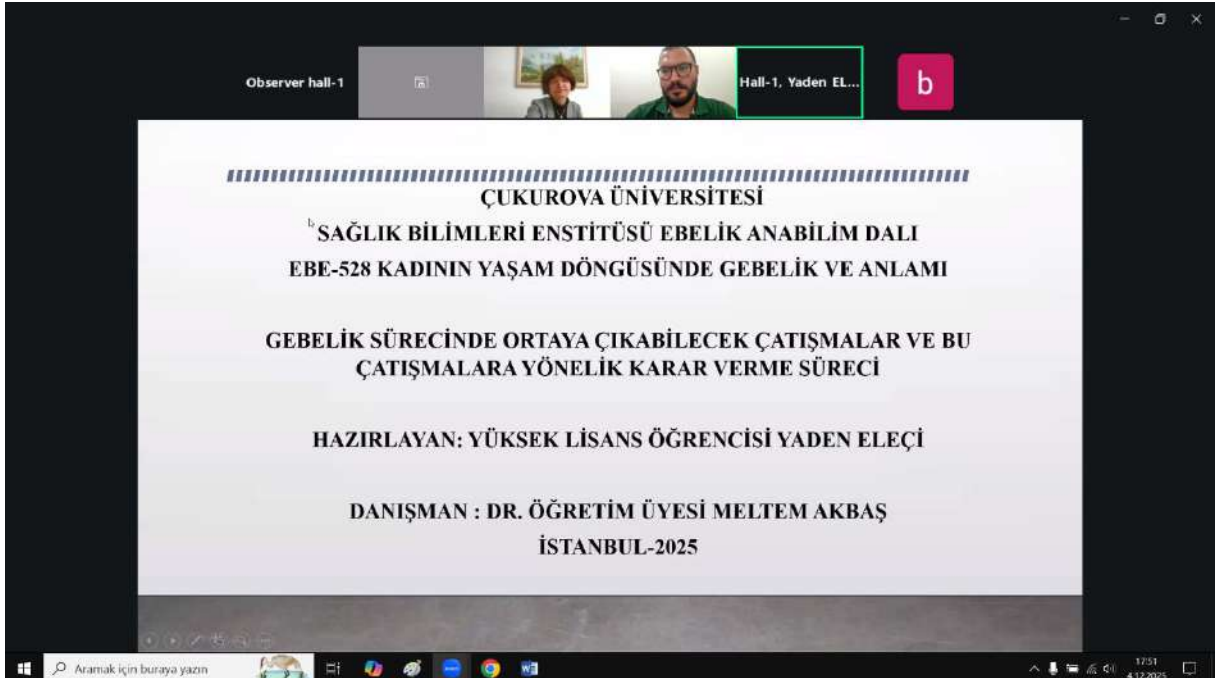
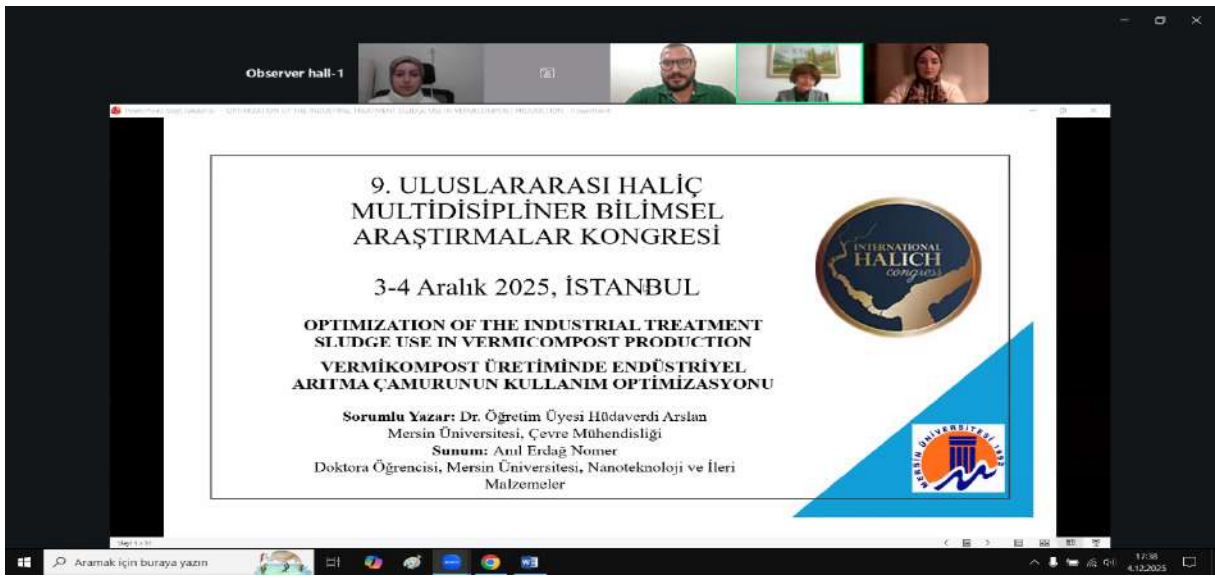
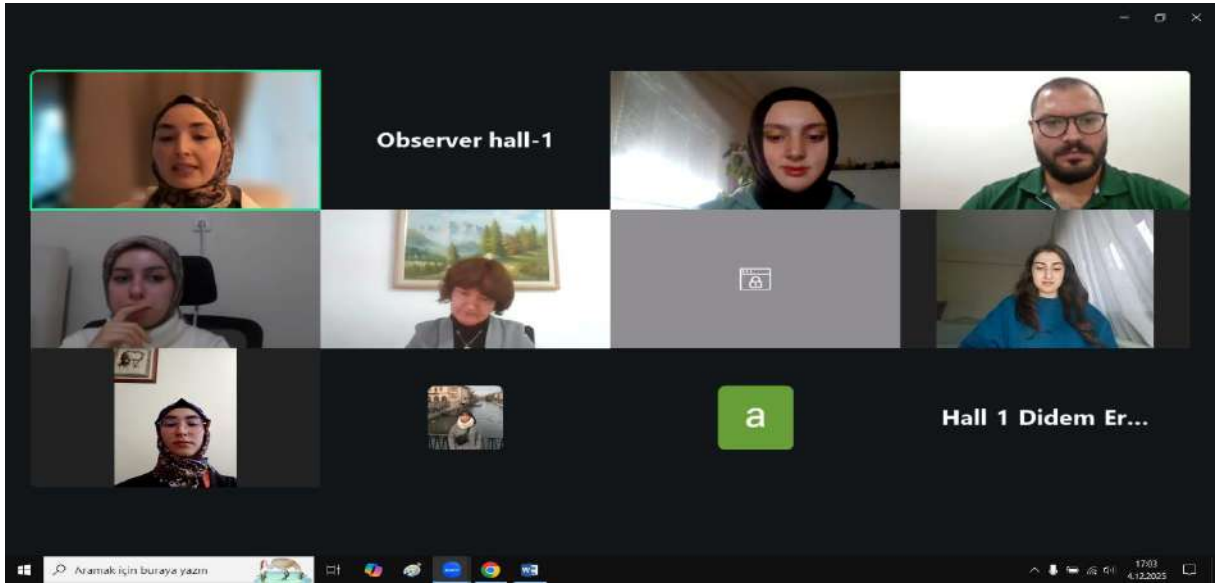


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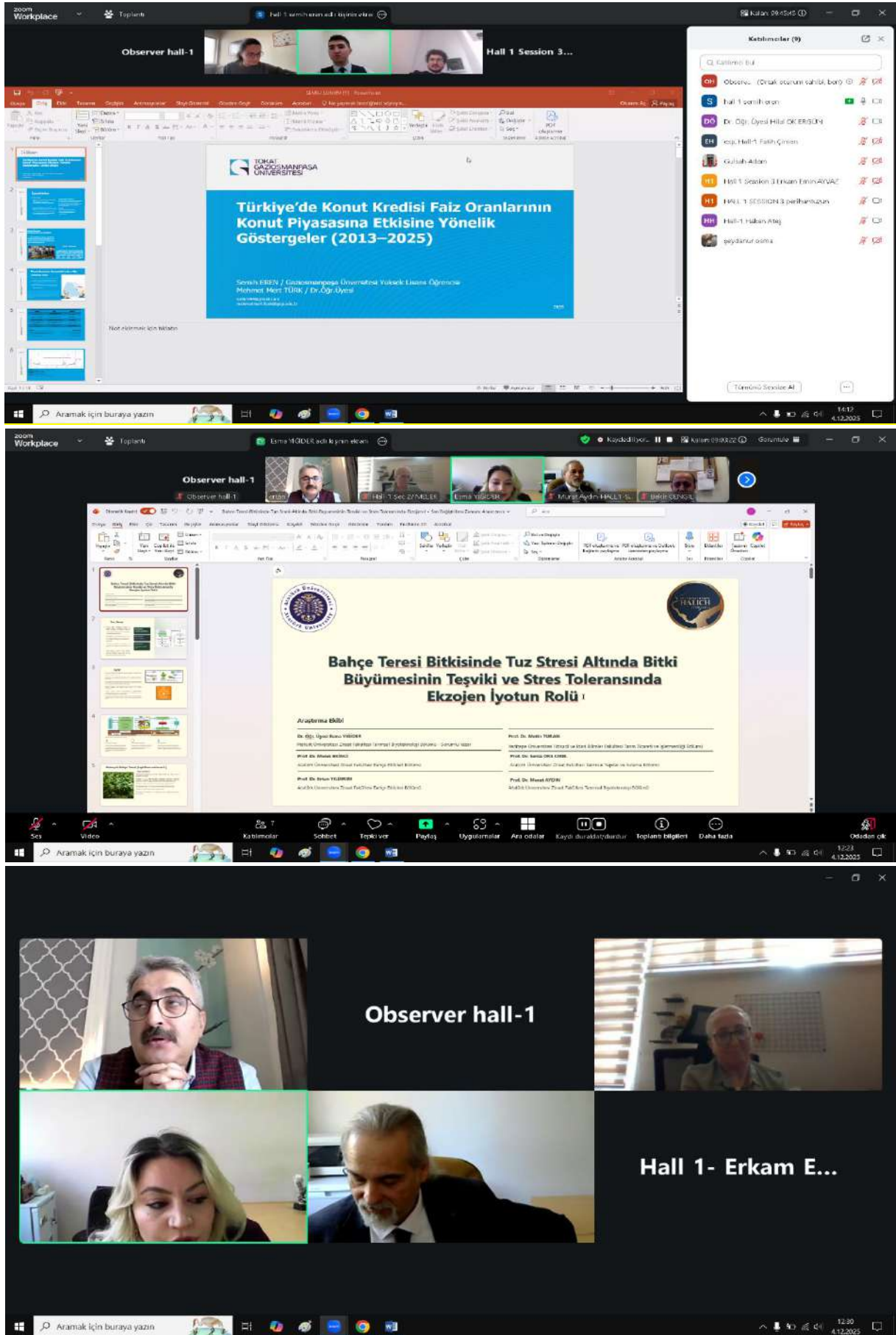


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Observer hall-1

Hall 1- Erkam E...

 **TUZ STRESİ ALTINDAKİ *Lepidium sativum*'da İYOT TARAFINDAN FİTOHORMON VE MİNERAL PROFİLİNİN YENİDEN DÜZENLENMESİ** 

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Dr. Öğr. Üyesi, Atatürk Üniversitesi Ziraat Fakültesi Tarımsal Biyoteknoloji Bölümü, esma.yigider@atauni.edu.tr

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Ertan YILDIRIM
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Observer hall-1

ASPIR (*Carthamus tinctorius* L.) TARIMINDA KARŞILAŞILAN BAŞLICA ENTOMOLOJİK ZARARLILAR

Özet

- Aspir bitkisi, içerdiği yüksek oranda linoleik asit ve kaliteli bitkisel yağ nedeniyle gıda, kozmetik ve ilaç sanayisinde önemli bir yere sahiptir.
- Yağı yemeklik olarak kullanılırken, küspe formu hayvancılıkta değerlendirilir; ayrıca boya, biyodizel ve endüstriyel yağ üretiminde de tercih edilmektedir.
- Kurak ve yarı kurak bölgelerde yetiştirilebilmesi, düşük bakım isteği ve alternatif ürün potansiyeli sayesinde ekonomik önemi giderek artmaktadır.
- Ancak üretim sürecinde aspir bitkisi çeşitli entomolojik zararlılarla karşı karşıya kalmakta ve bu türler bitkinin büyümesini, gelişimini ve verimini olumsuz etkileyebilmektedir.



9th INTERNATIONAL HALICH CONGRESS ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH

December 03-04, 2025 / Istanbul

CONGRESS PROGRAM

In-Person Presentations

VENUE: SORISSO HOTEL İSTANBUL (Kemal Paşa, Ordu Cd. No:60, 34134 Fatih/İstanbul)
Aksaray Tramvay İstasyonu'na 100m mesafededir

KONGRE KURALLARI

- ✓ Program bilimsel DİSİPLİNLER gözetilerek hazırlanmıştır. Lütfen programı dikkatlice kontrol ediniz. Programda çalışmanıza ilişkin eksiklik/hata olduğunu düşünüyorsanız en geç 2 Aralık tarihine kadar istanbulconferences@gmail.com adresi ile iletişime geçiniz. Programın yoğunluğu sebebiyle saat değişikliği taleplerinin karşılanamayacağını özellikle belirtmek isteriz.
- ✓ Her bir sunum için ayrılan süre 10 dk'dır. Bu sebeple sunumlarınızda temel kitabi bilgiler ve tanımları açıklamaktan kaçınarak yaptığınız çalışmanın özüne değininiz.
- ✓ Oturumun başlatılması, sunum sıralamasının belirlenmesi, soru cevap alınması, ara verilmesi oturumun kapatılması ve oturuma ilişkin tüm hususlarda Kongre Tüzel Kişiliği'ni temsilen **Oturum Başkanları TAM YETKİLİDİR**
- ✓ Katılım belgeleri, oturum sonunda Oturum Başkanları tarafından teslim edilecektir
- ✓ Kongre özet ve tam metin kitapları, kongre takviminde belirtilen süre içerisinde yayınlanacaktır. Kongreyle ilgili her konuda düzenleme ve yürütme kurulu üyelerimiz ile koordinatörlerimizin sizlere hizmet etmekten kıvanç duyacağını ayrıca belirtmek isterim.
- ✓ Çok değerli çalışmanızla kongremize katılarak katkıda bulunduğunuz için yürekten teşekkür ederim.

Düzenleme Kurulu Başkanı

	DATE • 04.12.2025		TIME • 09³⁰ – 11⁰⁰ • Turkiye Time		SESSION • SESSION-1

HEAD OF SESSION: Assoc. Prof. Dr. Mehmet ULUCAN		
Assoc. Prof. Dr. Mehmet ULUCAN Emel ÖZDEMİR	Fırat University	ASCEPTIC CONCEPTS IN THE EDIRNELİ KAMİ DIVAN AND THEIR EVALUATION
Rima ABDUALIYEVA	Zhetysu University named after I. Zhansugurov	WOLFRAM ALPHA IN THE AGE OF ARTIFICIAL INTELLIGENCE
MUKHASHEVA Meruert Bauyrzhanovna	Zhetysu University named after I. Zhansugurov	MODERN RESEARCH ON THE USE OF ROBOTICS IN INCLUSIVE EDUCATION: ANALYSIS OF SCIENTIFIC SOURCES
Büşranur YALÇIN	Murat Hudavendigar Anatolian Imam Hatip High School	TRACES OF WESTERNIZATION IN EVERYDAY LIFE IN ISTANBUL DURING THE CRIMEAN WAR
Dr. Gülsüm MEÇO	İstanbul 29 Mayıs University	TECHNOLOGY INTEGRATION IN TEACHING ARABIC AS A SECOND LANGUAGE WITH THE AUTIM MODEL: SCENARIO DESIGNS BASED ON MULTIPLE DIGITAL TOOLS

	DATE	• 04.12.2025		TIME	• 11⁰⁰–12³⁰ • Turkiye Time		SESSION	• SESSION-2

HEAD OF SESSION:

Arif Kaan UĞUŞ Asst. Prof. Dr. Mehmet Taciddin AKÇAY	Haliç University	ARTIFICIAL INTELLIGENCE-ENHANCED RELAY SYSTEMS FOR DYNAMIC PROTECTION OF THREE PHASE INDUCTION MOTORS
Barış ÖZDEMİR Asst. Prof. Dr. Mehmet Taciddin AKÇAY	Haliç University	A RISK-BASED APPROACH TO REDUCING LLM HALLUCINATIONS IN CYBERSECURITY: THE LLM- HRM FRAMEWORK
Mesut SANİ Umut COŞGUN Assoc. Prof. Dr. Ahmet FEYZİOĞLU	Kor Metal A.S. Marmara University	DEVELOPMENT OF A DEBURRING FIXTURE FOR THE PRODUCTION OF DRUM SUPPORT COMPONENTS MANUFACTURED ON HIGH- PRESSURE DIE CASTING MACHINES
Res. Asst. Bilge Nur GUNES Hande AYDIN DEMİRCİ Prof. Dr. Huseyin Selcuk KİLİC	Marmara University	IDENTIFICATION AND PRIORITIZATION OF SPAM CALL FACTORS USING FUZZY ANALYTIC HIERARCHY PROCESS (FAHP)
Batuhan GÖÇEN	Korkmaz Kitchenware Industry and Trade Inc.	A STUDY ON DRIPPING ISSUES in HOUSEHOLD BEVERAGE BREWING and PREPARATION TOOLS

	DATE	• 04.12.2025		TIME	• 12³⁰–14⁰⁰ • Türkiye Time		SESSION	• SESSION-3

HEAD OF SESSION: Asst. Prof. Dr. Mahmut TUĞLUER

Rumeysa GÖRENTAŞ CANIŞ Assoc. Prof. Dr. Hale DEMİR KAYAN	Dicle University	DEVELOPMENT OF OFFICE BUILDINGS IN THE URBAN MORPHOLOGY OF VAN PROVINCE: A STUDY OF CONSTRUCTION PERIODS
Hatice BAL Assoc. Prof. Dr. Hale DEMİR KAYAN	Dicle University	FROM TRADITIONAL RITUAL TO URBAN SPACE: THE RESHAPING OF CONDOLENCE (TAZIYE) CULTURE IN DIYARBAKIR
Elif ÇOBAN Prof. Dr. Fatma Ayçim TÜRER BAŞKAYA	İstanbul Technical University	COASTAL LAW AND PLANNING DYNAMICS IN HALIÇPORT: AN EIA-BASED EVALUATION
Fatma Özsel ÖZCAN Asst. Prof. Dr. Mahmut TUĞLUER	Haliç University Kahramanmaraş Sutcu Imam University	EFFECTS OF PLANT SELECTION IN EDIBLE LANDSCAPES ON HEALTHY NUTRITION AND SUSTAINABILITY
Asst. Prof. Dr. Mahmut TUĞLUER Fatma Özsel ÖZCAN	Kahramanmaraş Sutcu Imam University Haliç University	EVALUATION OF EDIBLE LANDSCAPES IN URBAN AREAS IN TERMS OF FOOD SAFETY

	DATE	• 04.12.2025		TIME	• 14⁰⁰–15³⁰ • Turkiye Time		SESSION	• SESSION-4

HEAD OF SESSION: Asst. Prof. Dr. Mehmet Ali SALIK

Nazlı Meltem KÜNİ	Istanbul Nişantaşı University	HEALTH EFFECTS OF GREEN TEA
Kübra TAŞ	Istanbul Nişantaşı University	THE EFFECT OF MATCHA TEA ON HEALTH
Asst. Prof. Dr. Mehmet Ali SALIK Ümit SALIK Songül GÜLER	Bingöl University Besiktas Anatolian High School	THE CITY WHERE CULTURE, ART, AND FLAVOR MEET – ERZİNCAN: GEOGRAPHICAL INDICATION REGISTERED PRODUCTS
Asst. Prof. Dr. Mehmet Ali SALIK	Bingöl University	THE BLACK PEARL OF ERZİNCAN: A REVIEW ON THE QUALITY CHARACTERISTICS AND BIOACTIVITY OF THE GEOGRAPHICALLY INDICATED “CİMİN ÜZÜMÜ (GRAPE)”
Assist. Prof. Dr. Derya ÇETİNTÜRK Postdoctoral Researcher Emre BARLAS Prof. Dr. Nuri YİĞİT	Ankara University	PROVIDING THE MITOGENOME CHARACTERISTICS OF MYOTIS DAUBENTONII (KUHL 1817) (DAUBENTON'S BAT)

	DATE	• 04.12.2025		TIME	• 15³⁰–17⁰⁰ • Türkiye Time		SESSION	• SESSION-5

HEAD OF SESSION: Asst. Prof. Dr. Yunus ADIGÜZEL

Asst. Prof. Dr. Yunus ADIGÜZEL	İstanbul 29 Mayıs University	THE RELATIONSHIP BETWEEN PERCEIVED ORGANIZATIONAL SUPPORT AND PSYCHOLOGICAL SAFETY IN HEALTHCARE INSTITUTIONS: A LITERATURE-BASED EVALUATION
Res. Asst. Sümeyra SEZER KAPLAN Prof. Dr. Canan HAMURKAROĞLU Asst. Prof. Dr. Nazan DANACIOĞLU	Karabük University Sinop University	EXAMINING THE RELATIONSHIPS BETWEEN CURIOSITY, MATHEMATICS SELF-EFFICACY, SOCIOECONOMIC STATUS, AND MATHEMATICS ACHIEVEMENT USING STRUCTURAL EQUATION MODELING BASED ON PISA 2022 DATA
Zeynep GÜRBÜZ Prof. Dr. Selçuk KOÇ	Kocaeli University	EXPECTATIONS OF WAGE INEQUALITY BETWEEN MEN AND WOMEN: THE KOCAELI UNIVERSITY STUDENTS SAMPLE
Okan SEMİZ Prof. Dr. Selçuk KOÇ	Kocaeli University	AN ANALYSIS OF POVERTY AMONG UNIVERSITY STUDENTS THROUGH INCOME AND EXPENDITURE LEVELS: THE CASE OF KOCAELI UNIVERSITY
Naciye Solmaz KEŞİKÇİ Asst. Prof. Dr. Şermin ATAĞ ÇOBANOĞLU	Çanakkale Onsekiz Mart University	DIGITAL TWIN CITY APPLICATIONS FROM A SUSTAINABILITY PERSPECTIVE
Lec. Gizem ÇELEBİ Asst. Prof. Dr. Halime SUVAY EKER	İstanbul Okan University	DIGITAL INEQUALITY IN TURKEY FROM A GENDER PERSPECTIVE: THE IMPACT OF EDUCATION, INCOME, AND EMPLOYMENT



9th INTERNATIONAL HALICH CONGRESS ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH

December 3-4, 2025 / Istanbul

CONGRESS PROGRAM

Online and Face-to-face Participation

Meeting ID: 848 5448 4368

Passcode: 090909

<https://us02web.zoom.us/j/84854484368?pwd=wMotAXTV9hPAbbpcV3tbQ4fp3Z6K0m.1>

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	DATE	• 03.12.2025		TIME	• 09⁰⁰–11⁰⁰ • Turkiye Time		SESSION	• HALL-1 • SESSION-1

HEAD OF SESSION: Assoc. Prof. Dr. Rukiye UZUN ARSLAN

Burak ORUÇ Deniz Agehan KAHRAMAN Erdi ŞİRİN Assoc. Prof. Ayşe Nur ESEN Assoc. Prof. Esra UYAR	Istanbul Technical University Gazi University	DETERMINATION OF SELF-ATTENUATION CORRECTION FACTORS IN GAMMA SPECTROMETRY FOR CYLINDRICAL SAMPLE GEOMETRY
Res. Asst. Cem KATMA	Gebze Technical University	ELECTRONIC CONDUCTIVITY OF Mo ₆ X ₆ NANOWIRES UNDER TENSILE, COMPRESSIVE, AND TORSIONAL STRAIN
Eyüp Can MAVİ Erdem AKBOY	Yıldız Technical University	ANALYSIS OF DUAL OUTPUT ZERO VOLTAGE SWITCHING FULL BRIDGE DC-DC CONVERTER
Res. Asst. Dr. Utku Cem KARABULUT	Bandırma Onyedi Eylül University	DOUBLE BODY FLOW SIMULATIONS WITH A BULK CARRIER AT MODEL SCALE AND FULL- SCALE
Res. Asst. Dr. Utku Cem KARABULUT	Bandırma Onyedi Eylül University	DERIVATION OF SEVEN PARAMETER MATHEMATICAL HULL FORMS
Res. Asst. Mert BASANÇELEBİ Asst. Prof. Dr. İrem ŞENYER YAPICI Assoc. Prof. Dr. Rukiye UZUN ARSLAN	Zonguldak Bülent Ecevit University	A CONVOLUTIONAL NEURAL NETWORK-BASED APPROACH FOR THE AUTOMATIC DIAGNOSIS OF PLANT LEAF DISEASES
Res. Asst. Mert BASANÇELEBİ Asst. Prof. Dr. İrem ŞENYER YAPICI Assoc. Prof. Dr. Rukiye UZUN ARSLAN	Zonguldak Bülent Ecevit University	A HYBRID ARTIFICIAL INTELLIGENCE MODEL BASED ON HOPFIELD AND ELMAN NETWORKS FOR THE DETECTION OF VENTRICULAR PREMATURE BEATS

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DATE	TIME	SESSION
• 03.12.2025	• 09⁰⁰–11⁰⁰ • Türkiye Time	• HALL-2 • SESSION-1

HEAD OF SESSION: Lec. Kaan DÜZDEMİR		
Orçun Çalışkan, PhD	Tbilisi State University	THE DEMOCRATIC PRECEDENT OF 1918–1921: THE FIRST GEORGIAN REPUBLIC AND THE IDEOLOGICAL FOUNDATIONS OF EUROPEAN INTEGRATION
Orçun Çalışkan, PhD	Tbilisi State University	DEMOCRATIC CONSOLIDATION OR EROSION? POLITICAL CHANGE AND SYSTEMIC POLARIZATION UNDER GEORGIAN DREAM
Lec. Kaan DÜZDEMİR	Girne American University	ANALYSIS OF THE RIGHT TO PROPERTY IN THE CONTEXT OF CONCRETE DECISIONS OF THE EUROPEAN COURT OF HUMAN RIGHTS
Lec. Kaan DÜZDEMİR	Girne American University	THE THREATS OF DEEPFAKE CONTENTS REGARDING THE PERSONAL RIGHTS: AN ANALYSIS WITHIN THE FRAMEWORK OF THE CONSTITUTION OF REPUBLIC OF TURKEY
Res. Asst. Dr. Furkan ÖZDEMİR	Çukurova University	A LAW COMPLIANCE REASON SPECIFIC TO SPORTS LAW: PARTICIPATION WITH ACCEPTANCE OF RISK
MERVE AYDIN	Altınbaş University	TRANSITION TO SEPARATE PROPERTY BY COURT ORDER AND ITS LEGAL CONSEQUENCES
Assoc. Prof. Dr. Seyfi KILIÇ Mehmet BOZTEPE	Süleyman Demirel University	POLITICAL DISCOURSE IN THE POST-TRUTH ERA: A DISCOURSE ANALYSIS OF THE 2024 U.S. PRESIDENTIAL DEBATE (HARRIS-TRUMP) IN THE CONTEXT OF DEMOCRACY

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 DATE	• 03.12.2025	 TIME	• 09⁰⁰–11⁰⁰ • Turkiye Time	 SESSION	• HALL-3 • SESSION-1

HEAD OF SESSION: Prof. Dr. Muhittin Eliaçık		
Qurbanova Dürdanə Səyyaf qızı	Mingachevir State University	NEW METHODS, NEW TECHNOLOGIES IN TEACHING ENGLISH: TEACHING PRONUNCIATION
Mehmet KESKİN	Ministry of Education	A DIDACTIC LOOK AT NÂBÎ'S HAYRIYYE IN THE CONTEXT OF THE TURKISH CENTURY EDUCATION MODEL
Lec. Zeynep Daşer	Atatürk University	EFL LEARNERS' FOREIGN LANGUAGE CLASSROOM ANXIETY: DOES GENDER MATTER?
Prof. Dr. Muhittin Eliaçık	Kırıkkale University	A QUESTION-ANSWER TREATISE BY AN UNKNOWN QADI AUTHOR
Prof. Dr. Muhittin Eliaçık	Kırıkkale University	THE TRADITION OF OTTOMAN JUDGES WRITING WORKS FOR APPOINTMENT
Lec. Dr. Cansu AVCI	Marmara University	THE PERCEPTION OF SPACE IN ANNIE ERNAUX'S NOVEL A WOMAN'S STORY
Prof. Dr. Erkan FİDAN	Bilecik Seyh Edebali University	CONTEMPORARY APPROACHES AND METHODOLOGICAL ADVANCES IN ARCHAEOLOGICAL SURFACE SURVEYS
Prof. Dr. Erkan FİDAN	Bilecik Seyh Edebali University	METHODOLOGICAL APPROACHES AND SCIENTIFIC DOCUMENTATION IN ARCHAEOLOGICAL EXCAVATIONS

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DATE	TIME	SESSION
• 03.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-4 • SESSION-1

HEAD OF SESSION: DR CHUKWUEMEKA G. EME		
Ramadoss Aksshaya Dr. Jayasree Krishnan	VELS Institute of Science, Technology and Advanced Studies (VISTAS)	REDEFINING WORK AND WORKFORCE IN THE DIGITAL ERA: IMPACTS OF HYBRID WORK
DR CHUKWUEMEKA G. EME, PhD	National Open University of Nigeria	IMPACT OF RURAL-URBAN MIGRATION OF YOUTHS ON SOCIO-ECONOMIC DEVELOPMENT OF NIGERIA (EMPIRICAL EVIDENCE FROM ABIA STATE, NIGERIA)
Dr. Vidya Sunil Kadam Ms. Puja Patil Ms. Anjali Jadhav	Rajarambapu Institute of Technology	BRIDGING PERCEPTION AND PRACTICE: BEHAVIORAL FACTORS IN SOLAR ENERGY ADOPTION AMONG RURAL RESIDENTS OF WALWA TALUKA
DR CHUKWUEMEKA G. EME, PhD	National Open University of Nigeria	QUALITY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE, AND CUSTOMER SATISFACTION IN SMALL & MEDIUM- SIZED ENTERPRISES (SMEs) IN NIGERIA
Dr. Vidya Sunil Kadam Ms. Dhanashri Nagappa Chandkoti Ms. Vaishnavi Manik Salgar	Rajarambapu Institute of Technology	SOCIO-BEHAVIORAL DYNAMICS INFLUENCING SOLAR ENERGY ADOPTION IN THE RURAL CONTEXT OF WALWA TALUKA, SANGLI
DR CHUKWUEMEKA G. EME, PhD	National Open University of Nigeria	ENVIRONMENTAL DEGRADATION AND SOCIO- ECONOMIC DEVELOPMENT OF THE NIGER- DELTA-REGION OF NIGERIA- A CASE OF OGONI- LAND
Elmira Azizi Norouzabadi Pegah Ghorbanpour	University of Tabriz	DIGITALIZATION OF DECISION-MAKING PROCESSES AND TOTAL FACTOR PRODUCTIVITY IN LARGE-SCALE ENTERPRISES: A COMPREHENSIVE REVIEW OF ORGANIZATIONAL AND TECHNOLOGICAL EVIDENCE
Fatima Bint Hassan Zainab Hassan Abdulazeez Musa Salamatu Abdulkadir Kasim	Niger State Polytechnic	STRENGTHENING WOMEN'S ENTREPRENEURSHIP FOR SUSTAINABLE DEVELOPMENT IN BIDA LOCAL GOVERNMENT AREA OF NIGER STATE

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DATE	TIME	SESSION
• 03.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-5 • SESSION-1

HEAD OF SESSION: Prof. Dr. Ananda Majumdar

Zakia Hussaini	Ahlul Bayt International University	THE ROLE OF WOMEN'S HANDICRAFTS IN ATTRACTING DOMESTIC TOURISTS IN AFGHANISTAN: A CASE STUDY OF BAMİYAN, GHAZNI, AND HERAT
Prof. Dr. Ananda Majumdar	Harvard University	THE LEGACY OF ALFRED THE GREAT: MILITARY INNOVATIONS AND CULTURAL UNIFICATION IN EARLY MEDIEVAL ENGLAND
Pëllumb Hidri Assoc. Prof. Dr. Blendi Lami Prof. Dr. Kristaq Xharo	---	IN THE SHADOWS OF HISTORY: HOW IDENTITIES SHAPE HUMAN SECURITY POLICIES IN THE WESTERN BALKANS
Mst.Shamima Islam	Khulna University	FROM DISPLACEMENT TO CULTIVATION: HISTORICAL TRAJECTORIES OF AGRARIAN ADAPTATION AMONG ROHINGYA REFUGEES IN COX'S BAZAR (1978–2025)
Assistant Professor Dr. Viola Makhzoum Maria Bdadouni Abdel Nour	Islamic University of Lebanon (IUL)	CURRICULUM DEVELOPMENT TO ENHANCE STUDENTS' ALGORITHMIC THINKING SKILLS IN THE ERA OF DIGITAL TRANSFORMATION
Bui Hoang Tan Le Thi Minh Thu	Can Tho University (Vietnam)	POLITICS AND STATE INSTITUTIONS UNDER THE LY DYNASTY: POWER STRUCTURE AND ADMINISTRATIVE ORGANIZATION
Le Thi Thuy Huong Bui Hoang Tan	Can Tho University (Vietnam)	THE ENDURING VALUE OF HO CHI MINH'S IDEOLOGY IN THE CONTEMPORARY ERA
Mihaela-Corina Bucur	University of Bucharest	THE PERMANENCE OF THE DECALOGUE IN THE CONTEXT OF TRANSITORY AND PERMANENT LAW: A THEOLOGICAL AND LEGAL APPROACH
Mihaela-Corina BUCUR	Romanian Society of Victimology 'Carol Davila' Post-secondary Health School Asanka Sante Medical Center	DRUG POLICY DIVERGENCE: ROMANIA'S PUNITIVE REFORM VERSUS THE EUROPEAN UNION PUBLIC HEALTH MODEL

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DATE	TIME	SESSION
• 03.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-6 • SESSION-1

HEAD OF SESSION: Prof Mamta Sharma

Migena Kecaj (Selçetaj) Rina Muka (Gera)	University "Luigj Gurakuqi"	BUILDING SENSE OF COMMUNITY IN MIDDLE SCHOOL EDUCATION
Prof Mamta Sharma Prof Sandeep K Sharma	KM College, University of Delhi Rajdhani College, University of Delhi	INNOVATIVE TEACHING PARADIGMS FOR GENERATION Z IN INDIAN HIGHER EDUCATION: BRIDGING TRADITION AND TECHNOLOGY UNDER NEP 2020
Mihaela Corina Bucur	'Carol Davila' Post-secondary Health School Romanian Society of Victimology	REDEFINING THE TEACHING-LEARNING PARADIGM THROUGH DIGITAL AND BLENDED STRATEGIES
Lec. Svetlana Apachița	Academy of Economic Studies of Moldova	STRATEGIES TO INCREASE MOTIVATION IN LEARNING MULTIPLE FOREIGN LANGUAGES
Kadyrova Gulnur Makhsatkhanzyzy Kypshakbaeva Aigerim Kuanyshbekkyzy	S.Seifullin Kazakh Agro Technical Research University Kazakh National Academy of Choreography	ENHANCING LEARNERS' GRAMMAR PROFICIENCY WITH THE HELP OF INFORMATION AND TELECOMMUNICATION TECHNOLOGIES IN ENGLISH EDUCATION
Jubaed Zauhar Nishat	North South University	EXPLORING TERTIARY STUDENTS' PERCEPTIONS REGARDING THE USE OF AI CHATBOTS IN THE DEVELOPMENT OF SPEAKING FLUENCY
Mekonnen Worku (Ph.D. candidate)	Jimma University	THE PRACTICE OF CONTINUOUS PROFESSIONAL DEVELOPMENT FOR TEACHERS' INSTRUCTIONAL QUALITY IN ETHIOPIA SECONDARY SCHOOLS FOCUSED IN OROMIA REGION WOLISO TOWN
ASABE EDWARD BASH (Ph.D.) CHRISTIANA DARIP DALOK	University of Jos	EFFECTS OF PERSONALISED LEARNING METHOD ON THE ACHIEVEMENT OF STUDENTS IN JOS NORTH LOCAL GOVERNMENT AREA, PLATEAU STATE, NIGERIA
Dr. Tahir Qureshi Dr. Mohammad Owais Farooqui Dr. Dhananjay Kumar Mishra	Hyderabad Campus Symbiosis International (Deemed University) University of Sharjah	INTELLECTUAL PROPERTY RIGHTS IN OUTER SPACE: CHALLENGES AND OPPORTUNITIES IN THE NEW SPACE AGE

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	DATE	• 03.12.2025		TIME	• 11³⁰–13³⁰ • Turkiye Time		SESSION	• HALL-1 • SESSION-2

HEAD OF SESSION: Lec. Dr. Devran BENGÜ

Sude BIÇKICI	Hasan Kalyoncu University	THE TRANSFORMATION OF DETACHED HOUSING TYPES FROM PAST TO PRESENT IN GAZIANTEP WITHIN THE SCOPE OF CULTURAL SUSTAINABILITY
Tuğçe KARALAR ÖZLÜ Prof. Dr. Dilek AKBULUT	Gazi University	EVALUATION OF THE USE AND EFFECTS OF DIGITAL TOOLS IN INDUSTRIAL DESIGN EDUCATION: A MIXED METHOD STUDY ON STUDENT EXPERIENCES
Melis Nur YILDIZ	Hasan Kalyoncu University	THE ROLE OF POPULAR CULTURE IN SUSTAINABLE INTERIOR DESIGN: THE CASE OF GAZIANTEP CAFES
Lec. Dr. Devran BENGÜ	İstanbul Kent University İstanbul Medipol University	FROM THE SPATIALITY OF SOCIAL CAPITAL TO DESIGN NORMS: A CONTEXT-SENSITIVE ANALYTICAL PROTOCOL
Asst. Prof. Dr. Leyla KADERLİ Assoc. Prof. Dr. Ali İhsan ÇELİK Hanife BÜYÜKÇEKİÇ Sena KIRMIZITAŞ Reyhan Meltem DEMİRTAŞ Abdullah YILDIZ	Erciyes University Kayseri University	THE EFFECT OF GOAT HAIR ADDITION ON STRUCTURAL BEHAVIOR IN HYDRAULIC LIME AND TILE DUST BASED ROMAN MORTARS FOR RESTORATION PURPOSES
Assoc. Prof. Dr. Ali İhsan ÇELİK Asst. Prof. Dr. Leyla KADERLİ Hanife BÜYÜKÇEKİÇ Sena KIRMIZITAŞ Reyhan Meltem DEMİRTAŞ Abdullah YILDIZ	Kayseri University Erciyes University	EXPERIMENTAL INVESTIGATION OF THE EFFECT OF FLAX FIBER, GOAT HAIR AND GLASS FIBER REINFORCEMENTS ON KHORASAN MORTARS CONTAINING HYDRAULIC LIME BINDER TILE DUST AND MARBLE DUST

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DATE	TIME	SESSION
• 03.12.2025	• 11³⁰–13³⁰ • Türkiye Time	• HALL-2 • SESSION-2

HEAD OF SESSION: Assoc. Prof. Dr. Ayşe ASİLTÜRK

Res. Asst. Dr. Ayşe Nur Uslu	Karabük University	INTERCULTURAL MEAL SHARING AND RITUAL PRACTICES: A COMPARATIVE STUDY OF ETHNIC CULINARY TRADITIONS
Res. Asst. Dr. Ayşe Nur Uslu	Karabük University	SOCIAL AND CULTURAL IMPLICATIONS OF MODERN HEALTHY EATING TRENDS: A SYSTEMATIC REVIEW
Seyfullah HANCIOĞLU Assoc. Prof. Dr. İsmail DURAK	Düzce University	THE EFFECT OF INTEREST RATES AND INFLATION (PPI AND CPI) ON BORSA İSTANBUL SECTOR RETURNS: AN EMPIRICAL ANALYSIS
Seda Nur BİLGİN SANAÇ Assoc. Prof. Dr. Nurcan YÜCEL	Fırat University	ANALYSIS OF VISUALS BELONGING TO A EVE COSMETIC BRAND USING THE EYE-TRACKING METHOD
Assoc. Prof. Dr. Ayşe ASİLTÜRK	Trabzon University	TÜRKİYE'S POSITION IN THE WORLD DIGITAL COMPETITIVENESS RANKING
Assoc. Prof. Dr. Ayşe ASİLTÜRK	Trabzon University	ADAPTING TO DIGITALIZED BUSINESS LIFE: NEW TECHNOLOGIES AND EXPECTATIONS FROM GRADUATES
Asst. Prof. Dr. İsmail Çağrı DOĞAN	Ankara Yıldırım Beyazıt University	EXPLORATION OF ARTIFICIAL INTELLIGENCE STUDIES IN HUMAN RESOURCES MANAGEMENT: BIBLIOMETRIC COUPLING ANALYSIS

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 DATE	• 03.12.2025	 TIME	• 11³⁰ – 13³⁰ • Türkiye Time	 SESSION	• HALL-3 • SESSION-2

HEAD OF SESSION: Assoc. Prof. Dr. Leyla BEKENSİR

Lec. Dr. Gülşen ALTINTAŞ İrem Ceyda KURT	Manisa Celâl Bayar University Kütahya Dumlupınar University	METAPHORICAL PERCEPTIONS OF PROSPECTIVE TEACHERS REGARDING THE 'PLACE OF TEACHERS IN SOCIETY'
Rabia TOPLU YILMAZ Asst. Prof. Dr. Raziye ERDEM	Trabzon University	TRENDS IN RESEARCH ON STORYTELLING SKILLS IN SPECIAL EDUCATION: A LITERATURE REVIEW
Assoc. Prof. Dr. Şenyurt YENİPİNAR Nesrin TERZİOĞLU Gülperi ADAK	Aksaray University	RETHINKING IN THE DIGITAL AGE: STUDENT SAFETY AND THE ROLE OF STAKEHOLDERS IN COMBATING CYBERBULLYING
Asst. Prof. Dr. Şenyurt YENİPİNAR Emre DÖNGEL Abdulhamit GÜNEŞ	Aksaray University	PERCEPTIONS OF SCHOOL ADMINISTRATORS REGARDING LEADERSHIP APPROACHES: A PHENOMENOLOGICAL ANALYSIS
Zeynep ÇELEBİ Asst. Prof. Dr. Veysel Karani ŞÜKÜROĞLU	Kastamonu University	NOSTALGIA MARKETING AND THE CONSUMPTION OF THE PAST
Dr. Ferhat ATIK	Girne American University	THE COMMUNICATION LANGUAGE OF INFLUENCER CULTURE: IDENTITY CONSTRUCTION AND PERFORMANCE AESTHETICS
Assoc. Prof. Dr. Leyla BEKENSİR Lec. Dr. Berrak Elif TOSUN	Ankara University	THE ROLE OF EAR TRAINING IN PLAYING FROM MEMORY ON THE PIANO: THE RELATIONSHIP BETWEEN AURAL ANTICIPATION AND MOTOR MEMORY

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DATE	TIME	SESSION
• 03.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-4 • SESSION-2

HEAD OF SESSION: Dr. Md. Nurul Alam Siddiqi

Elda Zeqiri Orges Lena Jasemin Todri	UCAM Universidad Católica San Antonio de Murcia	ADAPTATION, TRANSLATION, AND CROSS-CULTURAL VALIDATION OF THE CERVICAL DISABILITY INDEX (NDI) FOR USE IN THE ALBANIAN-SPEAKING POPULATION
AIT MESSAAD Said	Higher Institute of Nursing and Health Care Professions of Marrakech	RISK FACTORS ASSOCIATED WITH GROWTH RETARDATION IN CHILDREN HOSPITALIZED AT THE PROVINCIAL HOSPITAL OF SALÉ (MOROCCO)
P.H. Necefguliyeva	Azerbaijan Medical University	THE CHOICE OF SURGICAL INTERVENTION IN THE TREATMENT OF ADHESION DISEASE
Najlae ADADI Hakima MISSOUM	Higher Institute of Nursing Professions and Health Technologies (ISPITS) Laboratory of Human Pathologies Biology	CORRELATION GENOTYPE-PHENOTYPE: MEFV GENE MUTATIONS AND MOROCCAN PATIENTS WITH RHEUMATOID ARTHRITIS
Dr. Md. Nurul Alam Siddiqi	National Institute of Cardiovascular Disease (NICVD)	EMERGING CARDIOVASCULAR HEALTH PROBLEMS IN BANGLADESH DUE TO CLIMATE CHANGE AND ITS PREDISPOSING FACTORS
Rihab BAMAAROUF Rajaa SEBIHI Lakbir EL HAMIDI Rachid ERRIFAI	Mohammed V University in Rabat ENSAM Cheikh Zaid International University Hospital	PLANNING BREAST CANCER TREATMENT WITH EXTERNAL RADIOTHERAPY: DOSIMETRIC STUDY AND CLINICAL RESULTS
Ajesh Chauhan Jatin Vats Anupam Thakur Aayush Prakash	Hidu College of Pharmacy	PRECISION IMPROVEMENT IN HEALTHCARE THROUGH THE USE OF AR/VR AND DIGITAL TWINS: ROBOTIC ASSISTANCE

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DATE	TIME	SESSION
• 03.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-5 • SESSION-2

HEAD OF SESSION: Jemi Sailuk

Aldina Refa Vernanda Christine Wulandari Desi Aryani Arief Darmawan	University of Lampung	THE DYNAMICS OF IMPLEMENTING THE FOREST CARBON PROGRAM (REDD+): A QUALITATIVE STUDY IN THE REPONG DAMAR INDIGENOUS COMMUNITY IN GUNUNG KEMALA SUBDISTRICT, WEST COAST
Md Asaduzzaman Mat Sukhi Khatun	Gopalganj Science and Technology University	INFLUENCE OF ROOT SYSTEM ARCHITECTURE ON CROP YIELD AND PERFORMANCE OF CEREALS (RICE, WHEAT, MAIZE)
Laila Ouardi Abdelmajid Haddioui Hasna Zinelabidine Jamal Charafi	National Institute of Agricultural Research Sultan Moulay Slimane University	INFLUENCE OF VINE AGE ON QUALITATIVE, COLORIMETRIC TRAITS AND ANTHOCYANIN CONTENT IN TWO RED TABLE GRAPE CULTIVARS
Most. Mokarroma	University of Rajshahi	CLIMATE CHANGE AND THE RISING BURDEN OF DENGUE: PATHWAYS, PUBLIC HEALTH RISKS, AND ADAPTATION STRATEGIES
Jemi Sailuk	University of Rajshahi	TRANSFERRING AGRICULTURAL TECHNOLOGY IN CULTURALLY ROOTED COMMUNITIES: THE CASE OF INDIGENOUS PEOPLE IN THE CHITTAGONG HILL TRACTS
Md. Al-Amin Shadik Md. Ashfaq Sadat Kizar Ahmed Sumon Md. Shafiqul Islam Harunur Rashid	Bangladesh Agricultural University	NEEM OIL AS A BIOPESTICIDE FOR ERADICATING BACKSWIMMER INSECTS IN STINGING CATFISH NURSERY PONDS
Abdullahi, A. Shuaibu, U. Muhammad, H.U. Jibrin, S.	Federal University of Technology	ASSESSMENT OF EXTENSION SERVICE NEED AMONG ARTISANAL FISHERMEN OF BORGU LOCAL GOVERNMENT AREA NIGER STATE, NIGERIA
Md. Rafiqul Islam Tridip Roy Mohammad Lokman Ali Sudipta Kumar Nag Tawhidur Rahman	Patuakhali Science and Technology University Bangladesh Water Development Board	ASSESSMENT OF THE PRODUCTION PERFORMANCE OF INDIAN MAJOR CARP ROHU (LABEO ROHITA) WITH TILAPIA (OREOCHROMIS NILOTICUS) ON CAGE CULTURE SYSTEM IN SOUTHERN BANGLADESH
Muhammad Arslan Ashraf Rizwan Rasheed	Government College University	MICROPLASTICS AND HEAVY METALS TOXICITY IN PLANTS: AN OVERVIEW

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DATE	TIME	SESSION
• 03.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-6 • SESSION-2

HEAD OF SESSION: Profe Dr. Imad Abed Hamza Al-Atabi

Ikegwu, Emmanuel M. Okorafor, Uneke Obidiegwu, Samuel O. Ajayi, Ruth O.	Yaba College of Technology	STATISTICAL ASSESSMENT OF AWARENESS, ATTITUDE TOWARDS AND PRACTICES PROMOTING MENTAL HEALTH AMONG TERTIARY INSTITUTIONS STUDENTS
Ikwuoche Philip Onyejonchi Dr. David Ikwuoche John Dr. Ogunmola Adeniyi Oyewole	Federal University Wukari	CHARACTERIZATION OF POISSON-AGUF DISTRIBUTION WITH APPLICATION
JOB, S. J. Hassan, A. A. (PhD) Prof. Gimba, R. W. Prof. Enagi, A. I.	Federal University of Technology	EFFECTS OF FLIPPED CLASSROOM MODES ON PRE-SERVICE MATHEMATICS TEACHERS' ACHIEVEMENT IN COLLEGES OF EDUCATION, NORTH-CENTRAL
Profe Dr. Imad Abed Hamza Al-Atabi	Al-Muthanna University	EXTREMISM ACCORDING TO SOME DEMOGRAPHIC VARIABLES AND THE EFFECTIVENESS OF REALISTIC COUNSELING TO REDUCE THE COGNITIVE AND EMOTIONAL COMPONENTS OF TEACHERS UNDER TRAINING
Tarif Hosen A K M Mahmudul Haque Md. Fairuj Sadaf Opee	University of Rajshahi	EXPLORING STUDENT ENGAGEMENT IN CAMPUS SUSTAINABILITY PRACTICES: A CASE STUDY ON UNIVERSITY OF RAJSHAHI
Eglė Morkūnienė Dr. Sinilga Černulienė	Higher Education Institution	CHALLENGES OF SOCIAL INTERACTIONS IN RECREATIONAL FORESTS: AN ANALYSIS OF VISITOR BEHAVIOUR AND EXPERIENCES

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DATE	TIME	SESSION
• 03.12.2025	• 14⁰⁰–16⁰⁰ • Türkiye Time	• HALL-1 • SESSION-3

HEAD OF SESSION: Prof. Dr. Nülüfer ERBİL

Nur Fidan Günbatı Nülüfer Erbil	Ordu University	THE STATUS OF WOMEN'S HEALTH IN THE WORLD AND TÜRKİYE: EVALUATION OF CURRENT DATA
Nur Fidan Günbatı Asst. Prof. Dr. Ebru Şahin	Ordu University	THE FIRST STEP AFTER BIRTH: DETERMINING FACTORS IN POSTPARTUM FAMILY PLANNING
Murat DEMİR Dr. Burcu ARSLAN Hilal KARATAŞ Çetin TÖREMEN	Viking Temizlik ve Kozmetik A.Ş.	SYNTHESIS AND CHARACTERISATION OF ETHYLHEXYLGLYCERIN USED AS A PRESERVATIVE IN COSMETIC PRODUCTS
Prof. Dr. Nülüfer ERBİL Aleyna KALE Gizem ÖZATA Kübra Gönül YÜKSEL	Ordu University	ORIENTATION TOWARD GENITAL AESTHETIC SURGERY AND INFLUENCING IN WOMEN AND MEN
Prof. Dr. Nülüfer ERBİL Gizem ÖZATA Aleyna KALE Kübra Gönül YÜKSEL	Ordu University	VOLUNTARY CHILDLESSNESS: WOMEN'S CHOICES AND SOCIAL REACTIONS
Şeydanur OSMA Asst. Prof. Dr. Ebru ŞAHİN	Ordu University	NATURAL PAIN MANAGEMENT: NON-PHARMACOLOGICAL METHODS IN PREGNANCY AND BIRTH
Sena Melike TAŞCI Prof. Dr. Ayfer ÖZBAŞ	İstanbul University-Cerrahpaşa Demiroğlu Science University Florence Nightingale Hospital	NURSING CARE OF A PATIENT WITH ILEAL CONDUIT AND RADICAL CYSTECTOMY ACCORDING TO GORDON'S FUNCTIONAL HEALTH PATTERNS MODEL: A CASE REPORT
Prof. Dr. Nülüfer ERBİL Kübra Gönül YÜKSEL Aleyna KALE Gizem ÖZATA	Ordu University	THE EFFECTS OF MOTHERS' SOCIAL MEDIA USE ON BREASTFEEDING
Merve ÖKSÜZ, Asst. Prof. Dr. Ebru ŞAHİN	Ordu University	THE ROLE OF ALTERNATIVE TREATMENTS DURING LACTATION: CAN BREASTFEEDING BARRIERS BE OVERCOME?

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	DATE	• 03.12.2025		TIME	• 14⁰⁰–16⁰⁰ • Türkiye Time		SESSION	• HALL-2 • SESSION-3

HEAD OF SESSION:		
Ömer ÖRUŞ Prof. Dr. Ömer MENEKŞE	Düzce University	LEGAL EXCEPTIONS IN THE LIGHT OF ATIF MEHMED BEY'S COMMENTARY ON THE MECELLE: AN ANALYSIS OF THE PRINCIPLE THAT 'NECESSITIES MAKE PROHIBITED THINGS PERMISSIBLE'
Sezin Azizoglou	Marmara University	THE RELATIONSHIP BETWEEN IDENTITY AND RELIGIOUS EDUCATION IN THE CONTEXT OF MUSLIM TURKISH YOUTH IN WESTERN THRACE
Asst. Prof. Dr. Abdalbaki Kinsün	Bingöl University	THREE STYLES OF POLITICS IN THE POLITICAL KURDISH MOVEMENT
Hatice AKBAŞ Assoc. Prof. Dr. Faruk GÖRGÜLÜ	Duzce University	THE PRINCIPLES OF VERBAL COMMUNICATION IN THE QUR'AN IN THE CONTEXT OF ELMALILI HAMDİ YAZIR'S EXEGESIS OF THE 'TRUE RELIGION OF THE QUR'AN'
Assoc. Prof. Dr. Ahmet Yavuz ÇAMLI Lec. Dr. Aziz Can ŞENSAZLI	Manisa Celal Bayar University	DISCUSSING THE SUSTAINABILITY OF TURKEY-KAZAKHSTAN RELATIONS IN THE CONTEXT OF POLITICAL ECONOMY
Ahmet Fatih DALDAL	Aksaray University	THE CONCEPT OF LEADERSHIP FROM PAST TO PRESENT

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DATE	TIME	SESSION
• 03.12.2025	• 14⁰⁰–16⁰⁰ • Turkiye Time	• HALL-3 • SESSION-3

HEAD OF SESSION: Asst. Prof. Dr. Arif Emre AKTAS

Furkan YILDIRIM	Koluman Otomotiv Endüstri A.Ş.	DESIGN, MODELING, REVERSE POLARITY PROTECTION APPROACHES, AND PERFORMANCE ANALYSIS OF AUXILIARY ALTERNATOR SYSTEMS IN MILITARY VEHICLES
Asst. Prof. Dr. Arif Emre AKTAS	Çukurova University	COMPUTATIONAL HEAT TRANSFER ANALYSIS OF MICROCHANNEL HEAT SINKS WITH DIFFERENT SHAPES
Asst. Prof. Dr. Arif Emre AKTAS Assoc. Prof. Dr. Mehmet Tahir ERDİNC Assoc. Prof. Dr. Muhammet Nasif KURU	Çukurova University	NUMERICAL INVESTIGATION OF FLOW AND HEAT TRANSFER IN INLINE ELLIPTICAL WAVY FIN-AND-TUBE HEAT EXCHANGERS FOR DIFFERENT ATTACK ANGLES
Ahmet Serdar SERTER	Koluman Otomotiv Endüstri A.Ş.	THE EFFECT OF VEHICLE MASS AND VOLUME CHANGES ON ENERGY CONSUMPTION IN N2 CATEGORY ELECTRIC CARGO VAN VEHICLES
Research Assistant Ömer HÜKÜMDAR Emirhan BÜYÜKKAYA Eda Nur ÇAMCI	Çukurova University	DESIGN OPTIMIZATION AND STRUCTURAL ANALYSIS OF UPPER AND LOWER CONTROL ARMS IN DOUBLE WISHBONE SUSPENSION SYSTEMS
Research Assistant Ömer HÜKÜMDAR Murat Emin UZUN	Çukurova University	INVESTIGATION OF TRIBOLOGICAL AND SURFACE ROUGHNESS OF ELECTRODEPOSITED Ni-W/AIN COMPOSITE COATINGS ON COPPER SUBSTRATES
Lec. Akın ÇALIŞKAN Assoc. Prof. Dr. İsmet KANDİLLİ Lec. Özkan MÜNÜKLÜ	Kocaeli University Karamürsel Denizcilik Vocational School	COMPARATIVE ANALYSIS OF WELDING SIMULATOR APPLICATIONS AND WELDING TRAINING METHODS
İbrahim BESEN Eren COŞKUN	İletişim Bilgisayar Yazılım A.Ş.	RAG AND LOCAL LLM INTEGRATION IN TURKISH CORPORATE KNOWLEDGE BASES: ACCELERATING SUPPORT PROCESSES
İbrahim BESEN Eren COŞKUN	İletişim Bilgisayar Yazılım A.Ş.	PREDICTIVE MAINTENANCE AND OPTIMIZATION IN INDUSTRIAL MANUFACTURING: REMAINING USEFUL LIFE ESTIMATION AND PARAMETER MANAGEMENT

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DATE	TIME	SESSION
• 03.12.2025	• 14⁰⁰–16⁰⁰ • Turkiye Time	• HALL-4 • SESSION-3

HEAD OF SESSION: Dr.B.MAHADEVAN

Deepak Bansal Aditya Bansal	Indian Institute of Finance I.T.S. Engineering College	DESIGN AND DEVELOPMENT OF NOVEL APPROACH FOR FILE SHARING FOR SECURITY USING BLOCKCHAIN TECHNOLOGY
Faruku Muhammad Aliero Zaharaddeen Adamu Khamisu Umar M Adam Shafiu Abubakar Abdulrahman Ibrahim	Abdullahi Fodio University of Science and Technology	PAPER TITLED PHISHING WEBSITE DETECTOR
Bhavana Bhardwaj Prof. Anurag Shakya	Mangalayatan University	AI-POWERED TRANSFORMATION OF HR PRACTICES: A STUDY ON IT COMPANIES IN UTTAR PRADESH
Kazi Redwan Rafi Mithila Rahman Efat Ara Haque	Khulna University of Engineering and Technology Lamar University	YARNS OF ARTIFICIAL INTELLIGENCE: A DEEP LEARNING APPROACH FOR TEXTILE WASTE GENERATION AND MANAGEMENT IN SOME AREAS OF DHAKA
Dr.B.MAHADEVAN	Vellalar College for Women (Autonomous)	ASSESSING THE DIGITAL TRANSFORMATION OF SCHOLARLY COMMUNICATION AND PUBLISHING PRACTICES IN SOUTH INDIAN UNIVERSITIES: A SURVEY
Md. Jubayerul Hasan Mahin Md. Rabby Khan Md. Ahsan Habib	Green University of Bangladesh Mawlana Bhashani Science and Technology University	BLOCKCHAIN-ENABLED INTRUSION DETECTION SYSTEM FOR SECURE NID VERIFICATION A SECURITY-FOCUSED FRAMEWORK FOR DECENTRALIZED NATIONAL IDENTITY AUTHENTICATION
Md Iftekhairul Alam Shomel	Rajshahi University of Engineering & Technology	HYBRID CONTRASTIVE AND GENERATIVE DEEP LEARNING MODELS FOR MULTIMODAL SENTIMENT AND EMOTION ANALYSIS

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 DATE	• 03.12.2025	 TIME	• 14⁰⁰–16⁰⁰ • Turkiye Time	 SESSION	• HALL-5 • SESSION-3

HEAD OF SESSION: Dr. Md. Arif Billah

Cheah Chee Keong Kong Yin Mei Ong Hock Siong Chim Weng Kong Foo Chuan Chew Tan Kock Lim	Jalan Universiti UOW Malaysia KDU Penang University College	THE OPTIMAL DESIGN AND INCLUSIVE DEPLOYMENT OF CENTRAL BANK DIGITAL CURRENCIES (CBDCS) IN EMERGING MARKETS: A THEORETICAL FRAMEWORK
Dr. Md. Arif Billah Prof. Monir Ahammed Azizul Haque	International Islamic University Chittagong	QARD-E-HASANAH FINANCING AND FARM PRODUCTION EFFICIENCY: EVIDENCE FROM RURAL BANGLADESH
Dr. Md. Arif Billah	International Islamic University Chittagong	ISLAMIC SOCIAL FINANCE AND COMMUNITY DEVELOPMENT: EMPIRICAL EVIDENCE ON POVERTY ALLEVIATION AND ECONOMIC EQUITY
Dr. Ina Sejdini Assoc. Prof. Imelda Sejdini Assoc. Prof. Ardita Todri	University of Elbasan	A DISCRIMINANT ANALYSIS BASED ON FINANCIAL INDICATORS FOR CLASSIFYING SME GROWTH IN ALBANIA
Dr. Ina Sejdini Assoc. Prof. Imelda Sejdini Assoc. Prof. Ardita Todri	University of Elbasan	YOUTH, AI, AND INCOME: A STUDY OF AWARENESS, ENGAGEMENT, AND OPPORTUNITIES IN TIRANA
Mihaela Oprea Mihaela Vlădescu	National Institute for Economic Research 'Costin C. Kirițescu'	ROMANIA'S POSITION IN THE DEMO-ECONOMIC RANKING OF A GROUP OF EU MEMBER STATES. A COMPARATIVE ANALYSIS
Dr. Arun V.V Dr. K S Suresh Kumar	Rajagiri Viswajyothi College of Arts and Applied Sciences University of Kerala	HOW DO CORPORATE GOVERNANCE PRACTICES INFLUENCE ORGANIZATIONAL PERFORMANCE AMONG LISTED COMPANIES IN INDIA?
Mohsen Mohammadi Khyareh Mohaddeseh Nejadipour	Gonbad Kavous University	DIGITAL TRANSFORMATION IN IRANIAN BANKING: THE MODERATING INFLUENCE OF REGULATORY SANDBOX EFFECTIVENESS ON CAPABILITY-PERFORMANCE LINK
Mohsen Mohammadi Khyareh Mohaddeseh Nejadipour	Gonbad Kavous University	BRIDGING THE DIGITAL DIVIDE IN EMERGING MARKETS: THE CATALYTIC ROLE OF REGULATORY SANDBOXES IN BANKING PERFORMANCE

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DATE	TIME	SESSION
• 03.12.2025	• 14⁰⁰–16⁰⁰ • Turkiye Time	• HALL-6 • SESSION-3

HEAD OF SESSION: Assoc. Prof. Dr. Gazment Koduzi

Nadour Sanae Houda Elyacoubi	Ibn Tofail University	THE IMPACT OF STRESS ON ANESTHESIA TRAINING FOR STUDENTS IN THE RABATSALÉKÉNITRA REGION IN MOROCCO : THE MODERATING ROLE OF SELFESTEEM
Suraya Sanjana Hoque Tayub Bin Shahajahan	University of Rajshahi	EVALUATING LOW-COST CLAY WHEEL THERAPY AS AN ACCESSIBLE MENTAL HEALTH INTERVENTION FOR MIDDLE-INCOME ADULTS IN BANGLADESH: A MIXED-METHOD STUDY
Nadour Sanae Houda Elyacoubi	Ibn Tofail University	ACADEMIC BURNOUT AMONG NURSING STUDENTS IN MOROCCO: PREVALENCE AND KEY PREDICTORS
Meenatchi.S Devadharshini.R Gomathy.E Keerthana.V Kishore.R Swathi.R A. Hari Nandhini	Bharath Institution Of Higher Education And Research chennai	THERAPEUTIC POTENTIAL OF HERBAL AND AYURVEDIC MEDICINES IN MODERN HEALTHCARE
Assoc. Prof. Dr. Gazment Koduzi	“Aleksandër Xhuvani” University	FROM SEMASHKO TO BISMARCK: CHALLENGES FOR IT'S IMPLEMENTATION IN ALBANIA

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DATE	TIME	SESSION
• 03.12.2025	• 16³⁰–18³⁰ • Türkiye Time	• HALL-1 • SESSION-4

HEAD OF SESSION: Asst. Prof. Dr. Müslüm ÖZTÜRK

Assoc. Prof. Dr. Nursel YALÇIN Abdulkadir ÖKLÜ	Gazi University	AN APPLIED APPROACH TO SPEAKER AND ENVIRONMENT BASED DEEPPAKE AUDIO DETECTION
Mustafa Berk KELEŞ Assoc. Prof. Dr. Mehmet GÖKTÜRK	Gebze Technical University	LARGE-SCALE HYBRID RISKY TRANSACTION DETECTION WITH CLUSTER-BASED PRE-RISK SCORING AND GRADIENT BOOSTED DECISION TREES
Muhammed GÜRKAN Assoc. Prof. Dr. Vildan ATEŞ	Ankara Yıldırım Beyazıt University	AN EXAMINATION OF THE USE OF ARTIFICIAL INTELLIGENCE-BASED CHATBOTS IN E-GOVERNMENT SYSTEMS
BETÜL YEL RES. ASST. AYLİN SABANCI BAYRAMOĞLU RES. ASST. BERKER DAL	Pamukkale University	EVALUATING FACTORS AFFECTING HOUSING PRICES USING MACHINE LEARNING MODELS: THE CASE OF DENİZLİ
Küçük Mustafa HAYTA Asst. Prof. Dr. Cihan BAYRAKTAR	Karabük University	ARTIFICIAL INTELLIGENCE-SUPPORTED APPLICATIONS AND METHODS AFFECTING DIGITAL MARKETING STRATEGIES IN MANAGEMENT INFORMATION SYSTEMS
Emre UYGUR Assoc. Prof. Dr. Tolga AYDIN Res. Asst. Dr. Ebru ERDEM	Atatürk University	SMART MENU: A PERSONALIZED MENU RECOMMENDATION SYSTEM FOR RESTAURANTS
Asst. Prof. Dr. Müslüm ÖZTÜRK	Kilis 7 Aralık University	THE ROLE AND APPLICATIONS OF SPHERICAL FUZZY SETS IN QUANTITATIVE MULTI-CRITERIA DECISION-MAKING PROBLEMS

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DATE	TIME	SESSION
• 03.12.2025	• 16³⁰–18³⁰ • Türkiye Time	• HALL-2 • SESSION-4

HEAD OF SESSION: Assoc. Prof. Dr. Hülya ELMALI GÜLBAŞ

Mehmet ZEYBEK Hasan ALKAYA	İşbir Sentetik Dokuma Sanayi A.Ş.	DEVELOPMENT OF POLYETHYLENE-BASED ANTIBLOCK MASTERBATCH AND EVALUATION OF FILM BLOCKING PERFORMANCE
Assoc. Prof. Dr. Hülya ÖZTÜRK DOĞAN Assoc. Prof. Dr. Neslihan ÇELEBİ Prof. Dr. Arzu KAVAZ YÜKSEL	Atatürk University	EFFECT OF Pd NANOPARTICLES ON ETHANOL ELECTRO-OXIDATION ACTIVITY OF CeO ₂ NANOSTRUCTURES
Ahmet Mücahit ÇOLAK Burak Işık	İşbir Sentetik Dokuma Sanayi A.Ş.	DEVELOPMENT OF AN INTEGRATED TRACKING AND MANAGEMENT STRUCTURE IN PRODUCTION PROCESSES
Assist.. Prof. Dr. Hülya ELMALI GÜLBAŞ Nevin ÇANKAYA	Usak University	SYNTHESIS AND CHARACTERIZATION OF NOVEL METACRYLATE COPOLYMER
Dilay SÜMBÜL Serkan MENTEŞ	İşbir Sentetik Dokuma Sanayi A.Ş.	INTEGRATION OF CRITICAL TOOLS IN THE DEEP LEARNING DEVELOPMENT ECOSYSTEM: A PLATFORM UTILIZATION MODEL
Selin ULUKUL	Danone Tikveşli R&D Center	EFFECT OF STERILIZATION ON VISCOSITY IN MEDICAL NUTRITION PRODUCTS USED IN MALNUTRITION TREATMENT
Asst. Prof. Dr. Tugba DEMİR CALISKAN	Ankara University	EFFECT OF PFPE-BASED ADDITIVES ON THE WETTABILITY AND SURFACE ENERGY OF NYLON FILMS

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 DATE	• 03.12.2025	 TIME	• 16³⁰–18³⁰ • Türkiye Time	 SESSION	• HALL-3 • SESSION-4

HEAD OF SESSION: Assoc. Prof. Dr. Defne ÖCAL KAPLAN

Asst. Prof. Dr. Seliha Seçil BAYRAM Lec. Simge ERDAL Selva Seza CANDAN	Karabuk University S.S. AYKA Elderly Care Cooperative	A NEW MODEL IN ELDERLY CARE, TURKEY'S FIRST ELDERLY CARE COOPERATIVE: "AYKA"
Assoc. Prof. Dr. Arif ÇETİN	Marmara University	MOTIVATIONS FOR MASTER ATHLETES TO PARTICIPATE IN MARATHONS
Asst. Prof. Dr. Burhan ÖZKURT Ertuğrul ERTÜRK	Sivas Cumhuriyet University	THE MEANING OF SOCIAL SUPPORT FOR ELITE DEAF WRESTLERS: A QUALITATIVE STUDY
Assoc. Prof. Dr. Defne ÖCAL KAPLAN	Kastamonu University	A COMPARATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN BALANCE PARAMETERS, ANTHROPOMETRIC CHARACTERISTICS, AND NAVICULAR DROP VALUES IN YOUNG FEMALE VOLLEYBALL, HANDBALL, AND BASKETBALL PLAYERS
Asst. Prof. Dr. Rahmi YILDIZ	Sivas Cumhuriyet University	THE EFFECT OF COOPERATIVE LEARNING- BASED PHYSICAL EDUCATION COURSES ON SECONDARY SCHOOL STUDENTS' PROBLEM SOLVING SKILLS
Nevin GÜNEŞ Res. Asst. Dr. Hatice ÖZTÜRK Tülin KUŞGÖZOĞLU Berna ARAPASLAN	Kocaeli University Aksaray University	PSYCHODRAMA GROUP WORK ON WOMEN'S EMOTIONAL SELF-AWARENESS AND SELF- UNDERSTANDING
Begüm Merve GÖKBUNAR Asst. Prof. Dr. Safiye Elif ÇAĞATAY	İstanbul Arel University İstanbul Beykent University	THE ROLE OF FAMILY UNPREDICTABILITY AND FAMILY FUNCTIONING IN EATING DISORDERS: A SYSTEMATIC REVIEW
Assoc. Prof. Dr. Mehmet BULDUK Assoc. Prof. Dr. Veysel CAN Murat BOZKURT	Van Yuzuncu Yıl University	THE IMPACT OF AI-GENERATED VIDEOS ON CHILDREN'S CIRCUMCISION PROCESS

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DATE	TIME	SESSION
• 03.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-4 • SESSION-4

HEAD OF SESSION: Derra Mourad

Shafayet HOSSAIN Afroja SULTANA Md A Razzaque SARKER	University of Rajshahi	SYNTHESIS OF FeTi_2O_4 SPINEL VIA SOLID-STATE REACTION METHOD AND ITS THERMAL, OPTICAL, AND ELECTRICAL CHARACTERIZATION
Faisal Nazir	THE UNIVERSITY OF AGRICULTURE	PRODUCTION AND CHARACTERIZATION OF CARBON NANOTUBES FROM BIOCHAR UNDER MICROWAVE IRRADIATION
Belarbi Faten	Abdelhamid Ibn Badis University	EXPERIMENTAL STUDY OF ECO-FRIENDLY Cu_2SnS_3 THIN FILMS FOR SOLAR CELL APPLICATIONS
Branislav Radjenović Branko Kolarić Bojana Bokić Marija Radmilović-Radjenović Darko Vasiljević	University of Belgrade	GEOMETRIC EFFECTS ON THE THERMODYNAMIC PROPERTIES OF NANOSTRUCTURED MATERIALS
Zakariya Arbaoui Soufiane Elhadfi Mourad Boutahir Abdelhai Rahmani	Moulay Ismail University	BLACK PHOSPHORENE: A FIRST-PRINCIPLES STUDY FOR NEXT-GENERATION ENERGY HARVESTING
Prof. Dr. G. Nixon Samuel Vijayakumar Aishwarya. S Reshma. N Tharunikaa. P Tarnekaa. M Nivethitha. S.K Samiksha. R.K	R .M .K. Engineering College	REVIEW ON PLANCK'S QUANTUM THEORY
Derra Mourad	Ibn Zohr University	DAMAGE DETECTION METHODS FOR SQUARE-SECTION TUBES USING ULTRASONIC TECHNOLOGY
Afroja SULTANA Shafayet HOSSAIN Md A Razzaque SARKER	University of Rajshahi	THERMAL, OPTICAL, AND ELECTRICAL PROPERTY INVESTIGATION OF FeAl_2O_4 SPINEL OBTAINED BY SOLID-STATE REACTION METHOD
Abdelfateh BENMAKHOUL Salah DAOUD Nadhira BIOUD Mohammed OULEDALI	University Mohamed El Bachir El Ibrahimi of Bordj Bou Arreridj University of Ahmed Draia National Polytechnic School Oran	MECHANICAL PROPERTIES OF CUBIC MgCa INTERMETALLIC COMPOUND UNDER HIGH COMPRESSION UP TO 7 GPa: DFT APPROACH

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DATE	TIME	SESSION
• 03.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-5 • SESSION-4

HEAD OF SESSION: Prof. Asoc. Kristaq Gjyli		
Lisanatun Kasanah Zahra Indari Umayah Alreiska Roudlotul Hikmah	Universitas Islam Balitar Universitas Pattimura	THE DYNAMICS OF EXPECTATIONS AND REALITIES IN THE IMPLEMENTATION OF GREEN FINANCE IN INDONESIA'S TRANSITION TO INDUSTRY 5.0: A SYSTEMATIC LITERATURE REVIEW
Kalpana Dr. Jayasree Krishnan	VELS Institute of Science, Technology and Advanced Studies (VISTAS)	THE PSYCHOLOGY OF IMPULSIVE BUYING BEHAVIOR ON E-PLATFORM
Idris B. ALLINSON Temilade A. OLATUNJI	Federal Polytechnic	HARVESTING URBAN WISDOM: A POLICY BLUEPRINT FOR SUSTAINABLE NIGERIA INSPIRED BY LATIN AMERICA'S TALES AND ECOLOGICAL ECHOES
Nazmin Naher Nipa Zahiduzzaman Zahid	University of Dhaka University of the Cumberlands	A FEDERATED LEARNING-BASED PRIVACY-PRESERVING FRAMEWORK FOR DISASTER VICTIM IDENTIFICATION AND REAL-TIME SHARIAH-COMPLIANT ZAKAT AND WAQF FUND ALLOCATION
Sadiq, Mohammed Sanusi Singh, Invinder Paul Ahmad, Muhammad Makarfi Sani, Bashir Sanyinna	FUD SKRAU BUK,	THE IMPACT OF GEOPOLITICAL TENSIONS ON BLUE ECONOMY SUPPLY CHAINS: A COMPARATIVE ANALYSIS OF MAJOR TRADE BLOCS
Prof. Asoc. Kristaq Gjyli	University of Tirana	FINANCIAL REGULATION AND CORPORATE GOVERNANCE IN THE CONTEXT OF THE BRUSSELS EFFECT
Heno Merlin C P S Dr. Jayasree Krishnan	Vels Institute of Science Technology and Advanced Studies (VISTAS)	SENTIMENT AND SEPARATION: A DATA-DRIVEN FRAMEWORK FOR TURNOVER ANALYSIS USING NLP
Ms Santha Sorubini P Dr. Jayasree Krishnan	Vels Institute of Science, Technology and Advanced Studies	FROM CLINICS TO CLOSETS: APPLYING MEDICAL NLP AND GENERATIVE AI INNOVATIONS TO FAST FASHION AND GEN Z ENGAGEMENT
Zerarka Mohamed Wail	Université de Biskra	FAIRNESS IN AI RECOMMENDER SYSTEMS: ENSURING UNBIASED RECOMMENDATIONS

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DATE	TIME	SESSION
• 03.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-6 • SESSION-4

HEAD OF SESSION: Prof. Dr. Laila AFIA

Mohamed EL MORSY Prof. Dr. Laila AFIA	Ibnou Zohr University	TOWARDS CIRCULAR MANAGEMENT OF INDUSTRIAL SALINE EFFLUENTS: VALORIZATION OF SODIUM FROM NaOH AND NaCl SOURCES
CHERIF Lamia MAHROUG Hanane	University Centre of Maghnia Abou Bekr Belkaid University	STUDY OF THE PHYSICO-CHEMICAL AND BACTERIOLOGICAL QUALITY OF GROUNDWATER: CASE OF THE GHAZAOUET REGION (TLEMCEEN PROVINCE)
Mohamed EL MORSY Prof. Dr. Laila AFIA	Ibnou Zohr University	BIOPLASTIC PRODUCTION FROM ACID WHEY: A SUSTAINABLE APPROACH FOR THE DAIRY SECTOR
Aqsa Kanwal Mujahad Abbas Abid Mahmood Nasir Rasool	Government College University	TITANIUM-MEDIATED SYNTHESIS AND Pd-CATALYZED DERIVATIZATION OF THIOPHENE CARBOXYLATES: ANTIBACTERIAL EVALUATION AGAINST NDM-β LACTAMASE-PRODUCING KLEBSIELLA PNEUMONIAE (ST147)
Shubham Sharma Prof. Sunil Gupta	Mangalayatan University,	OPTIMIZING PLANT SYNERGY IN HERBAL GEL: FORMULATION AND EVALUATION FOR ANTIFUNGAL ACTIVITY
Anita Pandey Dr. Sophiya Ambrela	Kirodimal Govt. Arts and Science College	A REVIEW OF MALARIA EPIDEMIOLOGY IN CHHATTISGARH
Palanisamy A Deepak S Ravi C.	Bharath institute of higher education and research	DRUG-INDUCED CARDIOTOXICITY: MECHANISMS, DETECTION, PHARMACOGENOMIC INSIGHTS, AND EMERGING THERAPEUTIC STRATEGIES"

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DATE	TIME	SESSION
• 04.12.2025	• 09⁰⁰–11⁰⁰ • Türkiye Time	• HALL-1 • SESSION-1

HEAD OF SESSION: Prof. Dr. Fatih SEYİS

Melike KARAGÜN Asst. Prof. Dr. Alper YORULMAZ	Aydın Adnan Menderes University	THE IMPACT OF CLIMATE CHANGE ON LAND EVALUATION STUDIES IN SOME COTTON- GROWING AREAS IN AYDIN PROVINCE
Research Assistant Dr. Haydar KÜPLEMEZ Prof. Dr. Fatih SEYİS	Recep Tayyip Erdoğan University	SECONDARY VOLATILE METABOLITE COMPOSITION OF Polygonum bistorta COLLECTED FROM RİZE
Research Assistant Dr. Haydar KÜPLEMEZ Prof. Dr. Fatih SEYİS	Recep Tayyip Erdoğan University	SECONDARY VOLATILE METABOLITE COMPOSITION OF DIFFERENT PLANT PARTS OF Rhododendron luteum
Murat GÜVEN Dilek DOĞAN AKDAĞ	Iğdır University	KANOLA (Brassica napus L.) BİTKİSİNDE VERİM KAYBINA YOL AÇAN BÖCEK ZARARLILARININ İNCELENMESİ
Murat GÜVEN Nagihan KILIÇ	Iğdır University	ASPIR (Carthamus tinctorius L.) TARIMINDA KARŞILAŞILAN BAŞLICA ENTOMOLOJİK ZARARLILAR
Burcu Hecan Assoc. Prof. Dr. Yakup Onur KOCA Prof. Dr. Osman EREKUL	Aydın Adnan Menderes University	CONCEPTUAL FRAMEWORK, STRATEGIC IMPORTANCE AND CURRENT APPROACHES OF AGRICULTURE IN TURKEY
Burcu Hecan Assoc. Prof. Dr. Yakup Onur KOCA Prof. Dr. Osman EREKUL	Aydın Adnan Menderes University	THE STRUCTURAL ANALYSIS OF FIELD CROP PRODUCTION SYSTEMS IN TURKEY IS AN INVESTIGATION INTO THE CLIMATIC FACTORS, WATER RESOURCES, SOIL CHARACTERISTICS AND INPUT FACTORS
Assoc. Prof. Dr. Esra KAYA Prof. Dr. Tugay AYAŞAN Assoc. Prof. Dr. Behlül SEVİM	Ağrı İbrahim Çeçen University Osmaniye Korkut Ata University Aksaray University	USE OF PLANTAIN (PLANTAGO SPP.) IN POULTRY NUTRITION: EFFECTS ON BROILER AND LAYING CHICKENS
Assoc. Prof. Dr. Esra KAYA Prof. Dr. Tugay AYAŞAN Assoc. Prof. Dr. Behlül SEVİM	Ağrı İbrahim Çeçen University Osmaniye Korkut Ata University Aksaray University	USE OF TURNIP (BRASSICA RAPA) IN RUMINANT AND POULTRY NUTRITION

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DATE	TIME	SESSION
• 04.12.2025	• 09⁰⁰–11⁰⁰ • Türkiye Time	• HALL-2 • SESSION-1

HEAD OF SESSION:		
Prof. Dr. Abdussamet ARSLAN Ayşe İŞGÖR Lec. Dr. Hüseyin KALKAN	Gazi University	IMPROVEMENT OF LOW STRENGTH BEAMS WITH FERROCEMENT
Asst. Prof. Dr. Berna AKSOY Res. Asst. Dr. Dilek Cansu BOZACIOĞLU	Zonguldak Bülent Ecevit University	MODELLING FLOOD SPREAD USING HEC-RAS and ASSESSING CRITICAL INFRASTRUCTURE INTERACTIONS IN A POTENTIAL KOZLU DAM FAILURE SCENARIO
Sabire MAYDA Asst. Prof. Dr. Ahmet İhsan TURAN	Erzincan Binali Yıldırım University	EXPERIMENTAL INVESTIGATION OF STRESS- STRAIN BEHAVIOR OF CONCRETES PRODUCED WITH NATURAL PERLITE AGGREGATE
Ender Zümre Muneeb Jadallah Muhammed ŞAHİN Prof. Dr. Adem Doğangün	Bursa Uludağ University	SEISMIC PERFORMANCE OF AN EIGHT-STORY RC BUILDING UNDER SEQUENTIAL EARTHQUAKES: A CASE STUDY FROM THE 2023 MALATYA EVENTS
Asst. Prof. Dr. Atila DEMİRÖZ Ramazan ÇİVİCİ Asst. Prof. Dr. Mustafa ONÜÇYILDIZ	Konya Technical University	STUDY AND EVALUATION OF THE GEOTECHNICAL PROPERTIES OF RED MUD WASTE
Sena DUMLUPINAR KUZ Assoc. Prof. Dr. Kunter MANİSA	Yıldız Technical University	INVESTIGATION OF THE BARRIER EFFECT OF TRANSPORTATION NETWORKS ON WILDLIFE- PRIORITY NATURAL AREAS

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	DATE	• 04.12.2025		TIME	• 09⁰⁰–11⁰⁰ • Türkiye Time		SESSION	• HALL-3 • SESSION-1

HEAD OF SESSION: Prof. Dr. Eti AKYÜZ LEVİ		
Res. Asst. Gülçin GÜNDÜZ	Toros University	SUSTAINABLE SPATIAL APPROACHES IN COASTAL CITIES: THE EXAMPLE OF MERSİN
Res. Asst. Gülçin GÜNDÜZ	Toros University	THE IMPACT OF TECHNOLOGICAL TRANSFORMATION ON URBAN FURNITURE DESIGN: THE CASE OF MERSİN COASTAL STRIP
F. Büşra KIZILDAĞ Asst. Prof. Dr. Kübra Güllü	Hasan Kalyoncu University	AN ANALYSIS OF THE INTERIOR SPACES OF THE RENOVATED GAZİANTEP HOUSES IN TERMS OF SUSTAINABLE DESIGN PRINCIPLES
Şeyda YILMAZ Prof. Dr. Eti AKYÜZ LEVİ	Dokuz Eylül University	DETERMINING THE TYPOLOGY OF “SHELL, LATENT AND PARTIAL SHELL” OF PALIMPSESTS HISTORICAL SETTLEMENTS THROUGH VALUE ANALYSIS
Lec. Nilüfer SUNGUR	Sakarya University of Applied Sciences	A STUDY ON OCCUPATIONAL HEALTH AND SAFETY RISKS IN ARCHITECTURAL RESTORATION WORKS
Tuka MOSHAWIH Asst. Prof. Dr. Azadeh REZAFAR	Istanbul Arel University	POSITIVE IMPACTS AND ADVANTAGES OF DOUBLE-SKIN FACADES

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DATE	TIME	SESSION
• 04.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-4 • SESSION-1

HEAD OF SESSION: Dr. Fahima NABI

Antara Humaira Tanny Faisal Ahmed Md. Sabbir Hossain Md. Najmus Sakib K. M Mozaffor Hossain	University of Rajshahi	PREVALENCE AND ANTIBIOTIC RESISTANCE DYNAMICS OF Escherichia coli ISOLATED FROM CHICKEN EGGS
Dr. Fahima NABI Dr. Meriem CHEBAANI	Université Dr Yahia Farès de Médéa Ecole Normale Supérieure Cheikh Mohamed El-Bachir El- Ibrahimi	SEED-BASED STRATEGIES TO BOOST LEGUME GERMINATION AND GROWTH UNDER DROUGHT CONDITIONS
Dr. Meriem CHEBAANI Dr. Fahima NABI Dr. Habib MOUISSA	Ecole Normale Supérieure Cheikh Mohamed El-Bachir El- Ibrahimi Université Dr Yahia Farès de Médéa Université Ziane Achour Djelfa	GERMINATION RESPONSE OF LOCAL ALGERIAN LEGUMES TO DROUGHT STRESS
Gimba U. N. Khadijah, T. A. Ahmed A.	Ibrahim Badamasi Babangida University National Open University of Nigeria	PREVALENCE OF ONCHOCERCIASIS INFECTION AMONG RESIDENTS OF SELECTED RURAL COMMUNITIES IN BWARI AREA COUNCIL ATTENDING GENERAL HOSPITAL BWARI
Gimba U. N. Khadijah, T. A. Ahmed A.	Ibrahim Badamasi Babangida University National Open University of Nigeria	INCIDENCES OF HELICOBACTER PLYORI INFECTIONS IN SECONDARY SCHOOL STUDENTS ATTENDING SOME SELECTED HEALTH CARE FACILITIES IN ABUJA MUNICIPAL AREA COUNCIL, (AMAC) FEDERAL CAPITAL TERRITORY, ABUJA
Md. Rokunuzzaman	University of Chittagong	MORPHO-TAXONOMIC ACCOUNT AND HABITAT OF HERMIT CRABS (CRUSTACEA: DECAPODA) ALONG THE CHATTOGRAM-COX'S BAZAR COAST
Hafsah Abdulrahman Palmah M. Nyadar	University of Abuja	PRELIMINARY COMPUTATIONAL ANALYSIS OF IAP GENE INHIBITORS AND ssDNA DESIGN FOR DNAi-BASED CONTROL OF L. dispar and D. melanogaster
Habiba, U. Talukdar, A. Huq, K. A. Nima, A.	Khulna University	INDUCED BREEDING, LARVAL DEVELOPMENT AND FECUNDITY STUDY OF FRESHWATER GARFISH Xenentodon cancila (HAMILTON, 1822)

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DATE	TIME	SESSION
• 04.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-5 • SESSION-1

HEAD OF SESSION:		
El.Majdi S. Zerraf Fouad Alloun Said Belaouad	Hassan II University of Casablanca Mohammed V University in Rabat	SYNTHESIS, STRUCTURAL CHARACTERIZATION, DFT INVESTIGATION, AND HIRSHFELD SURFACE ANALYSIS OF $\text{Na}_{0.5}\text{M}_{0.25}\text{Ti}_2(\text{PO}_4)_3$ (M = Zn, Ni)
Hanane Mahroug Lamia Cherif Soraya Belkaid	University centre of Maghnia Tlemcen University	REMOVAL OF ACID BLUE 113 TEXTILE DYE FROM SYNTHETIC AQUEOUS SOLUTION BY ADSORPTION AND FLOCCULATION PROCESS USING CATIONIC COPOLYMER
Arooj Anwar Zumaira Siddique Fozia Anjum	Govt. College University	EXTRACTION, MODIFICATION AND CHARACTERIZATION OF BIOPOLYMERS NATIVE TO AVOCADO SEEDS
Halimatu Ibrahim Dr. Ahmed Lawal Mashi, PhD Dr. Aminu Musa, PhD Magaji Ilu Barde	Umaru Musa Yar'adua University	TWO STAGE TRANSESTERIFICATION REACTION TOWARDS THE PRODUCTION OF BIOLUBRICANT FROM WASTE COOKING OIL
Ahmed Attahiru Bashar Attahiru Ahmed Musa Ahmed	Kebbi State University of Science and Technology Federal College of Education (Technical)	MARINE NATURAL PRODUCTS AS PROMISING YET UNDERUTILIZED SOURCES OF NOVEL THERAPEUTICS
Ahmed Attahiru Bashar Attahiru Ahmed Musa Ahmed	Kebbi State University of Science and Technology Federal College of Education (Technical)	AGRICULTURAL WASTE DERIVED BIOPOLYMERS: A SUSTAINABLE ALTERNATIVE TO CONVENTIONAL PLASTICS
Dr. Chandrama Sarkar	Pandit Deendayal Upadhyaya Adarsha Mahavidyalaya	POLYANILINE-REDUCED GRAPHENE-OXIDE COMPOSITES AND THEIR ELECTROCHEMICAL APPLICATIONS
Zahoor Ahmad Furqana Bibi	University of Engineering and Technology	FABRICATION OF Zr-MOF LOADED POLYMER MEMBRANE AND ITS POTENTIAL APPLICATION FOR GAS SEPARATION

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DATE	TIME	SESSION
• 04.12.2025	• 09⁰⁰–11⁰⁰ • Turkiye Time	• HALL-6 • SESSION-1

HEAD OF SESSION:		
Md. Shaide Anshuman Prasad Harijan Abhi Barman Sandeepan Saha Dr. Sumit Kumar Biswas	Jadavpur University	COMPARISON OF SOAKED AND UNSOAKED CBR VALUES OF MOORUM OVERLAY OVER CLAY SUBGRADE
Saptarshi Das Dr. Naveen. B. P	NITTTR Kolkata	EVOLUTION OF WIND LOAD PROVISIONS FOR URBAN AREA LIKE KOLKATA METROPOLITAN CITY IN IS 875 (PART 3): A COMPARATIVE PERSPECTIVE FROM 1987 TO 2015
Md Naimul Haque Md Mahmudul Hasan Shiam Arafat Bin Azhar Md Abir Ahmed Shaikh Zamiul Ahmed	East West University	AN EXPERIMENTAL INVESTIGATION FOR FLEXURAL STRENGTHENING OF RC BEAM USING EXTERNALLY UNBONDED MILD STEEL FLAT BAR
Sadman Abid Ariyan	Military Institute of Science and Technology	RAINWATER HARVESTING POTENTIAL IN DHAKA METRO STATIONS: A CASE STUDY FOR NON POTABLE WATER SUPPLY AT MIRPUR 10 STATION DHAKA, BANGLADESH
Aliyu Hassan	Air Force Institute of Technology	URBAN REGENERATION STRATEGIES FOR THE REVITALIZATION OF TUDUN NUPAWA COMMUNITY IN KADUNA, NIGERIA
AYMEN BAMAAROUF	University Hassann 2	INTELLIGENT CONTROL OF ENERGY SHARING IN WIND BASED MICROGRIDS

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DATE	TIME	SESSION
• 04.12.2025	• 11³⁰–13³⁰ • Türkiye Time	• HALL-1 • SESSION-2

HEAD OF SESSION: Prof. Dr. Ertan YILDIRIM

Asst. Prof. Dr. Bekir CENGİL	Cankiri Karatekin University	OCCUPATIONAL HEALTH AND SAFETY IN AGRICULTURE: STANDARDS AND PRACTICES
Prof. Dr. Ertan YILDIRIM Prof. Dr. Metin TURAN Prof. Dr. Melek EKİNCİ Prof. Dr. Selda ORS CİRİK Prof. Dr. Murat AYDIN Asst. Prof. Dr. Esmâ YİĞİDER	Atatürk University Yeditepe University	EFFECTS OF WATER DEFICIT AND METHIONINE TREATMENT ON MINERAL CONTENT IN EGGPLANT LEAVES AND ROOTS
Prof. Dr. Melek EKİNCİ Prof. Dr. Selda ORS CİRİK Prof. Dr. Ertan YILDIRIM Prof. Dr. Tamer AKAN Prof. Dr. Murat AYDIN Asst. Prof. Dr. Esmâ YİĞİDER	Atatürk University Eskişehir Osmangazi University	EFFECTS OF COLD PLASMA TREATMENT ON LETTUCE SEED GERMINATION UNDER SALT STRESS
Prof. Dr. Melek EKİNCİ Prof. Dr. Metin TURAN Prof. Dr. Selda ORS CİRİK Prof. Dr. Murat AYDIN Asst. Prof. Dr. Esmâ YİĞİDER Prof. Dr. Ertan YILDIRIM	Atatürk University Yeditepe University	INVESTIGATION OF THE ANTI-STRESS ROLE OF IODINE IN <i>Eruca sativa</i> AT THE MINERAL SUBSTANCE AND PHYTOHORMONE LEVELS
Asst. Prof. Dr. Bekir CENGİL	Cankiri Karatekin University	SOCIO-ECONOMIC EVALUATION OF AGRICULTURAL ACTIVITIES IN TÜRKİYE: CANKIRI KIZILIRMAK EXAMPLE
Asst. Prof. Dr. Esmâ YİĞİDER Prof. Dr. Metin TURAN Prof. Dr. Melek EKİNCİ Prof. Dr. Selda ORS CİRİK Prof. Dr. Ertan YILDIRIM Prof. Dr. Murat AYDIN	Atatürk University Yeditepe University	ROLE OF EXOGENOUS IODINE IN PLANT GROWTH PROMOTION AND STRESS TOLERANCE IN GARDEN CRESS PLANT (<i>Lepidium sativum</i> L.) UNDER SALT STRESS
Asst. Prof. Dr. Esmâ YİĞİDER Prof. Dr. Metin TURAN Prof. Dr. Selda ORS CİRİK Prof. Dr. Melek EKİNCİ Prof. Dr. Murat AYDIN Prof. Dr. Ertan YILDIRIM	Atatürk University Yeditepe University	REORGANIZATION OF PHYTOHORMONE AND MINERAL PROFILE IN SALT-STRESSED <i>Lepidium sativum</i> BY IODINE
Prof. Dr. Murat AYDIN Prof. Dr. Metin TURAN Prof. Dr. Melek EKİNCİ Prof. Dr. Selda ORS CİRİK Asst. Prof. Dr. Esmâ YİĞİDER Prof. Dr. Ertan YILDIRIM	Atatürk University Yeditepe University	REGULATORY EFFECTS OF EXOGENOUS METHIONINE ON MINERAL AND ORGANIC ACID METABOLISM IN PEPPER SEEDLINGS UNDER DROUGHT STRESS

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HEAD OF SESSION: Asst. Prof. Dr. Emre KİŞİ		
Süleyman YURT Asst. Prof. Dr. Oğuz ERDEM	Kırıkkale University	THE RUPTURE DISCS USED IN INDUSTRIAL PRESSURE SYSTEMS
Asst. Prof. Dr. Vildan ÖZKAN Abdulhamid SARAÇOĞLU	İskenderun Technical University	MECHANICAL STRENGTH OF BIO-BASED COMPOSITE MATERIALS
Recep KARA Assoc. Prof. Dr. Selim HARTOMACIOĞLU	Marmara University	IMPLEMENTATION OF THE REPRESENTATIVE VOLUME ELEMENT (RVE) MODEL FOR MATERIALS MANUFACTURED USING THE FDM METHOD
Mustafa Kutay YILDIRIM Assoc. Prof. Dr. Selim HARTOMACIOĞLU	Marmara University	OPTIMIZATION AND STRUCTURAL VERIFICATION OF A COUPLING USING GENERATIVE DESIGN
Tuncay Çağrı ORAK Fatih ŞEN Atamer AKBAY Prof. Dr. Fatih ÇALIŞKAN	Çanakcılar Ceramic Industry and Trade Inc. Sakarya University of Applied Sciences	FORM-FITTING PACKAGING DESIGN FOR SANITARY CERAMIC PRODUCTS
Emine GUVEN Assoc. Prof. Dr. Nazmiye GONUL BILGIN	Zonguldak Bülent Ecevit University	CONVERGENCE ANALYSIS AND ERROR ESTIMATES FOR AN AGRATINI-TYPE OPERATOR
Asst. Prof. Dr. Emre KİŞİ	Sakarya University	TRIPOTENCY OF LINEAR COMBINATIONS OF THREE INVOLUTORY AND ONE TRIPOTENT MATRIX THAT MUTUALLY COMMUTE

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DATE	TIME	SESSION
• 04.12.2025	• 11³⁰–13³⁰ • Türkiye Time	• HALL-3 • SESSION-2

HEAD OF SESSION: Prof. Dr. Elif DOĞAN

Assoc. Prof. Dr. Elif ERGÜL Res. Asst. Yusuf HOPAÇ	Recep Tayyip Erdoğan University	TRAUMATIC VENTRICULAR SEPTAL RUPTURE AFTER BLUNT CHEST TRAUMA: A CASE REPORT
Dima DVAIDAR Fatmanur TURGUT Cüneyd YAVAŞ Asmaa ABUAISHA Emir NEKAY Serdar BOZLAK	Biruni University Çam Sakura City Hospital	HOMOZYGOUS c.256C>T p.(Arg86Cys) MUTATION IN THE ASS1 GENE: A CASE REPORT OF CITRULLINEMIA TYPE I
Yusuf ÇAVDAR Asst. Prof. Dr. Turan KOÇ	Kahramanmaraş Sütçü İmam University	DOES NAVICULAR BONE MORPHOMETRY DETERMINE MEDIAL FOOT ARCH? A RADIOLOGICAL ASSESSMENT
Assoc. Prof. Dr. Elif ERGÜL Res. Asst. Yusuf HOPAÇ	Recep Tayyip Erdoğan University	ACUTE CORONARY SYNDROME DUE TO RIGHT CORONARY ARTERY ANOMALY ORIGINATING FROM THE LEFT MAIN CORONARY ARTERY: A RARE CASE
Shalala Ismayilova Aytan Mammadzada Vafa Mammadova Samira Muradova Asmatkhanim Guliyeva Narinc Ibrahimova Leyla Safaraliyeva	Azerbaijan Medical University	EMPAGLIFLOSIIN IMPROVES FMD IN CKD: MODULATION BY THE 786T>C POLYMORPHISM OF eNOS
Gizem AKÇİL Assoc. Prof. Dr. Sedat PER	Yozgat Bozok University Kayseri University	HORMETIC EFFECT OF METFORMIN ON THE EXPERIMENTAL EPILEPSY MODEL
Prof. Dr. Elif DOĞAN Asst. Prof. Dr. Candemir ÖZCAN Asst. Prof. Dr. Ayşe Başak DELLALBAŞI Asst. Prof. Dr. Tarık ŞAFAK Berrak Işık SOYTÜRK	Kastamonu University	A CASE of ATRESIA ANI WITH VULVA DEFORMITY in A ONE-DAY-OLD CALF
Asst. Prof. Dr. Esra Tuğçe GÜL Prof. Dr. Yusuf CUFADAR	Selçuk University	EFFECT OF DIETARY ADDITION OF CHEESE POWDER ON PERFORMANCE AND EGG QUALITY IN LAYING QUAILS

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DATE	TIME	SESSION
• 04.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-4 • SESSION-2

HEAD OF SESSION:		
Putri Amanda Sitepu Titin Sulastr Marvel Reuben Suwitonono	Universitas Advent Indonesia	DETERMINATION OF QUERCETIN CONTENT IN DANDELION (TARAXACUM OFFICINALE) ROOT BY DIFFERENT EXTRACTION METHOD USING HPLC ANALYSIS
VELVIZHI.V DR. LAVANYA BABU Dr. R. DEVI S.VARSHA S.KAMALI E.HAMSINI EISHA Dr.R. SRINIVASAN	Bharath Institute of Higher Education and Research	FDDS IN HELICOBACTER PYLORI INFECTION THERAPY – AN OVERVIEW
Huma Ikram Rumaisa Zakir Shahla Perveen Darakhshan J. Haleem	University of Karachi	INVESTIGATING THE NEUROPROTECTIVE EFFECTS OF CURCUMIN IN MITIGATING SCOPOLAMINE-INDUCED DEMENTIA
R. Devadharshini Meenatchi.S Gomathy .E Dr.W.Helen	Bharath institute of higher education and research	MEDICINE RESEARCH AND INNOVATION
Md. Shahria Islam Mahsura Alam Ethila A B M Ashraful	R. P. Shaha University	MULTI-ANALYTICAL ELUCIDATION OF BIOACTIVE METABOLITES AND ANTIOXIDANT CAPACITY IN ATALANTIA SIMPLICIFOLIA LEAF EXTRACT
Mst. Bobby Aktar Bithy Nazlatun Nayma Failin Akter	Manarat International University	A REVIEW: TOXICOLOGICAL IMPLICATIONS AND POSSIBLE SOLUTIONS OF NANOPARTICLES
Diksha Rahmuddin Khan Zeenat Iqbal Dr. Aamir Mirza.	SPER	“INTEGRATIVE AI-NANOTECHNOLOGY FOR THE TARGETED AMELIORATION OF CERVICAL CANCER PROGRESSION”
David.G Deepak.S Palanisamy.A Ravi.C N Jayaramakani Dr.R.Srinivasan	Bharath Institute of Higher Education and Research	QUANTUM DOT-ENABLED PRECISION THERANOSTICS FOR EARLY-STAGE DISEASE DETECTION

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DATE	TIME	SESSION
• 04.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-5 • SESSION-2

HEAD OF SESSION: Assos.prof. Adila Mahmudova

Mst Sabiha Nusrat	Texas Tech University	HIGH-PRECISION SONOGENETIC CONTROL OF ENGINEERED BACTERIA FOR SPATIOTEMPORAL CANCER IMMUNOTHERAPY
IBRAHIM, BABA USMAN BALOGU, DENNIS ODIONYENFE	IBRAHIM BADAMASI BABANGIDA UNIVERSITY	ASSESSMENT OF THE FISHERIES OF RIVER KATCHA AND LAPAI – AGAIE RESERVOIR, NIGER STATE. NIGERIA
IBRAHIM, BABA USMAN BALOGU, DENNIS ODIONYENFE	IBRAHIM BADAMASI BABANGIDA UNIVERSITY	SPECIES DIVERSITY OF EARTHWORMS IN SOME SELECTED AREAS OF NIGER STATE, NIGERIA
IBRAHIM, BABA USMAN BALOGU, DENNIS ODIONYENFE	IBRAHIM BADAMASI BABANGIDA UNIVERSITY	GILLS AND GASTROINTESTINAL PARASITES OF SYNODONTIS SCHALL IN LAPAI - AGAIE RESERVOIR, NIGER STATE, NIGERIA
Assos.prof. Adila Mahmudova Gulnar Mammadova	Azerbaijan State Pedagogical University	SYNTHESIS AND CONVERSIONS OF 2-HYDROXY-1-HALOIPHENOXY ESTERS OF DECANOL-2
Dr. Muhammad Mazhar Iqbal Labeeqa Zaheer Dr. Muhammad Bilal Dr. Mujahid Ali	West Africa Blue Water Management Research Farm	DEEP LEARNING APPROACH FOR MONITORING BLUE FRONTIER MANGROVE FORESTS ACROSS AUSTRALIA USING SENTINEL-2 IMAGERY
Atikur Rahman Kamrun Nahar Nishat Dr. Md. Rakeb-UI Islam	Noakhali Science and Technology University	NUTRITIONAL AND MICROBIAL ASSESSMENT OF TRADITIONAL SEMI-FERMENTED FISHERIES PRODUCTS
Dr. K. VIGNESH	Palar Agricultural College	PATHOGEN POPULATION GENOMICS UNDER FUNGICIDE PRESSURE

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DATE	TIME	SESSION
• 04.12.2025	• 11³⁰–13³⁰ • Turkiye Time	• HALL-6 • SESSION-2

HEAD OF SESSION:		
Sorina Corman	Lucian Blaga University of Sibiu	THE DYNAMICS OF INSTITUTIONAL ADJUSTMENT IN LATER LIFE: A MULTIDIMENSIONAL ANALYSIS OF IDENTITY, AUTONOMY AND SOCIAL INTEGRATION
Ebrahim Mohammed Ahmed Professor Gurudutta P. Japee	Gujarat University	THE ROLE OF ARTIFICIAL INTELLIGENCE IN ENHANCING RESEARCH QUALITY ACROSS ACADEMIC DISCIPLINES
Adenike Mercy Ajayi	The Federal Polytechnic	REWRITING THE FEMININE: THE IMPACT OF SOCIAL MEDIA ON THE REPRESENTATION OF WOMEN IN CONTEMPORARY NIGERIAN FICTION
Naiya Dr. Jitender Kumar Dr. Seema Rathee Khanak (Research Scholar) Chanpreet (Research Scholar)	IMSAR, MDU	GENDER-INCLUSIVE WORKPLACES AND THEIR EFFECT ON PRODUCTIVITY: A REVIEW-BASED ANALYSIS
Mulikat FolaShade Usman	Usmanu Danfodiyo University	THE EFFECT OF GENDER ON ENTREPRENEURIAL SKILLS IN SOKOTO METROPOLIS
Najia Mohammadi	Ahlul-Bayt International University Tehran	THE ROLE OF WOMEN IN DEVELOPING AND IMPLEMENTING CLIMATE CHANGE ADAPTATION TECHNOLOGIES: A MULTI-LEVEL ANALYSIS
Md. Azizul Haque	University of Rajshahi	HEATWAVES AND STUDENT'S HEALTH: IMPACTS AND ADAPTATION STRATEGIES
Mithu Talukder Sujan Bala Chayan Biswas Sukanta Bala Suman Bala	University of Rajshahi	TEENAGE PREGNANCY IN RURAL BANGLADESH: A QUALITATIVE STUDY ON ITS ROOT CAUSES AND IMPACTS

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HEAD OF SESSION: Assoc. Prof. Dr. Perihan TÜZÜN

Asst. Prof. Dr. Erkam Emin AYVAZ	Erciyes University	THE IMPACT OF AIR TRANSPORT, TOURISM, AND URBANIZATION ON ECONOMIC GROWTH: THE CASE OF TÜRKİYE
Lec. Hakan ATEŞ Asst. Prof. Dr. Fatih AKIN	Ataşehir Adıgüzel Vocational School Erzincan Binali Yıldırım University	AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN ECONOMIC GROWTH, CAPITAL ACCUMULATION, R&D EXPENDITURES AND HUMAN CAPITAL IN TÜRKİYE
Asst. Prof. Dr. Hilal OK ERGÜN Assoc. Prof. Dr. Tolga ERGÜN	Trabzon University	FINANCIAL PERFORMANCE ANALYSIS WITH MAIRCA AND MARCOS METHODS: INFORMATION AND SOFTWARE SECTOR IN TURKEY
ASSOC. PROF. DR. ÖZLEM NİLÜFER KARATAŞ ARACI	Burdur Mehmet Akif Ersoy University	SUSTAINABILITY ASSURANCE IN TURKEY: AN EXAMINATION WITHIN THE FRAMEWORK OF THE SUSTAINABILITY ASSURANCE ENGAGEMENT STANDARD
Assoc. Prof. Dr. Perihan TÜZÜN Prof. Dr. Nurdan KUŞAT	Isparta University of Applied Sciences	EMPLOYMENT ABILITY OF THE TURKISH SERVICE SECTOR: EXAMPLE OF FINANCE AND INSURANCE ACTIVITIES
Semih EREN Asst. Prof. Dr. Mehmet Mert TÜRK	Tokat Gaziosmanpaşa University	MORTGAGE INTEREST RATES AND HOUSING MARKET INDICATORS IN TÜRKİYE (2013–2025)
Asst. Prof. Dr. Gülşah ADAM	Kütahya Dumlupınar University	SUBSTITUTION BIAS ACROSS INCOME GROUPS: EVIDENCE FROM ARGENTINA'S CONSUMER PRICE INDEX
Assoc. Prof. Dr. Fatih ÇİMEN	Manisa Celal Bayar University	A GENERAL OVERVIEW OF HADITH METHODOLOGY STUDIES DURING THE MAMLUK ERA

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 DATE	• 04.12.2025	 TIME	• 14⁰⁰–16⁰⁰ • Türkiye Time	 SESSION	• HALL-2 • SESSION-3

HEAD OF SESSION: Assoc. Prof. Dr. Hayriye ŞENTÜRK ÇİFTÇİ

Assoc. Prof. Dr. Hayriye ŞENTÜRK ÇİFTÇİ	İstanbul University	A BIOINFORMATIC APPROACH TO THE ROLE OF TUMOR NECROSIS FACTOR IN THE PATHOGENESIS OF AUTOIMMUNE DISEASES
Maimun MOHAMED Associate Professor Sümeyra SAVAŞ	Bandırma Onyedİ Eylöl University	DEVELOPMENT OF A GOLD NANOPARTICLE-BASED LATERAL FLOW TEST FOR RAPID DETECTION OF VIBRIO CHOLERA SPECIES
Res. Asst. Dr. İlknur PORSUK DORU Asst. Prof. Dr. Sakine AKAR	Van Yüzüncü Yıl University	EFFECTS OF ESCIN ON PROLIFERATION AND MIGRATION OF SH-SY5Y NEUROBLASTOMA CELLS
Ergöl BELGE KURUTAŞ Seda İKİKARDEŞ	Kahramanmaraş Sutcu Imam University	OXIDANT/ANTIOXIDANT CAPACITY IN TAMARINDUS INDICAN (TAMARIND) FRUIT
Muhammed Erkam BEKTAŞ Asst. Prof. Dr. Özgür KEBABCI	Sivas Cumhuriyet University	OPTIMIZATION OF LIPASE PRODUCTION FROM YARROWIA LIPOLYTICA STRAIN ISOLATED FROM SPOILED LABNE CHEESE
Gizem ÖREN ÇİBIK Sümeyra SAVAŞ	Bandırma Onyedİ Eylöl University	RAPID AND SENSITIVE DETECTION OF EBOLA VIRUS USING A LABEL-FREE ELECTROCHEMICAL DNA BIOSENSOR
Kübra Ceren ALAYANAK Prof. Dr. Hüseyin POLAT	Aksaray University	EFFECT OF SODIUM PYRITHIONINE APPLIED TO RATS ON HEMATOLOGICAL PARAMETER LEVELS

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	DATE	• 04.12.2025		TIME	• 14⁰⁰–16⁰⁰ • Türkiye Time		SESSION	• HALL-3 • SESSION-3

HEAD OF SESSION: Asst. Prof. Dr. Zeynep ÖZTÜRK

Emel Yılmaz Remzi Altunışık	Sakarya Training and Research Hospital Sakarya University	AN EXPLORATIVE STUDY ON DIGITAL HEALTH LITERACY AND DIGITAL HEALTH SERVICES USAGE BEHAVIORS
Asst. Prof. Dr. Sadet KARABULUT KALKAN	Yalova University	EXAMINATION OF HERBAL SUPPLEMENT USE KNOWLEDGE LEVELS OF INDIVIDUALS OVER 60 YEARS OF AGE: THE YALOVA THERMAL EXAMPLE
Asst. Prof. Dr. Zeynep ÖZTÜRK Asst. Prof. Dr. Büşra TOSUN	Bolu Abant İzzet Baysal University	INVESTIGATION OF THE EFFECTS OF PROPOLIS AND OZONE ADDITION ON THE PHYSICAL AND MECHANICAL PROPERTIES OF MTA: AN IN VITRO STUDY
Nida LALECAN Assoc. Prof. Dr. Bihter AKINOĞLU	Ankara Yıldırım Beyazıt University	BREATHING EXERCISES IN ELDERLY NURSING HOMES: A NARRATIVE REVIEW OF THE CURRENT LITERATURE
Asst. Prof. Dr. Ali KARAAĞAÇ Lec. Rahmiye Nur AKTAN YILMAZ Lec. Başak GÖKSEL KARAAĞAÇ	İstanbul Gelişim University	EVALUATION OF POSTURE, JOINT MOVEMENT AND PROPRIOCEPTION IN INDIVIDUALS WITH AND WITHOUT CHRONIC NECK PAIN
Lec. Rahmiye Nur AKTAN YILMAZ Asst. Prof. Dr. Ali KARAAĞAÇ Lec. Başak GÖKSEL KARAAĞAÇ	İstanbul Gelişim University	REVIEW OF PEER BULLYING IN CHILDREN WITH HEARING LOSS
Dr. Elifnaz İLGAR	Health Sciences University	REINTERPRETING TRADITIONAL TURKISH ART FROM A BIOART PERSPECTIVE

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DATE	TIME	SESSION
• 04.12.2025	• 14⁰⁰–16⁰⁰ • Turkiye Time	• HALL-4 • SESSION-3

HEAD OF SESSION: Ephesus O. Fatunmbi

Md. Palash Bin Faruque Saiful Islam Md. Mostafizur Rahman Palash Mondol Md. Abdul Khalek	University of Rajshahi	MODELING AND PREDICTING THE IMPACTS OF CLIMATE VARIABILITY ON GROUNDWATER IN NORTHWEST BANGLADESH THROUGH MACHINE LEARNING APPROACHES
Nur Mohamad Md. Tanvir Hossain Bhuiyan	University of Rajshahi	A COMPREHENSIVE REVIEW ON CURRENT ADVANCEMENTS AND APPLICATIONS OF BIOINFORMATICS IN DISEASE ANALYSIS
Tamima Rahman Abu Sayed Md. Al Mamun Md. Golam Hossain	University of Rajshahi	ASSESSING HEALTH RELATED QUALITY OF LIFE AND ITS ASSOCIATION WITH CHRONIC COMORBID CONDITION AMONG DIABETIC PATIENTS IN RAJSHAHI, BANGLADESH
Ephesus O. Fatunmbi	Federal Polytechnic	SIGNIFICANCE OF NONLINEAR THERMAL RADIATION AND ACTIVATION ENERGY ON FREE-CONVECTIVE MHD NANOFLUID FLOW OVER A STRETCHING DISK
Odebiyi, O.A Agemo, D.N Ayanrinola, O.W Omoniyi, S.O Adewole, E.T Fatore, T.A	Ladoke Akintola University of Technology	INVESTIGATION OF EXISTENCE AND UNIQUENESS OF SOLUTION FOR A COVID-19 TRANSMISSION DYNAMICS MODEL USING PICARD'S METHOD
Usman Yahuza Alhaji Usman, Z.N. Umar K. G. (PhD) Hussaini, I	Niger State College of Education Minna Federal University of Technology Minna	THE LEVEL OF UTILIZATION OF VIDEO CONFERENCING PLATFORM FOR LEARNING AMONG UNDERGRADUATE STUDENTS IN NIGER STATE, NIGERIA
Ekijere Nathan Monday Dr. David Ikwuoche John Dr. Ogunmola Adeniyi Oyewole	Federal University Wukari	NONLINEAR RANDOMISED COMPLETE BLOCK DESIGN AND ANALYSIS OF SAPONINS EFFECT ON CRUDE OIL SPILL REMEDIATION.
Sathisha A B Ashwini M Rao K S Basavarajappa	Government First Grade College Bapuji Institute of Engineering and Technology	MATHEMATICAL ANALYSIS ON PHYSIOLOGICAL EFFECT OF CHRONIC OBSTRUCTIVE PULMONARY CANCER DUE TO HABIT OF SMOKING

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 DATE	• 04.12.2025	 TIME	• 14⁰⁰–16⁰⁰ • Turkiye Time	 SESSION	• HALL-5 • SESSION-3

HEAD OF SESSION: Prof. Assoc. Dr. Fatjona Kamberi

Nerta Lazi Eralba Zenelaj Jasemin Todri Orges Lena	UCAM Universidad Católica San Antonio de Murcia	CROSS-CULTURAL ADAPTATION, TRANSLATION, AND VALIDATION OF THE BERG BALANCE SCALE FOR USE IN THE ALBANIAN-SPEAKING POPULATION STUDY PROTOCOL
Ph.D(c). Saemira Durmishi Prof.Assoc. Rezarta Lalo PhD(c) Erlini Kokalla Dr. MitildaGugu	“Ismail Qemali” University “Aleksandër Xhuvani” University	THE IMPACT OF DIET IN THE LAST WEEKS OF PREGNANCY – FOODS THAT HELP FOR AN EASIER DELIVERY
Alireza Bakhtiyari Saeed Aeenehvand Arezoo Alimohammadi Fatemeh Dezhgard Rahim Azari	Tehran University of Medical Sciences Shiraz University of Medical Sciences	ANALYSIS OF ORGANOPHOSPHORUS AND CARBAMATE PESTICIDE RESIDUES IN APPLE FRUITS FROM MASHHAD, IRAN
Mihaela-Corina BUCUR	Post-Secondary School of Health Asanka Sante Medical Center Society of Victimology	THE ESSENTIAL ROLE OF NURSING DIAGNOSIS IN PATIENT-CENTERED CARE PLANNING
Arnob Dey Nil	Habiganj Agricultural University	RABIES AWARENESS AND PREVENTION EDUCATION AMONG CHILDREN UNDER 15 YEARS OF AGE IN THE ASIAN REGION: A ONE HEALTH PERSPECTIVE
Md. Jan Sadur Rahman Moon Soikot Kawria Mst. Ismat Ara Begum	University of Rajshahi	PREVALENCE AND ANTIBIOTIC RESISTANCE OF ESCHERICHIA coli, Klebsiella spp., Salmonella spp., and S. AUREUS FROM SALAD IN LOCAL FOOD VENDORS OF RAJSHAHI CITY, BANGLADESH.
Prof. Assoc. Dr. Fatjona Kamberi Msc. Elda Xhaferaj PhD student Velide Pulomemoj	University of Vlore “Ismail Qemali” Brataj Health Center University of Rome Tor Vergata	EMERGENCY-RELATED DISRUPTIONS IN CHRONIC DISEASE CARE: INSIGHTS FROM RURAL ELDERLY PATIENTS IN ALBANIA
Rajae Bouzidi Idrissi Nabila ZRIRA	Mohammed V University MINES-RABAT School	ENHANCING LUNG CANCER CLASSIFICATION THROUGH ADVANCED DATA BALANCING TECHNIQUES

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DATE	TIME	SESSION
• 04.12.2025	• 14⁰⁰–16⁰⁰ • Turkiye Time	• HALL-6 • SESSION-3

HEAD OF SESSION:		
Dr. Monika STOJANOVA Prof. Dr. Sani DEMIRI Prof. Dr. Olga POPOVSKA Prof. Dr. Arita SABRIU HAXHIJAH	Mother Teresa University	FUNCTIONAL FOODS IN THE CIRCULAR ECONOMY: SUSTAINABLE PRODUCTION WITHOUT SYNTHETIC ADDITIVES
ABDULLAHI GABI MUHAMMAD ALHASSAN GABI USMAN MOHAMMED YAKUBU MANBE RANI ABDULLAH ABUBAKAR MOHAMMED NDAYANKPA NAFISAT	Kaduna Polytechnic Ibrahim Badamasi Babangida University	PRODUCTION AND SENSORY EVALUATION OF AN ENRICHED PUDDING USING COMPOSITE FLOUR OF NORMAL FLOUR, SWEET POTATO FLOUR, MILK AND EGGS
Safura Kousar Ali Imran Usman Naeem Usama Tahir Fareeha Ijaz	Government College University The University of Lahore	CHARACTERIZATION AND DEVELOPMENT OF NOPAL CACTUS (PRICKLY PEAR) FLOUR-BASED BAKERY PRODUCTS
Abdul Waheed Atiq Ahmad	Bahauddin Zakariya University Buffalo Research Institute	LONG TERM TRENDS OF MILK PRODUCTION IN NILI-RAVI BUFFALOES ENCOMPASSING PAST FIVE DECADES
Asst. Prof. Babita Gupta	Institute of Technology and Management Gida Gorakhpur	REVOLUTIONIZING CANCER DIAGNOSIS: THE POTENTIAL OF 3D PRINTED NANOSENSORS
Bipasha Ray	Saroj International University	INNOVATIONS IN ARTIFICIAL TISSUE ENGINEERING
V.Ranjani Dr. R. Srinivasan Dr. R. Devi	Bharath Institute of Higher Education and Research	NANOTECHNOLOGY IN DRUG DELIVERY: ENHANCING THERAPEUTIC OUTCOMES

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DATE	TIME	SESSION
• 04.12.2025	• 16³⁰–18³⁰ • Türkiye Time	• HALL-1 • SESSION-4

HEAD OF SESSION: Prof. Dr. Gülbahtiyar DEMİREL

Hatice Kübra Er Asst. Prof. Dr. Hayrani Eren BOSTANCI	Sivas Cumhuriyet University	ANTICANCER ACTIVITY OF ALOE VERA
Res. Asst. Merve KURT Prof. Dr. Gülbahtiyar DEMİREL	Sivas Cumhuriyet University	THE PLACE OF ARTIFICIAL INTELLIGENCE IN NORMAL VAGINAL BIRTH
Ruveyda AYAZ Asst. Prof. Dr. Hayrani Eren BOSTANCI	Sivas Cumhuriyet University	ARTICLE REVIEWS ON MEDIA SELECTION IN CELL CULTURE APPLICATIONS
Res. Asst. Merve KURT Prof. Dr. Gülbahtiyar DEMİREL	Sivas Cumhuriyet University	THE MIDWIFE AS A MEMBER OF THE TEAM IN OBSTETRIC EMERGENCIES
Ebranur DUMAN Asst. Prof. Dr. Hayrani Eren BOSTANCI	Sivas Cumhuriyet University	THE EFFECTS OF BENZIMIDAZOLE AND ITS DERIVATIVES ON CANCER CELLS
Nurhan KORKUT Asst. Prof. Dr. Meltem AKBAŞ	Çukurova University	CRISES IN WOMEN'S LIFE CYCLE AND MIDWIFERY APPROACHES
Betül YILDIZ Asst. Prof. Dr. Hayrani Eren BOSTANCI	Sivas Cumhuriyet University	THE GUIDING ROLE OF NCCN GUIDELINES IN EVIDENCE-BASED DECISION-MAKING FOR ANTICANCER DRUG SELECTION AND MANAGEMENT, AND ITS IMPACT ON CLINICAL PHARMACY PRACTICE
Asst. Prof. Dr. Hüdaverdi ARSLAN Anıl Erdağ NOMER Sena Nur DEMİREL Prof. Dr. Nadir DİZGE Assoc. Prof. Dr. Mutlu YALVAÇ	Mersin University Uludağ University	OPTIMIZATION OF THE INDUSTRIAL TREATMENT SLUDGE USE IN VERMICOMPOST PRODUCTION
Yaden ELEKÇİ Asst. Prof. Dr. Meltem AKBAŞ	Çukurova University	CONFLICTS THAT MAY ARISE DURING PREGNANCY AND THE DECISION-MAKING PROCESS FOR THESE CONFLICTS

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	DATE • 04.12.2025		TIME • 16³⁰–18³⁰ • Türkiye Time		SESSION • HALL-2 • SESSION-4

HEAD OF SESSION: Asst. Prof. Dr. Mücahit MUSLU

Melike ORKAN Sümeyra SAVAS	Bandırma Onyedi Eylül University	LABEL-FREE ELECTROCHEMICAL DETECTION OF HELICOBACTER PYLORI USING CARBON DOT-FUNCTIONALIZED ELECTRODES
Asst. Prof. Dr. Mücahit MUSLU	Kastamonu University	COLD SHOWERS AS AN ADJUNCT APPROACH TO BODY WEIGHT MANAGEMENT: EVIDENCE ON BROWN ADIPOSE TISSUE ACTIVATION AND ENERGY EXPENDITURE
Asst. Prof. Dr. Deniz GÜR Asst. Prof. Dr. Menşure CANPOLAT Asst. Prof. Dr. Demet BİÇKİ	Atlas University Okan University Aydın University	PUBLIC PERCEPTIONS OF HEALTHCARE WORKERS DURING THE COVID-19 PANDEMIC
İftihar ÇELEBİ	Azerbaijan Technical University	COMPARATIVE RELIABILITY ANALYSIS FOR WORM GEARS
Hazal İrem GÖĞÜŞ GÜLSER Assoc. Prof. Dr. Zeynep Aslı GÜREL	Gazi University	TRANSFORMATION OF PARTICIPATION IN URBAN PLANNING THROUGH THE INDUSTRIAL REVOLUTIONS

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DATE	TIME	SESSION
• 04.12.2025	• 16³⁰–18³⁰ • Türkiye Time	• HALL-3 • SESSION-4

HEAD OF SESSION: **Lec. Yağmur ATEŞ**

Kərimova Vüsalə Ağazadə Şəfiqə Əliyeva Aylin Əfəndiyeva Ayişə Salamova Fətimə	ADPU Azerbaijan State Pedagogical College	THE "IRON FIST" EPIC
Səriyyə Abidova Elşən qızı	Quba şəhəri "Soyqırımı Memorial Kompleksi"	DÜNYA MUZEYLƏRİNDƏ İSLAMIN İZLƏRİ
Lec. Yağmur ATEŞ	İstanbul Bilgi University	NEW HORIZONS IN SUSTAINABILITY ACCOUNTING: THE TRANSFORMATION OF MEASURING, RECORDING, AND REPORTING NON-FINANCIAL INFORMATION THROUGH NATURAL LANGUAGE PROCESSING AND ARTIFICIAL INTELLIGENCE
Zeliha ARSLAN Asst. Prof. Dr. Didem SEMERCİ ARIKAN	Ordu University	AN EXAMINATION OF GRADUATE THESES ON ADAPTATION AND BEHAVIORAL PROBLEMS IN EARLY CHILDHOOD
Feride Kazımlı Elçin qızı	Azerbaijan State Pedagogical University	THE IMPACT OF GLOBALIZATION ON NATIONAL AND MORAL VALUES

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DATE	TIME	SESSION
• 04.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-4 • SESSION-4

HEAD OF SESSION:		
Md Abid Alam Nashin Saiyara Teothy Mst. Kamrun Nahar Muhammad Waresul Hassan Nipun	Rajshahi University of Engineering & Technology	PERFORMANCE EVALUATION OF BUS RAPID TRANSIT (BRT) IN DHAKA, BANGLADESH
Jannatun Nayeem Nigar Samiur Rahman Sabbir Hossain	Jahangirnagar University	ASSESSING AIR POLLUTION DYNAMICS (2018- 2024) CORRELATING WITH LAND USE TO STRENGTHEN CLIMATE RESILIENCE IN SAVAR USING GOOGLE EARTH ENGINE
Kamel BELHADJ TAHAR Abdellatif ADJODJ Mohammed missoum BENMEDDAH	University Morsli Abdellah of Tipaz University Abdelhamid Ibn Badis of Mostaganem	ASSESSMENT OF THE IMPACT OF POLLUTION AND URBAN GROWTH AT THE PORT OF TIPAZA« north of Algeria »
OLOIDI, Akintunde John OMALI, Obiageli Kay KAYODE, Chinonye Emilia	University of Nigeria	AN EVALUATION OF JOB SATISFACTION AND EFFICIENCY AMONG HOTEL WORKERS: A STUDY OF CONCORD HOTEL, OWERRI, IMO STATE
Dr. Loreta Semaškienė dr. Sinilga Černulienė	Lietuvos inžinerijos kolegija / Higher Education Institution	RARE PROTECTED WOODY PLANTS OF LITHUANIAN FORESTS
Most. Sajeda Akter Faria Islam Banani Afrin Iffat Ara Md. Anisul Kabir Akib Javed	Islamic University Institute of Water Modelling (IWM)	ASSESSMENT OF ENVIRONMENTAL KNOWLEDGE PROFILE AND AWARENESS GAPS IN KUSHTIA MUNICIPALITY, BANGLADESH
Rincy A Anila George	University of Kerala	SCRAP WASTE MANAGEMENT PRACTICES IN ATTINGAL MUNICIPALITY: A SURVEY- BASED STUDY ON DEALERS, RESIDENTS, AND MUNICIPAL AUTHORITIES

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DATE	TIME	SESSION
• 04.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-5 • SESSION-4

HEAD OF SESSION: Prof. Dr. Abdelhamid Ben El-Eid El-Moussaoui		
Dr. Ilda Muçmataj	University of Tirana	THE COLLECTIVE MANAGEMENT ORGANIZATIONS IN ALBANIA. PRESENT EXPERIENCES AND FUTURE CHALLENGES.
Md. Fahim Shahriar Paris Chakma Sampurna Chakma	University of Rajshahi University of Dhaka	CLOSING THE LEARNING DISPARITIES BETWEEN INDIGENOUS PEOPLES: INSIGHTS FROM NANIYARCHAR, CHITTAGONG HILL TRACTS, BANGLADESH.
Associate Professor Sheyla Moroni	University of Florence	'I MEDICI': AN AUDIOVISUAL DRAMA. FROM LOCAL FASCISM TO GLOBAL WESTERN STEREOTYPES.
Mr. MD AKASH ALI	University of Rajshahi	FROM EMERGENCE TO CONTESTATION: EVOLUTION-NEGOTIATION-DIFFERENTIATION OF CLIMATE NORMS IN COP1-COP29
Anjeza LIÇENJI Saimir MUÇMATAJ	University of Tirana	ELECTIONS AND DEMOCRACY: FROM PROMISES TO GOVERNANCE PRACTICES – A COMPARATIVE PERSPECTIVE BETWEEN ITALY AND ALBANIA
Prof. Dr. Abdelhamid Ben El-Eid El-Moussaoui Researcher. Zahraa Adel Hassan	Imam Al-Kadhim University	THE ROLE OF THE IRAQI MINISTRY OF FOREIGN AFFAIRS IN SHAPING FOREIGN POLICY AFTER 2003- AN ANALYTICAL STUDY
Alfiora Fortuzi Fatjon Çajupi	---	THE EVOLUTION OF PROTECTION AGAINST DISCRIMINATION IN EMPLOYMENT RELATIONS UNDER EUROPEAN UNION LEGISLATION AND CASE LAW

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DATE	TIME	SESSION
• 04.12.2025	• 16³⁰–18³⁰ • Turkiye Time	• HALL-6 • SESSION-4

HEAD OF SESSION:		
Mst. Shamima Akter Faria Islam Banani Afrin Iffat Ara Md. Anisul Kabir Akib Javed	Islamic University Institute of Water Modelling (IWM)	OCCUPATIONAL HEALTH PROBLEMS AMONG TOBACCO FARMERS ACROSS DIFFERENT STAGES OF TOBACCO CULTIVATION IN THE KUSHTIA DISTRICT
Swarnali Akter	University of Rajshahi	GEOSPATIAL MODELING OF URBAN FLOOD VULNERABILITY IN DHAKA CITY: AN INTEGRATED REMOTE SENSING, GIS, AND AHP- FUZZY SMCE APPROACH
Md. Faresh Hossen	University of Chittagong	TROPICAL CYCLONE VULNERABILITY OF BHASANCHAR ISLAND, BANGLADESH
Rafia Razzak Ria Faria Islam Banani Afrin Iffat Ara Md. Anisul Kabir Akib Javed	Islamic University Institute of Water Modelling (IWM)	AN EVALUATION OF CAPACITY GAPS AND GOVERNANCE BARRIERS IN INTERNAL MEDICAL WASTE MANAGEMENT SYSTEMS IN HOSPITALS OF RANGPUR, BANGLADESH
Laila Anjum Eva Iffat Ara Shahin Ali Rubaiatul Islam Zerin Md. Akib Javed Md. Anisul Kabir	Islamic University Institute of Water Modelling (IWM)	ASSESSMENT OF RAINWATER HARVESTING SYSTEMS AND COMMUNITY PERCEPTIONS IN THE SOUTHWESTERN COASTAL BANGLADESH
Faria Islam Banani Afrin Iffat Ara Md. Kamrul Hossain Rubaiatul Islam Zerin Md. Anisul Kabir Akib Javed	Islamic University Institute of Water Modelling (IWM)	QUANTIFYING SPATIAL DIFFERENTIATION OF SOCIOECONOMIC AND GOVERNANCE STRESSORS SHAPING RESIDENT CRIME PERCEPTION IN RAJSHAHI METROPOLITAN AREA, BANGLADESH
Md Mahmudur Rahman Md Sabbir Hosain A H M Monzurul Mamun Md Mujibor Rahman	Khulna University Pabna University of Science and Technology	PASSENGERS PERCEPTION AND SATISFACTION TOWARD THE RAILWAY TRANSPORT SYSTEM IN BANGLADESH
Md Sabbir Hosain Mst. Jafrunnahar Joly A H M Monzurul Mamun	Pabna University of Science and Technology	PUBLIC PERCEPTION AND COMMUNITY ENGAGEMENT IN SOLID WASTE MANAGEMENT IN PABNA MUNICIPALITY, BANGLADESH

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INTERNATIONAL HALICH CONGRESS ON MULTIDISCIPLINARY SCIENTIFIC RESEARCH-IX

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**PREVALENCE OF ONCHOCERCIASIS INFECTION AMONG RESIDENTS OF
SELECTED RURAL COMMUNITIES IN BWARI AREA COUNCIL ATTENDING
GENERAL HOSPITAL BWARI**

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ABSTRACT

Onchocerciasis, also known as river blindness, remains a major public health concern in rural African communities. This study assessed the prevalence, risk factors, awareness, and clinical manifestations of onchocerciasis among residents of selected rural communities in Bwari Area Council attending General Hospital Bwari, Abuja, Nigeria. A descriptive cross-sectional study was conducted using a structured questionnaire and clinical examinations. A total of 260 respondents were selected through multistage sampling techniques and 260 instruments were distributed to the respondents. Out of which 250 instruments were duly filled and returned. The analysis was done based on the returned instruments. Data were collected on socio-demographic characteristics, knowledge and awareness of onchocerciasis, risk factors, and clinical symptoms. Data analysis involved descriptive and inferential statistics using SPSS version 26. The study found a prevalence rate of 24.7% for onchocerciasis among respondents. Males (29.3%) had a higher infection rate compared to females (19.5%). Farmers and fishermen who lived close to rivers were more affected. Significant risk factors identified included proximity to blackfly breeding sites ($p < 0.01$), lack of protective clothing, and non-participation in mass drug administration (MDA) programs. Awareness of onchocerciasis was moderate (56.3%), but only 40% had participated in MDA campaigns. Common clinical manifestations observed included skin itching (65%), nodules (42%), and visual impairment (18%). The disease significantly impacted the quality of life, particularly among older age groups. Onchocerciasis remains endemic in rural communities in Bwari Area Council, with significant public health and socioeconomic implications. There is an urgent need for intensified health education, improved MDA coverage, and vector control interventions to reduce transmission and associated morbidity.

Keywords: Onchocerciasis, River Blindness, Prevalence, Risk Factors, Mass Drug Administration, Blackfly, Public Health, Nigeria

**GILLS AND GASTROINTESTINAL PARASITES OF *SYNODONTIS SCHALL* IN
LAPAI - AGAIE RESERVOIR, NIGER STATE, NIGERIA**

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ABSTRACT

Study of gills and intestinal parasites of *Synodontis schall* in Lapai - Agaie Reservoir, Niger State, Nigeria was carried out between June 2024 - August 2024. Out of the 40 samples examined, 19 (47.5%) were infected and 21 (52.5.0%) uninfected with gill parasites, 21 (52.5%) and 28 (70.0%) were infected and uninfected with gastrointestinal parasites respectively. *Trichodina* sp. and *Ergasilus lizae* were identified as gill parasites with higher abundance of *Trichodina* sp. *Eustrongylides* species, *Diphyllbothrium latum* and *Procallamus* were identified as gastrointestinal parasites with *Eustrongylides* as most abundant species. 22.0-25.9 cm size range recorded highest prevalence of infection for both gills and gastrointestinal, which did not differ significantly ($p>0.05$). Infection intensity was highest in 16.9-21.9 cm and 22.0-25.9 cm for gills and gastrointestinal tracts respectively. Level of intensity of parasites infection was low for gills and gastrointestinal tract based on criteria of Williams and Bunkley (1996). Further studies need to be done for the remaining months, which may reveal more parasites, water quality of the reservoir should be assessed and findings of this work can be used as baseline information or reference materials.

Keywords: Gills, *Synodontis schall*, gastro-intestine, parasite, Lapai - Agaie reservoir, Nigeria

MECHANICAL PROPERTIES OF CUBIC MgCa INTERMETALLIC COMPOUND UNDER HIGH COMPRESSION UP TO 7 GPa: DFT APPROACH

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Abstract

Binary intermetallic compounds are frequently constituted from two metal atoms, or sometimes from a metal and non-metal. Among these materials, magnesium-based intermetallic compounds, which are composed of magnesium and other metal or non-metal (Cu, Ca, Rh,...etc). This study aims to investigate the impact of high pressure on the variation of the elastic constants and other mechanical properties of cubic MgCa intermetallic compound. The analytical results indicate a monotonic increase in all the elastic constants C_{ij} up to 7 GPa. For pressure ranging from 0 to 7 GPa, both the elastic constants C_{11} and C_{12} as well as their aggregate bulk modulus B increase almost linearly with increasing pressure, while the elastic constant C_{44} increases nonlinearly and relatively slowly with increasing pressure up to 7 GPa. In general, crystals having the cubic structures exhibit the same behaviour in different pressure ranges, highlighting the interplay between mechanical behaviour and pressure-induced structural behavior of materials under consideration. Furthermore, we derive pressure-dependent behaviors of Young's modulus, Poisson's ratio, anisotropy index, solidity index and Debye temperature. The results indicate a monotonic increase in Young's modulus, Poisson's ratio, Zener anisotropy index and Debye temperature as pressure increases. Conversely, the solidity index exhibits a strictly decreasing trend with increasing pressure for our material of interest.

Keywords: High-pressure, MgCa intermetallic compound; Mechanical and elastic properties; First-principles approaches.

LONG TERM TRENDS OF MILK PRODUCTION IN NILI-RAVI BUFFALOES ENCOMPASSING PAST FIVE DECADES

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Nili-Ravi being the more common buffalo (*Bos bubalus*) is considered as the best breed of the world due to higher milk yield with particular flavour and thickness of milk containing sufficient amount of fat in it. A retrospective study of analysis of lactation milk yields of buffaloes kept at various government and private herds ($n \geq 92$) registered with Buffalo Research Institute, Pattoky was conducted using a large database spanning over more than seven decades. Estimated breeding values and genetic trends in milk production were investigated. The ups and downs in genetic trends were noted alongwith estimation of breeding values to evaluate sires of progeny testing program. As lactation yield downhill initially and then uphill finally with gradual increments, indicating better scenario of current lactations.

Keywords: Buffalo, big data, EBV, genetic improvement, trends, retrospective study

**PRODUCTION AND SENSORY EVALUATION OF AN ENRICHED PUDDING
USING COMPOSITE FLOUR OF NORMAL FLOUR, SWEET POTATO FLOUR,
MILK AND EGGS.**

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ABSTRACT

This study investigated the production and sensory evaluation of enriched pudding formulated using composite flour blends of wheat flour and sweet potato flour. Three formulations were developed: Sample A (0 g sweet potato flour, 500 g wheat flour), Sample B (200 g sweet potato flour, 300 g wheat flour), and Sample C (300 g sweet potato flour, 200 g wheat flour). Standardised processing steps, including sorting, rinsing, sieving, mixing, whisking, heating, and packaging—were adopted to ensure uniform product quality. A 20-member untrained panel using a 9-point hedonic scale to assess colour, taste, texture, flavour, and overall acceptability carried out sensory evaluation. Data were analysed using ANOVA. Results showed no significant differences in colour among the samples, while texture varied significantly, with Sample C (7.38 ± 1.34) rated as the highest. Sample A recorded the highest taste score (7.80 ± 8.33), whereas Sample C exhibited the best flavour profile (7.26 ± 1.32). Overall acceptability was highest for Samples B and C (8.00 ± 1.91 and 8.00 ± 1.05), indicating strong consumer preference for sweet potato-enriched pudding. Conclusion: The incorporation of sweet potato flour at 40–60% significantly enhances the sensory attributes—particularly texture, flavour, and overall acceptability—of pudding without adversely affecting colour or product stability. Sweet potato flour, therefore, represents a viable and nutritionally beneficial fortification ingredient in pudding formulation. Recommendation: The study recommends substituting 40–60% sweet potato flour in pudding production for optimal sensory quality. Future research should evaluate the nutritional composition, shelf stability, and physicochemical characteristics to support large-scale commercialisation and the development of functional foods.

Keywords: Composite flour; Sweet potato flour; Wheat flour; Sensory evaluation; Pudding formulation; Consumer acceptability.

ASSESSMENT OF EXTENSION SERVICE NEED AMONG ARTISANAL FISHERMEN OF BORGU LOCAL GOVERNMENT AREA NIGER STATE, NIGERIA

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Abstract

This study analyzed the assessment of extension training need among artisanal fishermen in Borgu L.G.A, Niger State, Nigeria. The study's specific objectives include; describing the socio-economic characteristics of respondents, determine the extent of extension training needs among artisanal fishermen in the study area, identify the factors influencing the training needs of artisanal fishermen in the study area, examine the effects of extension training on the output of artisanal fishermen, and ascertain the constraints associated with extension training needs among artisanal fishermen using primary data collected with the aid of a well-structured questionnaire from 98 farmers randomly selected in five communities. Based on the findings of the study, it was concluded that the fish farmers had mean age of 37 years, were married, had a mean household size of 5 persons, attained some level of education and fishing experience of 12 years, had one form of formal education. Also, the farmers did belong to farmers' cooperative society as well having access to credit and extension visits. Majority of the farmers were trained on cooperative formation and management. Safety protocol and emergency procedure and techniques for reducing pollution and recycling of waste.

Keywords: Assessment, Fishermen, Artisanal, Extension and Training needs.

DÜŞÜK DAYANIMLI KİRİŞLERİN FERROCEMENT İLE İYİLEŞTİRİLMESİ IMPROVEMENT OF LOW STRENGTH BEAMS WITH FERROCEMENT

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ÖZET

Betonarme yapıların uzun vadeli performansları, kullanım süresince maruz kaldıkları çevresel koşullar, yetersiz tasarım, malzeme yorgunluğu ve özellikle sismik etkiler nedeniyle önemli ölçüde azalmaktadır. Bu yapılar zamanla yükleme ve çevre koşullar etkisi altında çatlama, deformasyon, donatı korozyonu gibi çeşitli bozulmalara uğrayarak imalat aşamalarındaki hesaplanan taşıma kapasitelerini kaybederler. Özellikle deprem gibi ani ve tekrarlı yüklemelere karşı güvenliğin sağlanabilmesi için mevcut yapıların güçlendirilmesi, çağdaş yapı mühendisliği uygulamalarında vazgeçilmez bir gereklilik hâline gelmiştir. Güçlendirme yöntemleri; mevcut yapının yapısal özelliklerine, maruz kalınan yüklemelere ve ekonomik koşullara göre çeşitlilik göstermektedir. Geleneksel güçlendirme teknikleri arasında çelik mantolama, betonarme bohçalama ve fiber takviyeli polimer (FRP) sistemleri ön plana çıkmakla birlikte, bu yöntemlerin bazı sınırlılıkları da söz konusudur. Örneğin, FRP sistemlerinde yapışma sorunları, yüksek maliyet, yangın dayanımının düşük olması gibi faktörler, saha uygulamalarında çeşitli zorluklar göstermektedir. Bu nedenlerle alternatif ve daha verimli çözümlere yönelik arayışlar sürmektedir.

Son yıllarda, polyurea ve ferrocement gibi yenilikçi malzemeler, betonarme yapıların güçlendirilmesinde dikkat çeken alternatifler olarak öne çıkmıştır. Polyurea, üstün elastikiyet, hızlı kürlenme, yüksek yapışma kabiliyeti ve kimyasal direnciyle ön plana çıkarken hem su yalıtımı hem de darbe/çevresel etkilerden korunma amacıyla tercih sebebi olmaktadır. Diğer yandan, çelik hasır tel ile takviye edilmiş çimento esaslı kompozit bir malzeme olan ferrocement, çatlak kontrolü, süneklik ve dayanıklılık açısından çeşitli avantajlar sunmaktadır. Bu iki yenilikçi malzemenin birlikte kullanımı, literatürde sınırlı sayıda incelenmiş olup, bu konuda henüz standardize edilmiş bir uygulama yöntemi bulunmamaktadır.

Bu çalışma, polyurea ve ferrocement malzemelerinin kombine etkilerini araştırma ve sonuçlarını ortaya koymayı amaçlamaktadır. Çalışmamızda, bu hibrit sistemi betonarme kirişlerin eğilme altındaki yapısal performansına olan etkisinin değerlendirdik. Çalışma kapsamında üretilen düşük dayanıma sahip betonarme kirişlerin yükleme altındaki davranışlarını ve yük kapasitelerini karşılaştırdık. Elde ettiğimiz sonuçlara göre; düşük dayanıma sahip kirişlerden güçlendirme yapılmamış numuneler ile tek kat ve çift kat güçlendirme yapılmış numuneler karşılaştırıldığında referans numunesine kıyasla tek katlı güçlendirme yapılmış numune de yaklaşık olarak %50, çift katlı güçlendirme yapılmış numune de yaklaşık olarak %70 iyileştirme görülmüştür. Tüm numunelere, dört noktalı eğilme deneyi uygulanmış; yük-deformasyon ilişkileri, rijitlik, süneklik ve nihai taşıma kapasiteleri ortaya koyulmuştur.

Anahtar Kelimeler: Kiriş Güçlendirme, Eğilme deneyi, Ferrocement ile Güçlendirme, Poliyürea.

ABSTRACT

The long-term performance of reinforced concrete structures is significantly reduced during their use due to environmental conditions, inadequate design, material fatigue, and, in particular, seismic effects. Over time, these structures, under the influence of loading and environmental conditions, experience various deteriorations such as cracking, deformation, and reinforcement corrosion, losing their calculated load-carrying capacity during the manufacturing phase. Strengthening existing structures, particularly to ensure safety against sudden and cyclical loading such as earthquakes, has become an essential requirement in contemporary structural engineering practices. Strengthening methods vary depending on the structural characteristics of the existing structure, the loads it is subjected to, and economic conditions. While steel jacketing, reinforced concrete bundling, and fiber-reinforced polymer (FRP) systems are prominent among traditional strengthening techniques, they also have certain limitations. For example, factors such as adhesion problems, high cost, and low fire resistance in FRP systems present challenges in field applications. Therefore, the search for alternative and more efficient solutions continues.

In recent years, innovative materials such as polyurea and ferrocement have emerged as attractive alternatives for strengthening reinforced concrete structures. Polyurea stands out for its superior elasticity, rapid curing, high adhesion, and chemical resistance, making it a preferred choice for both waterproofing and impact/environmental protection. Meanwhile, ferrocement, a cement-based composite material reinforced with steel mesh, offers numerous advantages in terms of crack control, ductility, and durability. The combined use of these two innovative materials has received limited research in the literature, and a standardized application method is not yet available.

This study aims to investigate the combined effects of polyurea and ferrocement materials and present the results. In this study, we evaluated the effect of this hybrid system on the structural performance of reinforced concrete beams under bending. We compared the loading behavior and load capacities of the low-strength reinforced concrete beams produced within the scope of the study. Our results indicate that when low-strength beams were compared with unreinforced specimens and single- and double-reinforced specimens, an approximately 50% improvement was observed in the single-reinforced specimen and an approximately 70% improvement was observed in the double-reinforced specimen compared to the reference specimen. Four-point bending tests were applied to all specimens, and load-deformation relationships, stiffness, ductility, and ultimate bearing capacity were determined.

Keywords: Beam Reinforcement, Flexural Testing, Reinforcement with Ferrocement, Polyurea.

PERFORMANCE EVALUATION OF BUS RAPID TRANSIT (BRT) IN DHAKA, BANGLADESH

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Abstract

Bangladesh is considered as a developing country. And Dhaka is the capital of Bangladesh. In world ranking, Dhaka is one of the most densely populated cities. The population of Dhaka is approximately over 20.7 million. Dhaka is also familiar for air pollution and noise pollution. Vehicle plays an important role and contribute to these pollutions. To help people moving from one part to another within Dhaka city government has taken necessary steps to ease peoples' movement by solving traffic congestion and prioritizing public transport. BRT and MRT are the result of those planning. BRT and MRT are now currently operating in Dhaka city. This paper is heavily focused on the performance evaluation of BRT in Dhaka city. This analysis evaluates the performance of Bangladesh's BRT system, targeting on its implementation, challenges and improvement areas. Very few numbers of buses (25) were used to align with BRT, but in recent time a good number of pink buses which is also an example of bus franchising will help people to move from one place to another. Passenger experience survey with some key parameters to understand the performance rate have been used to evaluate the performance in some study.

Keywords: *Performance, BRT, Experience, Pollution, Planning.*

REWRITING THE FEMININE: THE IMPACT OF SOCIAL MEDIA ON THE REPRESENTATION OF WOMEN IN CONTEMPORARY NIGERIAN FICTION

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Abstract

This paper examines how Nigerian feminist fiction reimagines the representation of women in an era shaped by social media and cyberculture. It focuses on Chimamanda Ngozi Adichie's *Americanah* (2013) and Lola Shoneyin's *The Secret Lives of Baba Segi's Wives* (2010), exploring how these texts use both digital and analogue forms of storytelling to redefine female identity, voice and empowerment. Building on Bell Hooks' feminist theory of voice and Donna Haraway's cyborg feminism, the research paper argues that Adichie and Shoneyin reposition women as self-conscious narrators, reconciling patriarchal tradition with technological modernity. While Adichie situates her protagonist within a digital world of blogging and virtual activism, Shoneyin constructs an earlier communal model of female solidarity that anticipates the collective culture of social media. Both writers demonstrate how Nigerian literature engages with the technological present to expand feminist expression.

Keywords: Nigerian literature, social media, digital culture, female representation, cyberfeminism

SYNTHESIS AND CONVERSIONS OF 2-HYDROXY-1-HALOIPHENOXY ESTERS OF DECANOL-2

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The emergence and rapid increase in the number of microbial strains resistant to the effects of currently available biologically active compounds is a determining factor in the synthesis of new antimicrobial agents. Since the synthesis of biologically active compounds with desired properties is the most relevant and promising research area in organic chemistry, the synthesis of new urethane derivatives is undoubtedly of practical interest. It is known from the literature that phenoxy esters and urethanes have high antimicrobial properties. Therefore, it is of some interest to combine functional fragments of urethane, thiourethane and aromatic esters in a single molecule, assuming that structural diversity will give these compounds high biological activity.

Very little research has been devoted to urethanes, which have a wide range of applications, and the reaction of isocyanates and isothiocyanates with compounds containing phenoxy esters in the 2-position has been almost completely unstudied. In addition, the influence of the nature of the substituents on the aromatic moiety and the structure of the substrate on the direction and outcome of the reaction is of interest. We have investigated the effect of the structure and composition of alkyl phenoxy esters, alkyl phenyl isocyanates and isothiocyanates on the synthesis reactions of urethanes and thiourethanes, as well as the effect of the composition and structure of the synthesized compounds on their antimicrobial properties. In this regard, we have studied the reaction of 1-methylphenoxy-2-hydroxynonane with methyl phenyl isocyanates.

The reaction activity of the hydroxyl group was studied based on the nucleophilic substitution reaction between 1-halophenoxydecanol-2 and acetoxymethyl chloride. It was found that the yield of acetoxymethyl ethers, regardless of the nature of the halogen atom and their location in the aromatic ring, is up to 70%. This indicates the high reactivity of the hydroxyl group. Indeed, 69–70% urethanes are formed very easily with phenoxydecanol-2 isocyanate. The starting material is obtained by reacting 1-bromodecanol-2 with halophenols. The synthesized polyesters and urethanes were tested as antimicrobial additives to lubricating oils and positive results were obtained. Urethanes have higher antimicrobial properties.

The reaction of 1-hydroxyphenyl-2-decanol with methylphenyl isocyanate was studied. It was determined that the introduction of a hydroxyl group into the isocyanate fragment in the presence of triethylamine occurred in a yield of 70-77%. The study of the antimicrobial properties of the obtained compounds showed that, regardless of the nature and arrangement of the substituents on the aromatic ring, they exhibit significant fungicidal activity and have a very high bactericidal efficiency.

Keywords: 1-halophenoxydecanol-2, 1-hydroxyphenyl- decanol-2, alkyl phenyl isocyanate, methyl phenyl isothiocyanate, fungicidal efficacy.

DEKANOL-2-NİN 2-HİDROKSI -1-HALOİDFENOKSI EFİRLƏRİNİN SINTEZİ VƏ CEVRİLMƏLƏRİ

Dos.Ədilə Mahmudova

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Hazırda mövcud olan bioloji aktiv birləşmələrin təsirlərinə davamlı mikrob ştammlarının meydana çıxması və sayının sürətlə artması yeni antimikrob maddələrin sintezində müəyyənədicə amildir. Arzu olunan xüsusiyyətlərə malik bioloji aktiv birləşmələrin sintezi üzvi kimyada ən aktual və perspektivli tədqiqat sahəsi olduğundan, yeni uretan törəmələrinin sintezi şübhəsiz ki, praktik maraq doğurur. Ədəbiyyatdan fenoksi efirlərinin və uretanların yüksək antimikrob xüsusiyyətlərinin olması məlumdur. Buna görə də, struktur müxtəlifliyinin bu birləşmələrə yüksək bioloji aktivlik verəcəyini fərz edərək, uretan, tiouretan və aromatik efirlərin funksional fraqmentlərini tək bir molekulda birləşdirmək müəyyən maraq kəsb edir.

Geniş tətbiq sahəsinə malik uretanlara çox az tədqiqat həsr olunmuşdur və izosianatlar və izotiosianatların 2- vəziyyətdə fenoksi efirləri olan birləşmələrlə reaksiyası demək olar ki, öyrənilməmişdir. Bundan əlavə, aromatik hissədəki əvəzedicilərin təbiətinin və substratın quruluşunun reaksiyanın istiqamətinə və çıxımına təsiri maraq kəsb edir. Tərəfimizdən alkil fenoksi efirlərinin, alkil fenil izosianatların və izotiosianatların strukturunun və tərkibinin uretanlar və tiouretanların sintez reaksiyalarına təsirini, eləcə də sintez edilmiş birləşmələrin tərkibinin və strukturunun onların antimikrob xüsusiyyətlərinə təsirini araşdırdıq. Bu baxımdan, biz 1-metilfenoksi-2-hidroksinonanın metil fenil izosianatlarla reaksiyasını öyrənilmişdir.

1-Haloidfenoksidekanol-2 ilə asetoksimetilxlorid arasındakı nukleofil əvəzetmə reaksiyası əsasında hidroksil qrupunun reaksiya aktivliyi öyrənilmişdir. Müəyyən edilmişdir ki, halogen atomunun təbiətindən və onların aromatik həlqədə yerləşmə vəziyyətindən asılı olmayaraq asetooksilmetil efirlərinin çıxımı 70%-ə qədər olur. Bu isə hidroksil qrupunun yüksək reaksiya qabiliyyətini göstərir. Doğrudan da fenoksidekanol-2 izosianatla çox asan 69–70% uretanlar əmələ gətirirlər. İlk maddə 1 brom-dekanol-2 ilə haloidfenollarla reaksiyadan alınır. Sintez olunmuş poliefirlər və uretanlar sürtkü yağlarına antimikrob aşqarı kimi sınaqdan çıxarılmışdır və müsbət nəticələr alınmışdır. Uretanlar daha yüksək antimikrob xassəyə malikdirlər.

1-hidroksifenil- dekanol-2-nin metilfenil izosianatla reaksiyası öyrənilmişdir. Trietilaminin iştirakı ilə izosianat fraqmentinə hidroksil qrupunun daxil edilməsi 70-77% çıxımla baş verdiyi müəyyən edilmişdir. Alınmış birləşmələrin antimikrob xüsusiyyətlərinin tədqiqi göstərmişdir ki, aromatik halqadakı əvəzedicilərin təbiətindən və düzlüyündən asılı olmayaraq, onlar nəzərəcarpacaq dərəcədə funqisid aktivliyi nümayiş etdirir və bakterisid effektivliyi də olduqca yüksəkdir.

Açar sözlər: 1-haloidfenoksidekanol-2, 1-hidroksifenil- dekanol-2, alkil fenil izosianat, metil fenil izotiosianat, funqisid effektivliyi.

**ÜRETİM SÜREÇLERİNDE ENTEGRE TAKİP VE YÖNETİM YAPISININ
GELİŞTİRİLMESİ (ETY)**
DEVELOPMENT OF AN INTEGRATED TRACKING AND MANAGEMENT
STRUCTURE IN PRODUCTION PROCESSES

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Özet

Bu çalışma, üretim atölyelerinde insan, makine ve ürün etkileşimini bütünleşik biçimde yöneterek verimlilik, izlenebilirlik ve kaliteyi artırmayı amaçlayan Entegre Takip ve Yönetim Yapısı (ETY)'nin tasarımı, geliştirilmesi ve uygulanmasını kapsamaktadır. Endüstri 4.0 yaklaşımına uygun olarak geliştirilen yapı, üretim sürecinde oluşan tüm verileri merkezi bir platformda toplayarak karar destek sistemlerine dönüştürmeyi hedeflemektedir.

Sistem; personel takibi, ürün ve sipariş yönetimi, makine izleme, performans ekranı ve yönetici raporlama arayüzü olmak üzere beş ana bileşenden oluşmaktadır. Personel takibi modülünde, tüm operatörlere ait kimlik, görev ve yetki bilgileri merkezi bir veri havuzunda saklanmaktadır. Operatör, kimlik kartını okutarak yalnızca yetkili olduğu makineleri aktif hale getirebilmekte, böylece yetkisiz erişim ve hatalı üretim riski ortadan kaldırılmaktadır. Ürün ve sipariş yönetimi modülünde, her sipariş sisteme tanımlanmakta; sipariş numarası, müşteri bilgisi, kumaş ebatı, gramaj ve hedef üretim miktarı gibi parametreler kayıt altına alınmaktadır. Makineler, yalnızca onaylı siparişler üzerinden çalışmakta ve bu durum üretim disiplini ile izlenebilirliği artırmaktadır.

Her ürün, üretim sürecinde benzersiz bir karekod ile etiketlenmektedir. Bu karekodlar kalite kontrol aşamasında okutularak ürünlerin 1. veya 2. kalite olarak sınıflandırılmasına imkân vermektedir. Ayrıca, hangi operatörün hangi tarihte, hangi makinede üretim yaptığı da sistem tarafından otomatik olarak kayıt altına alınmaktadır. Makine izleme modülü, üretim adetleri, duruş süreleri, alarm bilgileri ve verimlilik oranlarını gerçek zamanlı olarak izleyebilmekte; bu veriler atölye performans ekranında sadeleştirilmiş biçimde görüntülenmektedir. Yönetici panelinde ise tüm üretim parametreleri detaylı analizlerle raporlanabilmektedir.

Sonuç olarak ETY, üretim süreçlerinde insan-makine-ürün entegrasyonunu dijitalleştirerek, hem operasyonel görünürlük hem de performans yönetimi açısından önemli katkılar sağlamaktadır. Bu sistem, endüstriyel dijitalleşme yolunda atölye ölçeğinde uygulanabilir, ölçeklenebilir ve sürdürülebilir bir yönetim altyapısı sunmaktadır.

Anahtar Kelimeler: Entegre Takip ve Yönetim Yapısı, Üretim Süreçleri, Dijitalleşme, Endüstri 4.0, Operatör Takibi, Makine İzleme, Kalite Kontrol, Gerçek Zamanlı Veri Analizi, Verimlilik Yönetimi, İzlenebilirlik

Abstract

This study presents the design, development, and implementation of an Integrated Tracking and Management Structure (ITY) aimed at enhancing efficiency, traceability, and quality by managing the interaction between human, machine, and product in an integrated digital environment. In line with the Industry 4.0 paradigm, the proposed structure collects all

production-related data within a centralized platform and transforms them into decision-support insights to enable data-driven management in workshop-scale production systems.

The system consists of five main components: personnel tracking, order and product management, machine monitoring, performance visualization, and managerial reporting interface. In the personnel tracking module, identity, role, and authorization information for all operators are stored in a centralized database. Operators can activate only the machines assigned to them by scanning their company ID cards, ensuring access control and operational accountability. In the order management module, each job order is recorded in the system with details such as order number, customer, fabric size, weight, and target quantity. Machines are restricted to operate only under approved job orders, which increases both production discipline and traceability.

Each product is assigned a unique QR code during the production process. These codes are scanned during quality control, allowing classification into first- or second-quality categories. The system also records detailed information about which operator worked on which machine and on what date. The machine monitoring module continuously collects real-time data such as production counts, downtimes, alarms, and efficiency rates. These data are displayed on workshop performance screens in a simplified form, while the managerial dashboard provides advanced analytical reports for decision-makers.

In conclusion, ITY offers a digitalized approach to integrating human, machine, and product interactions, significantly improving operational transparency and performance management. The system provides a scalable and sustainable management infrastructure that supports the digital transformation of industrial production environments.

Keywords: Integrated Tracking and Management Structure, Production Processes, Digitalization, Industry 4.0, Operator Tracking, Machine Monitoring, Quality Control, Real-Time Data Analysis, Efficiency Management, Traceability

RISK FACTORS ASSOCIATED WITH GROWTH RETARDATION IN CHILDREN HOSPITALIZED AT THE PROVINCIAL HOSPITAL OF SALÉ (MOROCCO)

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Abstract

Growth retardation is a real public health and development issue. In developing countries, nutrition research most often focuses on children aged 0 to 5, who are targeted because of the high mortality rate in this age group, which is nevertheless partly preventable.

This is a prospective cross-sectional study. The study focused on children with parasitic diseases who were hospitalized at the Moulay Abdellah Hospital in the city of Salé, Morocco. The children surveyed were between the ages of 0 and 15.

Anthro and Anthro Plus 2005 (version 1.0.4) software was used to determine z-scores calculated from WHO-2006 standards for children aged 0-5 and 6-19, respectively. Statistical data processing was performed using SPSS software.

We found that 24/97 (24.74%) of children living in suburban areas and 13/88 (14.77%) living in rural areas suffer from stunted growth. The frequency of malnutrition is not significantly related to place of residence ($P > 0.05$).

Anthropometric analysis showed that 28/148 (18.92%) of children who reported washing their hands and 13/52 (25%) of children examined who washed their hands occasionally suffered from malnutrition. Statistical analysis did not show a significant association between hand washing and stunting ($p > 0.05$).

With regard to school level, 17/112 (13.93%) in primary school, 14/66 (21.21%) in nursery school, and 10/22 (45.45%) in middle school suffer from malnutrition compared to normal children. The results obtained show a significant difference between educational level and growth retardation ($p < 0.05$).

Keywords: Risk factors, Growth retardation, Salé, Morocco

PRECISION IMPROVEMENT IN HEALTHCARE THROUGH THE USE OF AR/VR AND DIGITAL TWINS: ROBOTIC ASSISTANCE

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Abstract

The world demographic is aging at an exclusive rate. The worldwide increase in life expectancy has led to the emergence of three critical issues: a growing percentage of aged individuals, neurological and physical obstacles progressively impacting seniors, and an expanding percentage of single-parent families. Effective geriatric care solutions, consisting of medical supplies and assistive robots, are becoming more essential, as shown by the existing statistics. Recent advancements in robotics have the potential to enhance the healthcare sector. Robotic systems are often employed to deliver care for the elderly, newborns, and those with impairments, as well as in hospitals, rehabilitation, and mobility aid. The manufacturing sector has always led improvements in technology for robotics due to the necessity for robotic collaboration. In the interim, the COVID-19 influenza has served as a catalyst for the advancement of pleasurable robotics in medical centers as a means of surmounting the challenges and hazards that have been brought on by the global epidemic. Service robots are worthwhile because they not only prevent the spread of infection and mitigate errors made by individuals, but they also enable front-line workers to eliminate instant interaction, thereby enabling them to concentrate on more crucial responsibilities while offering a clear boundary regarding direct infection exposure. This literature examines the possibilities of autonomous aid in healthcare, utilizing augmented and virtual reality (AR/VR) with greater accuracy, as a modern method to integrate with digital twin data.

Keywords: Assistive robots, Rehabilitation, Mobility, Service robots, Augmented reality, Virtual reality, Digital twin.

**FROM EMERGENCE TO CONTESTATION: EVOLUTION-NEGOTIATION-
DIFFERENTIATION OF CLIMATE NORMS IN COP1-COP29**

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The Conference of the Parties (COP) occupies a central position within the UNFCCC, where climate governance norms are formed, finalized through negotiation, reinterpretation, and institutionalization. The study examines the evolution of five core norms across all COP decision texts, such as Common but Differentiated Responsibilities (CBDR), the 1.5°C goal, Loss and Damage (L&D), fossil-fuel governance, and net-zero commitments; and then incorporates the results of COP29. Drawing a mixed-methods approach and constructivist norm analysis, this article creates a novel longitudinal keyword salience dataset by applying the norm-intensity metric (Standardized scale from 0 to 2) to track changes across three decades of COP decisions. The findings frame divergent norm life cycles, where CBDR becomes qualified from the first appearance, net-zero and 1.5°C rapidly institutionalize only after the Paris Agreement, L&D evolves a formal funding mechanism in 2022 despite being visible in previous discussions, and fossil fuels potentially enter after COP26 but remain contested. Based on these findings, this research introduces a concept, “*END THEORY* (Evolution-Negotiation-Differentiation theory to capture the whole dynamic interactions of climate norms)”, which measures the persistent gap between rhetorical endorsement and substantive delivery in COP outcomes. A five-part contestation typology, such as symbolic, procedural, substantive, operational, and performative, is the paper's unique framework, which answers why some norms advance while others stall despite strong discursive sidings. This study demonstrates that, based on overall analysis, norm evolution in the COP negotiations is shaped not by linear development but by geopolitical constraints, shifting coalitions (LDCs, BASIC, AOSIS), and the complex interaction with scientific assessment. In implication, it provides a replicable dataset, a refined conceptual vocabulary, and an updated understanding of COP29's finance negotiations, providing policymakers and scholars with theoretical and practical insights.

Keywords: Climate Governance, UNFCCC/COP Negotiation, Norm Evolution, END Theory (Evolution-Negotiation-Differentiation), CBDR/L&D/1.5/Net-Zero/Fossil-Fuel

NEEM OIL AS A BIOPESTICIDE FOR ERADICATING BACKSWIMMER INSECTS IN STINGING CATFISH NURSERY PONDS

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Abstract:

The stinging catfish (*Heteropneustes fossilis*) is a commercially important species in Bangladesh. However, its early life stages are highly vulnerable to predation by aquatic insects such as backswimmers (*Notonecta* sp.). Hatcheries commonly rely on synthetic organophosphate insecticide Fenitrothion (Sumithion 50 EC) to control these pests; however, the adverse effects of such chemicals on non-target fish larvae raise concerns about environmental sustainability, and as a result, an organic insecticide, Neem oil (active insecticidal ingredient - Azadirachtin), is tested as a safe alternative to the chemical insecticide. Therefore, this study compared the toxicity of fenitrothion and neem oil to backswimmers and evaluated their effects on the survival and development of *H. fossilis* larvae under controlled laboratory conditions. A 48-hour LC₅₀ test was conducted for both insecticides using a static bioassay. Fenitrothion was found to be extremely toxic to backswimmers, with an LC₅₀ of 0.000044 (0.000016–0.00012) µl/L, whereas the neem oil concentration for similar lethality was an LC₅₀ of 0.0097 (0.006–0.016) µl/L. Subsequently, *H. fossilis* larvae were exposed to three treatments of fenitrothion for seven days: T₀ (control), T₁ (sublethal concentration), and T₂ (LC₅₀ concentration) to assess mortality and developmental deformities. Fenitrothion exposure resulted in significantly higher mortality (38.89 ± 1.92%) at the sublethal concentration (0.1 µl/L; $p = 0.008$) and induced several deformities, including caudal fin erosion, black pigmentation on the yolk sac, fin-fold disruption and yolk sac hemorrhage, all statistically significant across treatments. In contrast, neem oil treatments showed statistically insignificant mortality ($p = 0.178$) and no visible morphological abnormalities. Overall, while fenitrothion effectively eliminated backswimmers, it posed substantial risks to the early life stages of *H. fossilis*. Neem oil, however, demonstrated effective insect control with minimal non-target toxicity. These findings suggest that neem oil-based biopesticides provide a safer and more environmentally friendly alternative for nursery pond management, promoting sustainable aquaculture practices.

Keywords: *Heteropneustes fossilis*, Backswimmer insect (*Notonecta* sp.), Fenitrothion, Neem oil, Azadirachtin, Eco-friendly aquaculture.

THE DYNAMICS OF IMPLEMENTING THE FOREST CARBON PROGRAM (REDD+): A QUALITATIVE STUDY IN THE REPONG DAMAR INDIGENOUS COMMUNITY IN GUNUNG KEMALA SUBDISTRICT, WEST COAST

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ABSTRACT

The Repong Damar indigenous community located in Gunung Kemala Subdistrict, West Coast, is a significant example of the integration of international policies and forest management practices based on local wisdom. The purpose of this study is to analyze the changes, challenges, and responses of indigenous peoples regarding the implementation of REDD+ in the repong damar agroforestry system, which has high carbon storage potential from an ecological perspective. Using descriptive qualitative methods through literature studies and field observations, this study reveals that although repong damar plays an important role in carbon storage and environmental protection, the implementation of REDD+ still faces various problems, including uncertainty regarding land rights, carbon-related bureaucracy, and limited community access to information and benefit distribution mechanisms.

Keywords: Carbon, Community, REDD+

**THE EVOLUTION OF PROTECTION AGAINST DISCRIMINATION IN
EMPLOYMENT RELATIONS UNDER EUROPEAN UNION LEGISLATION AND
CASE LAW**

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MSC: Fatjon Çajupi

Abstract

Discrimination in employment relations constitutes both a legal and social phenomenon that undermines the principle of equal treatment, one of the fundamental principles of European Union law. In this context, the study aims to conduct an in-depth analysis of the normative and jurisprudential development of protection against discrimination, with particular emphasis on primary and secondary instruments as well as the interpretations of the Court of Justice of the European Union (CJEU). The first part addresses the enshrinement of the principle of non-discrimination in the Union's founding treaties, beginning with the 1957 Treaty of Rome, which for the first time established the principle of equal pay between male and female workers. This principle was further consolidated through the Treaty of Lisbon and the Charter of Fundamental Rights of the European Union, where non-discrimination is recognized as a subjective right with direct effect within the legal order of the Member States.

Special attention is also devoted to the secondary legislation of the EU, primarily the directives, which constitute sources of derived law and binding instruments for Member States in their transposition into the national legal order. These acts aim to prohibit all forms of discrimination in the fields of employment, social security, self-employment, and equal treatment in the workplace, while progressively expanding the grounds of protection against discrimination based on gender, race, religion, age, disability, sexual orientation, and ethnic or social origin. This normative development reflects the EU's effort to harmonize the legal frameworks of the Member States with European standards in the fields of labor law and social rights.

Keywords: Discrimination; Gender Equality; Employment Relations; TFEU; Non-Discrimination in Employment; Affirmative Measures; Labor Market.

ANALYSIS OF ORGANOPHOSPHORUS AND CARBAMATE PESTICIDE RESIDUES IN APPLE FRUITS FROM MASHHAD, IRAN

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Abstract

Background: The presence of pesticide residues in agricultural products is of paramount importance regarding food safety and public health. This study aimed to determine the residue levels of organophosphorus and carbamate pesticides in apple samples from the Mashhad region and compare them with the numerical maximum residue limits set by the Iranian National Standard.

Materials and Methods: This is a cross-sectional study in which 40 apple samples were randomly collected from local markets. The extraction of pesticide residues was performed using the QuEChERS method; later, they were analyzed by gas chromatography-mass spectrometry. In this study, diazinon, chlorpyrifos, malathion, and pirimicarb were the target pesticides.

Results: The analysis indicated that 22 samples (55%) were contaminated with at least one pesticide residue. The concentration of diazinon was higher than the Iranian National Standard MRL (0.05 mg/kg) in 8 samples (20%). In addition, chlorpyrifos was detected above the MRL of 0.01 mg/kg in 5 samples (12.5%). The other two detected pesticides, malathion and pirimicarb, were all within their permissible limits (MRLs of 2.0 mg/kg and 0.5 mg/kg, respectively).

Conclusion: The results show that there is considerable contamination of pesticide residues in apple samples, which clearly reflects the need for further monitoring as well as enforcement of regulations governing pesticide use. Education of farmers regarding pre-harvest intervals and integrated pest management practices remains a necessary intervention to reduce public health risk.

Keywords: Pesticide Residues; Apple; GC-MS; Food Safety.

URBAN REGENERATION STRATEGIES FOR THE REVITALIZATION OF TUDUN NUPAWA COMMUNITY IN KADUNA, NIGERIA

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ABSTRACT

This study examines effective urban regeneration strategies for revitalizing the Tudun Nupawa neighborhood in Kaduna, Nigeria. The area, like many inner-city communities, faces challenges such as deteriorating infrastructure, overcrowding, inadequate housing, poor environmental conditions, and limited access to essential services. Using a mixed-methods approach involving spatial analysis, household surveys, field observations, and key-informant interviews, the research identifies the primary factors contributing to urban decline in Tudun Nupawa. The findings highlight the need for comprehensive renewal interventions that incorporate physical upgrading, improved service delivery, enhanced waste management, social development programs, and community participation. The study proposes an integrated regeneration framework aimed at improving the livability, environmental quality, and socio-economic vitality of the neighborhood. The recommended approach supports sustainable urban development and provides policymakers, planners, and local authorities with evidence-based strategies for guiding future renewal efforts in Kaduna Metropolis.

Keywords: Urban regeneration; neighborhood revitalization; Tudun Nupawa; Kaduna Metropolis; infrastructure upgrading; sustainable urban development; community participation; environmental improvement.

THE LEGACY OF ALFRED THE GREAT: MILITARY INNOVATIONS AND CULTURAL UNIFICATION IN EARLY MEDIEVAL ENGLAND

Ananda Majumdar

Ananda Majumdar - Harvard University

Ananda MAJUMDAR | alumnus | Business | MacEwan University, Edmonton | Human Resources | Research profile

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Harvard Graduate School of Education (Professional Education as a Child Development Educator, Certificate in Early Education Leadership (CEEL-Series 1,2,3), online) 2017-2025

*NorQuest College, Alberta Routes Program -present

My academic journey, which includes an Honorary Doctor of Philosophy in Generic Education from Abide University and Institute and a Doctor of Divinity from North Central Theological Seminary, has been deeply influenced by the Arthurian legend. This collection of tales about King Arthur, his knights, and their quests holds significant cultural and historical importance. It has been a central theme in my exploration of cross-cultural communication, offering a unique perspective to understand the relationship between myth, culture, and science. This perspective, combined with my academic background, enables me to provide insights into the study of global displacement, particularly regarding the cultural and societal factors that impact gender equality. It also serves as a compelling avenue to investigate how sound influences the artistic and architectural features of the medieval era, symbolizing the shaping of societal norms and values. My academic background, particularly in cross-cultural communication and gender equality, provides a unique lens to understand and address the complex issue of global displacement.

*Doctor of Divinity, North Central Theological Seminary, Minneapolis, United States, 2023 - present

The University of Alberta (Bachelor of Education after Degree in Elementary, Faculty of Education, Community Service-Learning Certificate and Certificate in International Learning (CIL) – 2012-2022

My international experiences, particularly in India, have significantly broadened my academic perspective, particularly in understanding how the Arthurian legend resonates across cultures with its universal themes of heroism and noble ideals. This exposure has also deepened my understanding of global issues, including gender inequality, and connected me with a broader educational network. It has prompted me to examine our shared cultural heritage through the lens of the Arthurian legend, a cultural phenomenon transcending national borders. This collective inquiry can lead to a deeper understanding of shared human experiences, including the diverse interpretations and applications of the Arthurian legend in relation to gender and empowerment issues in India. These experiences have also given me a unique perspective on the global displacement crisis, particularly in the context of India, which is crucial for understanding and addressing this complex issue.

Public Affairs, August 1-15, 2022, Online

As an intern at the Digital Museum and Diaspora, Migration, GRFDT, New Delhi, India (April 2021- March 2022, Online), I gained valuable insights into the practical aspects of migration and diaspora issues. This experience, combined with my academic background, further enriched my understanding of these complex topics and prepared me to contribute meaningfully to the study of global displacement.

During my time as a Book Pecker Fellow at Peace X, India, I was honoured to be named the top fellow in the social science department. In this capacity, I researched the cultural significance of the Arthurian legend, particularly in the context of India, which motivated me to continue my academic endeavours. Additionally, I earned a Computer Literacy Certificate in Migration Studies from GRFDT, New Delhi, India. This experience as a Book Pecker Fellow at Peace X, India, allowed me to delve deeper into the cultural and societal implications of the Arthurian legend, particularly in the context of global issues such as migration and displacement.

Science department and computer literacy certificate in Migration Studies, GRFDT, New Delhi, India (September 2020- March 2021, Online)

Grant MacEwan University (Diploma in HR Management), 2008-2012

Jadavpur University (Master of Arts in International Relations)

Sikkim Manipal University (Master of Business Administration in HR and Marketing Management)

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Abstract: This study examines Alfred the Great's impact on early medieval England during the Viking invasions of the late 8th and 9th centuries. It details how Alfred strategically responded to the Viking threat and helped unify the Saxon kingdoms. Using sources such as the Anglo-Saxon Chronicle and archaeological evidence, the research uncovers the social and political issues of 9th-century England, where various kingdoms faced external pressures. The findings highlight Alfred's military innovations, especially the establishment of fortified towns called burhs, which were vital in defending against Viking assaults. His development of a navy enhanced the Saxons' ability to counter sea threats and safeguarded key trade routes. Alfred reorganized the military to improve effectiveness and cohesion. Beyond military measures, the study highlights Alfred's promotion of education and legal reforms, which fostered a shared Saxon identity. Through literacy initiatives, the establishment of schools, and the translation of essential texts, Alfred cultivated an educated populace capable of governance and unity. His legal reforms created common laws that unified communities and strengthened social bonds. In summary, the research demonstrates that Alfred's leadership was instrumental in preserving the West Saxon kingdom and significantly contributing to the development of a unified English identity. His policies set the foundation for political unity and national consciousness, shaping English history for generations. This analysis portrays Alfred as both a military leader and a pivotal figure in England's cultural and political evolution.

Keywords: England, Early Medieval, Alfred the Great, Viking.

A REVIEW OF MALARIA EPIDEMIOLOGY IN CHHATTISGARH

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ABSTRACT

Malaria, a mosquito-borne infectious disease affecting humans, is caused by the genus Plasmodium, including Plasmodium falciparum, Plasmodium malariae, and Plasmodium vivax. This research aims to evaluate malaria cases and the factors contributing to their increase. A cross-sectional study was conducted, analyzing malaria surveillance data from 2000 to 2024 in Chhattisgarh, India, a centrally located state with an approximate population of 30 million. The incidence of malaria rose from 2.9 to 3.2 per 1000 population, with peak occurrences in July (monsoon season) and November. Incidence rates were consistently elevated in the Bastar and Surguja regions compared to the central region. Southern districts of Chhattisgarh have consistently reported higher incidence rates over the years. It is recommended that vector control measures be strengthened prior to the monsoon season. Further research is warranted to determine the primary drivers behind the elevated malaria incidence in southern Chhattisgarh. Key words- Malaria, Chhattisgarh, Plasmodium, mosquito-borne disease.

PREVALENCE AND ANTIBIOTIC RESISTANCE DYNAMICS OF *Escherichia coli* ISOLATED FROM CHICKEN EGGS

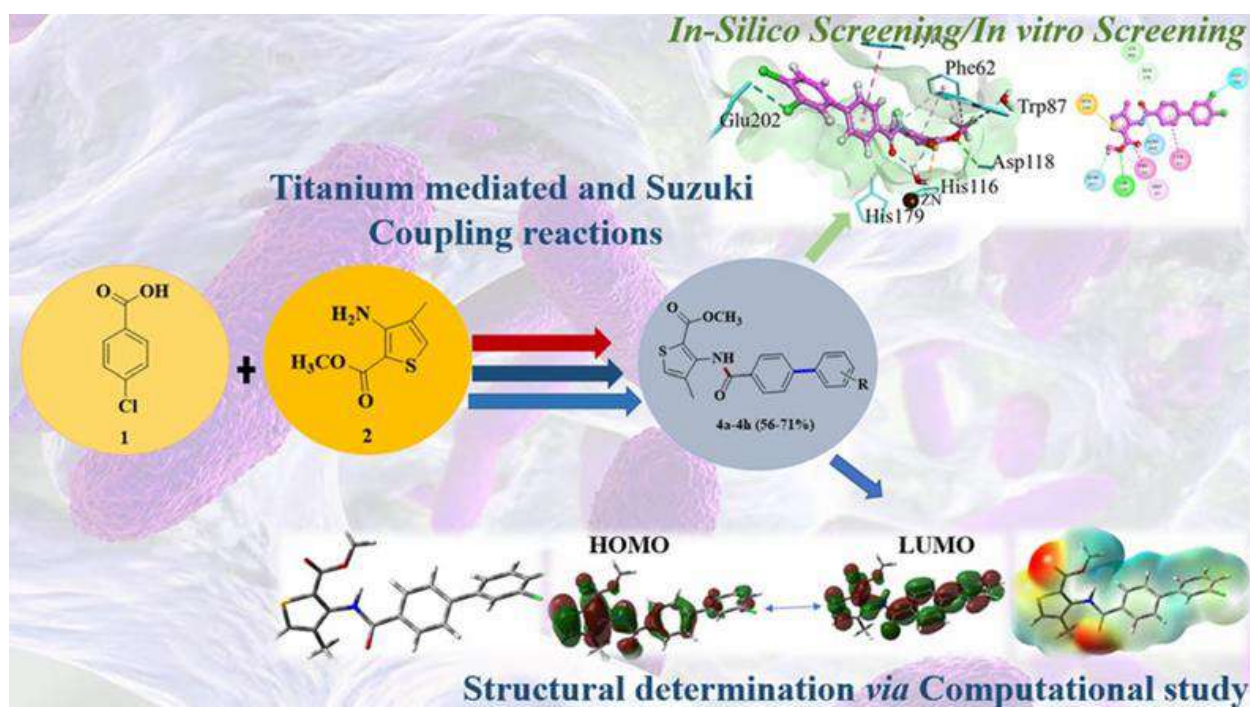
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Eggs are considered to be a valuable source of quality protein and enriched with essential nutrients that make it perfect foodstuffs. Eggs contain thirteen essential vitamins and minerals, alongside necessary omega-3 fatty acids and antioxidants. The study focused on the prevalence and antibiogram profile of *E. coli* isolated from chicken eggs those were collected from farms, wholesalers and retailers of Kurigram district. For the current study, in total 60 eggs were collected from different farms, whole sellers and retailers in order to determine the prevalence of *E. coli* and to study the antibiogram profile of *E. coli*. The isolation and identification of *E. coli* was confirmed based on their morphology, cultural, and biochemical characteristics. Antibiogram profile was determined by disc diffusion method. The overall prevalence of *E. coli* was 33.33% in chicken eggs in Kurigram district of Bangladesh of which 45.00% was from commercial layer farms, and 35.00% was from whole sellers and 20.00% was from retailers. The isolated *E. coli* antibiotic sensitivity patterns revealed the following results: 55.00%, 45.00%, 40.00%, 35.00%, 35.00%, 35.00% and 35.00% resistant to oxytetracycline, amoxicillin, levofloxacin, ciprofloxacin, doxycycline, erythromycin and neomycin respectively. The sensitivity patterns of the isolates showed 60.00%, 55.00%, 50.00%, 50.00%, 45.00%, 40.00% and 35.00% sensitive to neomycin, erythromycin, doxycycline, levofloxacin, oxytetracycline, amoxicillin and ciprofloxacin respectively. Intermediate sensitivity was found as 35.00%, 30.00%, 15.00%, 10.00%, 10.00%, 05.00% and 0.00% to doxycycline, ciprofloxacin, amoxicillin, levofloxacin, erythromycin, neomycin and oxytetracycline, respectively. The study highlighted the importance of hygiene practices, enhancing public awareness and practicing rational use of antimicrobial drugs with a view to curbing the spread of resistant bacteria.

TITANIUM-MEDIATED SYNTHESIS AND Pd-CATALYZED DERIVATIZATION OF THIOPHENE CARBOXYLATES: ANTIBACTERIAL EVALUATION AGAINST NDM- β LACTAMASE-PRODUCING KLEBSIELLA PNEUMONIAE (ST147)**Aqsa Kanwal¹, Mujahad Abbas¹, Abid Mahmood² and Nasir Rasool^{1*}**¹ Department of Chemistry, Government College University Faisalabad, 38000, Pakistan² Department of Pharmaceutical Chemistry, Government College University, Faisalabad, 38000, Pakistan

Abstract: NDM-1-KP ST 147 remains a serious challenge in clinical practice, primarily due to its increasing resistance to carbapenems and its hypervirulent characteristics. A range of virulence factors is involved in this hypervirulence, and the mechanisms underlying carbapenem resistance are complex and multifaceted. The NDM KP (ST147) has emerged as a recent addition to the family of successful clones within the species. In this study, we synthesized methyl 3-(4-chlorobenzamido) 4-methylthiophene-2-carboxylate (**3**) by reacting amino thiophene (**1**) with 4-bromobenzoic acid (**2**) in the presence of TiCl₄ (catalyst) and pyridine. The Suzuki coupling of compound (**3**) led to the synthesis of a library of derivatives (**4a-4f**), which were obtained with yields varying from 56% to 71%. Subsequently, the synthesized molecules (**4a-4h**) were assessed for their antibacterial activity against clinically isolated NDM- β -lactamase (ST147). Further, *In silico* studies were carried out by using protein with the PDB ID: 5N5I, derived from NDM-KP (ST147). The chloro-substituted molecule **4e**, which shows potential as a drug candidate (MIC = 3.125 μ g/mL and MBC = 6.25 μ g/mL), displayed the highest level of effectiveness against resistant bacterial strains. Moreover, DFT calculations were employed to determine the frontier molecular orbitals, molecular electrostatic potential (MEP) maps, HOMO-LUMO energy values, hyperpolarizability, and reactivity descriptors for each compound. In this series, compound **4c**, where biphenyl is substituted with OCH₃, exhibits the smallest energy gap of 4.24 eV and 4.51 eV, along with the highest hyperpolarizability values of 5495.62 Hartree. This compound, being the least stable, results in the most significant nonlinear optical (NLO) response. In the next phase of the *in vivo* experimental trial, the lead molecule could present an alternative therapeutic option.



**QARD-E-HASANAH FINANCING AND FARM PRODUCTION EFFICIENCY:
EVIDENCE FROM RURAL BANGLADESH**

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Abstract

The main objective of this study is to examine the impact of Qard e Hasana on farm production efficiency of rural households in Jhenidah district of Bangladesh. In this case study a multistage sampling approach was adopted for selecting 200 households farm in rural area from Jhenidah district. Regression (probit) model, and an analysis of the stochastic frontier production were used to assess the data that had been gathered. The bulk of the heads of rural agricultural households are in their active years, the research showed. It was also shown that the majority of farm household heads possess a medium level of farming expertise and technical proficiency. According to probit regression result, age of the microcredit borrower (Value of $P < 0.05$), size of the farm (Value of $P < 0.01$), size of household (Value of $P < 0.01$), experience in farming (Value of $P < 0.01$), and educational status (Value of $P < 0.05$) are the important variables that affect rural farm in accessing Qard e Hasana. According to results output of the farm rises with size of the farm (Value of P is less than 0.05), family labor (Value of P is less than 0.05), and hired labor (Value of Value of P is less than 0.05), but falls

with an expansion of intermediate materials (Value of P is less than 0.10). According to inefficiency model, Qard e Hasana (Value of $P < 0.05$), age of the borrower (Value of $P < 0.05$), experience in farming (Value of $P < 0.01$), educational status (Value of $P < 0.05$), size of household (Value of $P < 0.10$), and education (Value of $P < 0.05$) all contribute to a farmer's technical efficiency. The average technical efficiency of 0.79 suggests that there is opportunity for a 21 percent increase in technological efficacy of households' farm. Farm production rises with the addition of land, family, and hired labor, whereas intermediate inputs diminish efficiency. For a sustainable policy option to promote production capability among households' farm in the research area, it is necessary to improve farmer education and raise knowledge of the benefits of Qard e Hasana.

Key Words: Qard e Hasana, Technical Efficiency, Rural Farm Households, Probit Regression, Stochastic Frontier Production Function.

ISLAMIC SOCIAL FINANCE AND COMMUNITY DEVELOPMENT: EMPIRICAL EVIDENCE ON POVERTY ALLEVIATION AND ECONOMIC EQUITY

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Abstract

In Bangladesh, despite decades of economic progress, income disparity and poverty continue to be serious issues. Traditional social safety nets often fail to adequately reach marginalized communities, highlighting the need for inclusive and sustainable alternatives. Islamic Social Finance (ISF) comprising *zakat*, *waqf*, and *Qard al-Hasanah* (interest-free microfinance)—offers a promising framework for community empowerment, economic justice, and poverty reduction. This study examines the effectiveness of ISF mechanisms in improving household income, access to essential services, and overall socioeconomic well-being in Bangladesh. A mixed-methods approach was employed, combining quantitative surveys of 100 beneficiary households with qualitative interviews and focus group discussions involving program participants and institutional representatives. Multiple regression analysis was applied to assess the impact of *zakat*, *waqf*, and *Qard al-Hasanah* on poverty alleviation and economic equality, while governance quality was tested as a moderating variable. Descriptive statistics reveal that 68% of households received *zakat*, 45% benefited from *waqf*-supported services, and 52% participated in *Qard al-Hasanah* schemes. On average, household income increased by 18%. Regression results indicate that *zakat* had the strongest positive impact on poverty reduction ($\beta = 0.278$, $p < 0.001$) and economic equality ($\beta = 0.250$), followed by *Qard al-Hasanah* ($\beta = 0.221$ and 0.200) and *waqf* ($\beta = 0.193$ and 0.180). Governance quality significantly strengthened these relationships, suggesting that transparency, accountability, and effective institutional management amplify ISF's developmental impact. Qualitative evidence reinforces these findings, highlighting improvements in living standards, education, healthcare access, and community trust, alongside challenges such as unequal distribution and limited public awareness. The study concludes that well-governed ISF programs can effectively complement conventional welfare systems, reduce poverty, and promote equitable economic growth in Bangladesh—contributing to sustainable and inclusive national development.

Keywords: Islamic social finance, poverty alleviation, economic equity, community development, Bangladesh

**RABIES AWARENESS AND PREVENTION EDUCATION AMONG CHILDREN
UNDER 15 YEARS OF AGE IN THE ASIAN REGION: A ONE HEALTH
PERSPECTIVE**

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Abstract

Rabies is a zoonotic disease caused by rabies virus of mammals, including humans, cats, dogs, wildlife, and farm animals and the most common way for human is through a dog bite. The WHO estimates that endemic canine rabies kills about 55,000 people each year, with over 31,000 of those deaths mostly children occurring in Asia alone. Children account for 45%–60% of human rabies deaths due to receiving inadequate or no post-exposure therapy in the majority. This paper highlights the rabies education level including basic knowledge, awareness, prevention, post-exposure behavior of children in Asian region. This paper includes searching of PubMed, Scopus and Google Scholar for articles applying predefined inclusion and exclusion criteria as focusing on child-specific education and One Health perspectives. The paper supports SDG (Sustainable Development Goals) 3, 4, 10, 11 by reducing mortality especially in children, promoting rabies prevention through a One Health approach in child education programs, creating health inequalities as well as community based awareness program. The majority of Asian research found that school-age children and instructors had inadequate baseline awareness about rabies. Across several regions, including India, Bhutan, Sri Lanka, Myanmar, Bangladesh, Philippines educational interventions such as school workshops, structured awareness programs, school-based One Health programs, parent-teacher conferences, wall magazines, and morning assembly activities consistently increased knowledge, perception scores, and safe behavior. Overall, child-focused rabies education programs demonstrated clear positive impacts across Asia, although the quality and reach of interventions varied by location. Though the events did not always result in better preventative behaviors, educational interventions regularly raised rabies knowledge and perceived vulnerability, underscoring the necessity for well-thought-out, focused initiatives. Making policy for valid educational chapter in lecture book, collaboration of international organizations like Global Alliance for Rabies Control (GARC) can boost it. Enhancing rabies education empowers children and promotes prevention across Asia.

Keywords: Rabies education, children, Asia, one health.

EXTRACTION, MODIFICATION AND CHARACTERIZATION OF BIOPOLYMERS NATIVE TO AVOCADO SEEDS

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Abstract

Avocado seeds are waste agro-industrial by-products which can be used as a huge source of unconventional starches. Microwave assisted extraction technique has been employed which has been shown to be inexpensive, efficient, rapid and a simple extraction technology for the extraction of polymer starch from avocado seed, as only water is used as extracting solvent. However, this did induce some differences in properties and structure of polymer starch such as granular structure, solubility, water absorption capacity, different size and structure of chains and molecular weight. In the current research, starch extracted from microwave assisted extraction shows chains of small size as compared to conventional extracted starch chains. The small chain starch extracted by using this protocol can provide a variety of new applications; can be used in biotechnological projects (formation of oligomer with bio activity and nanoparticle formations). MAE starch showed high solubility so can give better water dispersion in the food industry. The applications of polymer starches in world is huge and modifications in starches are so many that they formulate innumerable applications. Avocado seed starches have a great potential in food applications as meat production, sauces, candies, drinks and bread products. This polymer starches have wide range of applications in pharmaceutical industry, biodegradable polymer for packaging of food to prevent the plastics, better antibacterial activity and a good antioxidant.

Keywords. Avocado, biopolymer, microwaves, gelling agent

HOW DO CORPORATE GOVERNANCE PRACTICES INFLUENCE ORGANIZATIONAL PERFORMANCE AMONG LISTED COMPANIES IN INDIA?

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Abstract

This study investigates the effect of corporate governance practices on organizational performance among listed companies in India (Kerala). With increasing focus on transparency and accountability, understanding how corporate governance mechanisms influence performance has become essential. The research paper examines the impact of corporate governance practices, sources of awareness, and sources of implementation on shaping organizational performance, including Return on Equity, Return on Investment, Earnings per Share, and Return on Assets. Data were collected from two respondent groups—Key Managerial Personnel (KMP), including Managing Directors, CEOs, Chief Financial Officers, and shareholders—offering managerial and investor perspectives. Purposive sampling was used for KMPs due to their familiarity with corporate governance mechanisms, while convenience sampling was applied to shareholders.

The study used Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess both the measurement and structural parts of the model. The analysis of the measurement model confirmed that reliability standards were met, as all constructs showed consistent internal measurement. Additionally, convergent and discriminant validity criteria were satisfied, confirming that the indicators accurately measured the intended constructs and were distinct from each other. These findings ensured that the model was statistically valid for further structural analysis.

The structural model evaluation indicates satisfactory model fit and acceptable predictive relevance, confirming the suitability of the proposed framework. Findings showed that corporate governance practices positively influence organizational performance, focusing the importance of robust corporate governance systems. The source of implementation emerged as a particularly strong contributor, highlighting the significance of how effectively governance practices are executed within organizations. Meanwhile, sector-wise analysis like manufacturing and service sectors indicated no meaningful variation in the corporate governance–performance relationship across industries, suggesting that the effect of good corporate governance is consistent irrespective of sectoral differences.

Overall, this study concluded that strong corporate governance practices, supported by effective implementation mechanisms, play an essential role in improving organizational performance. The results offer valuable insights for policymakers, regulators, corporate leaders, and investors committed to strengthening corporate governance standards and improving performance outcomes in the Indian corporate environment.

Keywords: corporate governance, organizational performance, audit committee, listed companies

**EFFECTS OF PERSONALISED LEARNING METHOD ON THE ACHIEVEMENT
OF STUDENTS IN JOS NORTH LOCAL GOVERNMENT AREA, PLATEAU STATE,
NIGERIA**

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&

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ABSTRACT

The aim of the study was to determine the effects of Personalized learning on junior secondary II students' achievement in Basic Science and Technology in Jos North Local Government Area, Plateau state, Nigeria. Two objectives, two research questions as well as two null hypotheses were raised to guide the study. A quasi-experimental research design was used. The study population consisted of all 1,9678 male and female JSS II students in 22 Government Secondary Schools in Jos North Local Government Area, Plateau State. A sample of 112 JSS II students was selected for the study. The Basic Science and Technology Achievement Test (BSTAT) was used to collect the data. Reliability coefficient determined using Kuder- Richardson and had a reliability coefficient of 0.69, indicating acceptable internal consistency for the instruments. The data collected was analyzed using mean and standard deviation for answering the research questions, while ANCOVA was used to test the null hypotheses at 0.05 level of significance. The findings of the research showed that: the use of personalized learning was effective in enhancing teaching and learning. The personalized learning approach significantly improved the achievement scores of students in the experimental group compared to the control group that was exposed to the lecture method. The research recommended among other recommendations that; school proprietors should support the integration of the personalized learning approach in Basic science and Technology classrooms by providing necessary resources and fostering an environment conducive to student-centered teaching and learning. Teachers should receive ongoing professional development and training on how to effectively implement personalized learning strategies. Teachers should be equipped with the necessary tools and pedagogical skills to maximize the engagement and learning outcomes of their students through personalized learning approach.

Key words: Basic Science and Technology, Achievement, Personalized Learning.

INFLUENCE OF ROOT SYSTEM ARCHITECTURE ON CROP YIELD AND PERFORMANCE OF CEREALS (RICE, WHEAT, MAIZE)

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Abstract

Plant root is an important factor for the growth and development of a crop. Greater root system uptake nutrients and water molecules from the soil easily. This study highlights how influence the root system to uptake the resources from the soil. Cereal crops with a deep root system increase the growth and yield of the crops. It we easily seen in some rice varieties. Some rice varieties possess deep root than normal root system in this case, water and nutrient uptake more than the normal varieties as a result the growth of these crop increase. Deeper roots help to uptake nitrogen, phosphorus, and potassium to increase the yield and help to better tillering of the crops. Plant roots also help to survive in drought stress conditions and protect from lodging to the crops. Lodging causes great yield loss in the cereals. So if we want to increase the yield and growth of cereals in stressful conditions (like drought, salinity), we need to improve the root system of the cereal crop. Deeper root system plays a crucial role to survive in the adverse conditions and increase the yield then the normal root system varieties. Because shallow root uptake nutrients from upper zone, that means small area, ultimate uptake small amount of nutrients.

Keywords: Root, Nutrient, Water

NUTRITIONAL AND MICROBIAL ASSESSMENT OF TRADITIONAL SEMI-FERMENTED FISHERIES PRODUCTS

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This study evaluated the nutritional composition and microbial quality of traditional semi-fermented fish products from different regions of Bangladesh, focusing on their safety and nutritional value. Despite their significant role in the local diet, there is limited data on their quality. The study analyzed proximate composition (moisture, protein, fat, ash, fiber, carbohydrate) and microbial quality (Standard Plate Count, *Salmonella* spp., *Vibrio cholerae*, *V. parahaemolyticus*, *E. coli*). Results showed variations in proximate composition: shidal shutki paste had the highest protein ($38.59 \pm 0.54\%$) and lowest moisture ($38.44 \pm 0.38\%$), while chepa shutki had the highest fat ($10.09 \pm 0.75\%$) and ash ($14.36 \pm 0.41\%$). Whole fish shidal shutki had the highest moisture ($44.35 \pm 5.65\%$) and carbohydrates ($6.37 \pm 3.15\%$). Microbiologically, chepa shutki exhibited the highest Standard Plate Count (7.87 ± 7.59 log cfu/g), followed by whole fish shidal shutki (7.82 ± 7.61 log cfu/g), and shidal shutki paste (7.25 ± 6.81 log cfu/g). *E. coli* was present at 0.3 mpn/g across all products, indicating hygiene issues, while *Salmonella* spp., *Vibrio cholerae*, and *V. parahaemolyticus* were absent. The study indicates that variations in composition depend on raw materials and regional processing. High protein content highlights the nutritional value, while high SPC values, particularly in chepa shutki, suggest spoilage risks and inadequate hygiene. The study calls for improved hygienic practices, quality control, and better marketing to ensure safety and broader acceptance of these traditional fishery products.

Keywords: shidal shutki, chepa shutki, proximate, microbial

INTELLIGENT CONTROL OF ENERGY SHARING IN WIND BASED MICROGRIDS

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Abstract

The global energy transition promotes the development of microgrids integrating renewable sources such as wind energy. However, the intermittency of these sources creates challenges in terms of stability, synchronization, and optimal energy flow management. This research proposes an artificial intelligence-based approach to optimize control, synchronization, and energy sharing among distributed units within a microgrid connected to the national grid. The methodology relies on reinforcement learning algorithms and neural networks to dynamically adjust control parameters according to load conditions and generation fluctuations. Preliminary simulation results show a significant improvement in system stability and a reduction in energy losses. Furthermore, the proposed model can be adapted to different configurations of distributed generation systems, ensuring flexibility and scalability for real applications. Future work will focus on experimental validation through a laboratory-scale microgrid platform integrating real-time data acquisition and hardware-in-the-loop simulation. This step aims to confirm the robustness and adaptability of the proposed intelligent control under realistic operating conditions, paving the way toward autonomous and resilient smart energy systems. So it's mandatory to take in consideration many external conditions which influence the stability of these microgrids.

These findings highlight the potential of intelligent control strategies for enhancing the integration of renewable sources in modern smart grids.

Keywords: Microgrid, wind energy, optimization, synchronization, energy sharing, Machine Learning;

HEATWAVES AND STUDENT'S HEALTH: IMPACTS AND ADAPTATION STRATEGIES

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Abstract

This study explores the physical health and academic impacts of heatwaves on university students, find out how the students reduce these impacts, and propose some probable ways to reduce long term heatwave impacts and strengthen student's resilience. Using a mixed methods approach, this study found that the Bangladeshi university students experience several physical health impacts during heatwaves i.e., excessive perspiration, dehydration, fatigue, dizziness, heat allergies, and shortness of breath. These health hazards often affect their academic performances – irregular class attendance, inadequate concentration on studies and classes, less involvement in extra-curricular activities, feel discomfort during examination, and poor performance in test. To reduce these impacts, they usually use several own adaptation strategies – drinking water and local drinks made by lemon, aloe vera, isabgul, and wood apple, taking shelter in shaded areas, following healthcare strategy (taking bath multiple times in a day, resting and sleeping on the floor, using umbrella and cap during outdoor activities, carrying water bottles in bag, using hand fan, using wet towels, and splashing water on face), changing food habits (taking light meals instead of heavy food, eating water soaked rice) changing study schedule (study early in the morning). This paper argues, these adaptation strategies can reduce short-term heatwave-induced effects, however, they might not be adequate enough for long-term protection. This study suggests, combined efforts of various stakeholders – the government, policy makers and university authorities, are required to minimize heatwaves vulnerabilities and strengthen student's resilience.

Keywords: Climate change, Heatwaves, Physical health and academic impacts, Own adaptation strategies, Bangladeshi university students.

**ASSESSING THE DIGITAL TRANSFORMATION OF SCHOLARLY
COMMUNICATION AND PUBLISHING PRACTICES IN SOUTH INDIAN
UNIVERSITIES: A SURVEY**

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Abstract

This study investigates the impact of digital transformation on scholarly communication and publishing practices in South Indian universities. The rapid advancement of Information and Communication Technologies (ICT), open access initiatives, and digital research platforms has significantly reshaped academic knowledge production and dissemination. Using a survey method, data were collected from faculty members, research scholars, and library professionals across selected universities in South India. The study examines the adoption of digital tools such as institutional repositories, academic social networks, e-journals, preprint servers, and reference management systems. Findings reveal increasing preference for digital publishing, enhanced visibility through open access platforms, and growing reliance on collaborative digital environments for research communication. However, challenges such as inadequate training, limited awareness of copyright and licensing, and infrastructural barriers persist. The study highlights the need for capacity-building programs, policy support, and improved technological infrastructure to strengthen digital scholarly publishing ecosystems in South Indian academic institutions.

Keywords

Digital transformation, scholarly communication, academic publishing, open access, institutional repositories, research visibility, South Indian universities.

REVOLUTIONIZING CANCER DIAGNOSIS: THE POTENTIAL OF 3D PRINTED NANOSENSORS

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Abstract: Cancer is a complicated illness with a worldwide impact, requiring ongoing breakthroughs in diagnosis and treatment. The application of 3D printing technology is increasingly recognized as an innovative tool in cancer diagnosis, offering enormous possibilities in detection and surveillance. The study aims to improve early diagnosis and prognosis for patients. 3D printing has become more popular for producing precise, customizable nanosensors with high sensitivity and specificity. The study covers the latest advances in 3D-printed cancer nanosensors. It discusses how inkjet printing, stereolithography, and fused deposition modeling can create intricate nanostructures with increased performance. Design and functionalization strategies for targeting nucleic acids, proteins, and circulating tumor cells are also covered. Nanomaterial-based sensors can detect tumor biomarkers, circulating cells, and extracellular vesicles, improving cancer diagnosis and survival. Integrating 3D-printed nanosensors with fluorescence, electrochemical, and surface-enhanced Raman spectroscopy allows rapid and accurate cancer diagnosis in clinical settings. The publication critically reviews and synthesizes previous research to show how 3D-printed nanosensors could improve cancer diagnosis as well as personalized therapy. The study explores the capacity of 3D-printed nanosensors to bring about significant changes in the field of cancer diagnostics. Using 3D-printed technology and additive manufacturing, these sensors provide exceptional sensitivity and specificity for the early identification of cancer biomarkers. Their ability to be customized allows for specific therapies for various types of cancer, offering substantial progress in precision medicine. The paper analyzes the most recent advancements, obstacles, and potential future opportunities of 3D-printed nanosensors, with a specific focus on their significant impact on transforming cancer diagnosis.

Keywords: 3D printing, Nanosensor, Stereolithography, Cancer diagnosis, personalized therapy,

**AİLE ÖNGÖRÜLEMEZLİĞİ VE AİLE İŞLEVSELLİĞİNİN YEME
BOZUKLUKLARI ÜZERİNDEKİ ROLÜ: SİSTEMATİK DERLEME**
THE ROLE OF FAMILY UNPREDICTABILITY AND FAMILY FUNCTIONING IN
EATING DISORDERS: A SYSTEMATIC REVIEW

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Bu çalışma, yeme bozuklukları (YB) ile aile öngörülemezliği ve işlevselliği arasındaki ilişkileri bütüncül bir çerçevede inceleyen güncel ampirik çalışmaları değerlendirmektedir. İncelenen araştırmalar dört temel soruya odaklanmaktadır:

- (1) Farklı YB tanıları arasında aile öngörülemezliği ve işlevselliğinde anlamlı farklılıklar bulunmakta mıdır?
- (2) Aile üyeleri, aile işlevselliğini birbirlerinden farklı algılamakta mıdır?
- (3) Aile öngörülemezliği ve işlevselliği, YB semptomlarıyla ilişkili midir?
- (4) YB tedavisi aile öngörülemezliğini ve işlevselliğini değiştirmekte midir ve bu değişim tedavi sonuçlarını etkilemekte midir?

Çalışmaların çoğu tanılar arasında belirgin farklılık saptamasa da bulunan sınırlı bulgular tıknırcasına yeme/çıkarma davranışları gösteren bireylerde aile işlevselliğinin daha olumsuz algılandığını göstermektedir. Aile üyeleri arasındaki algı farklılıkları dikkat çekici olup, hastaların aile ortamını ebeveynlere kıyasla daha olumsuz değerlendirdiği tutarlı biçimde ortaya konmuştur. Bulgular, zayıf aile işlevselliğinin daha şiddetli YB belirtileriyle ilişkili olduğunu göstermekte; özellikle düşük yakınlık, yüksek çatışma ve aile içi rollerin belirsizliği önemli risk alanları olarak öne çıkmaktadır. Aile öngörülemezliği, ailenin davranış kalıpları ve düzenleyici sistemlerinde görülen tutarsızlıklardır. Aile öngörülemezliği, aile üyelerinin bakım sağlama gibi temel sorumluluklarını (sevgi gösterme ve geçim sağlama) tutarlı bir biçimde yerine getirememesi ya da yerine getirmeyi istememesi durumunda ortaya çıkmaktadır.

Tedavi süreçlerine ilişkin bulgular ise çeşitlilik göstermektedir. Bazı çalışmalar, aile temelli müdahalelerin iletişim, uyum ve davranış kontrolü gibi alanlarda iyileşme sağladığını gösterirken, tedavi türlerinin ve ölçüm araçlarının heterojenliği tutarlı sonuçlara ulaşmayı güçleştirmektedir. Bununla birlikte, aile işlevselliğindeki iyileşmenin belirli semptom alanlarında düzelmeyi kolaylaştırdığına dair kanıtlar mevcuttur. Benzer şekilde, aile öngörülemezliğinin azalması da bireylerin daha öngörülebilir ve güvenli bir aile ortamına erişmesini sağlayarak tedavi süreçlerine olumlu katkıda bulunabilmektedir. Çalışma genel olarak, YB'nin gelişimi, sürdürülmesi ve tedavisinde aile öngörülemezliği ve işlevselliğinin kritik bir belirleyici olduğunu ve özellikle az incelenmiş gruplar (erkekler, kaçınan/kısıtlı yiyecek alımı bozukluğu, tıknırcasına yeme bozukluğu) için daha fazla araştırmaya ihtiyaç duyulduğunu ortaya koymaktadır.

Anahtar Kelimeler: Aile Öngörülemezliği, Aile İşlevselliği, Yeme Bozuklukları

ABSTRACT

This study reviews current empirical research examining the relationships between eating disorders (ED) and family unpredictability and functionality within a comprehensive framework. The studies reviewed focus on four key questions:

- (1) Are there significant differences in family unpredictability and functionality across different ED diagnoses?
- (2) Do family members perceive family functioning differently from one another?
- (3) Are family unpredictability and functioning related to ED symptoms?
- (4) Does ED treatment change family unpredictability and functioning, and does this change affect treatment outcomes?

Although most studies did not find significant differences between diagnoses, the limited findings indicate that family functioning is perceived more negatively in individuals who exhibit binge eating/purging behaviors. Perception differences among family members are noteworthy, with patients consistently reporting a more negative assessment of the family environment compared to parents. Findings indicate that poor family functioning is associated with more severe ED symptoms; specifically, low closeness, high conflict, and unclear family roles emerge as significant risk areas. Family unpredictability refers to inconsistencies in the family's behavioral patterns and regulatory systems. Family unpredictability arises when family members are unable or unwilling to consistently fulfill basic responsibilities such as providing care (showing affection and providing for the family).

Findings regarding treatment processes vary. While some studies show that family-based interventions improve areas such as communication, adjustment, and behavior control, the heterogeneity of treatment types and measurement tools makes it difficult to achieve consistent results. However, there is evidence that improvements in family functioning facilitate improvement in specific symptom areas. Similarly, a reduction in family unpredictability can also contribute positively to treatment processes by enabling individuals to access a more predictable and secure family environment. Overall, the study highlights that family unpredictability and functioning are critical determinants in the development, maintenance, and treatment of EDs, and that more research is needed, particularly for understudied groups (men, avoidant/restrictive food intake disorder, binge eating disorder).

Keywords: Family Unpredictability, Family Functionality, Eating Disorders

**KOZLU BARAJI OLASI YIKILMA SENARYOSUNDA TAŞKIN YAYILIMININ
HEC-RAS İLE MODELLENMESİ VE KRİTİK ALTYAPI ETKİLEŞİMLERİNİN
DEĞERLENDİRİLMESİ**

MODELLING FLOOD SPREAD USING HEC-RAS and ASSESSING CRITICAL
INFRASTRUCTURE INTERACTIONS IN A POTENTIAL KOZLU DAM FAILURE
SCENARIO

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ÖZET

Baraj yapılarının potansiyel arızalanması neticesinde mansap havzasında meydana gelebilecek ani taşkın dalgaları, sosyo-ekonomik ve çevresel açıdan ciddi bir risk potansiyeli arz etmektedir. Bu çalışma, Zonguldak il sınırları dahilinde, Ulutan Çayı üzerinde konumlanan Kozlu Barajı'nın statik bütünlüğünden bağımsız olarak kurgulanan varsayımsal bir yıkılma senaryosu temelinde, hidrolik taşkın analizlerinin gerçekleştirilmesine odaklanmıştır. Çalışmanın temel motivasyonu, baraj mansabında yer alan kritik altyapı tesisleri ve yoğun yerleşim bölgeleri üzerindeki potansiyel taşkın etkileşimlerini kantitatif olarak belirlemektir. Metodolojik çerçevede, Devlet Su İşleri (DSİ) tarafından belirlenen maksimum deşarj değerleri girdi olarak kullanılmış ve tek boyutlu kararsız akım (unsteady flow) prensiplerine dayalı gelişmiş bir hidrolik modelleme yazılımı aracılığıyla taşkın ötelemesi gerçekleştirilmiştir. Nehir yatağı pürüzlülük katsayısının tayini, Modifiye Cowan Metodu ile hassasiyetle gerçekleştirilmiş; coğrafi veriler ise Sayısal Yükseklik Modeli haritasından elde edilerek model geometrisi oluşturulmuştur. Analiz sonuçları, varsayımsal yıkılma durumunda öngörülen pik deşarjın, taşkın derinliğinin 12 metreye ulaşabilme potansiyeli ile yüksek düzeyde bir taşkın tehlikesi teşkil ettiğini ortaya koymuştur. Taşkın yayılım haritası çıktıları, Kozlu ilçe merkezindeki yerleşim alanlarının önemli bir kesiminin, Zonguldak İçme Suyu Arıtma Tesis'i'nin ve Türkiye Taş Kömürü Kurumu Kozlu İşletme Müdürlüğü gibi stratejik öneme sahip tesislerin kayda değer ölçüde hasar görebileceğini göstermektedir. Bu bulgular, bölgeye özgü acil durum eylem planlarının ve entegre taşkın risk yönetim stratejilerinin bilimsel verilerle desteklenerek revize edilmesi gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Hidrolik Modelleme, Baraj Yıkılması Analizi, Kararsız Akım, Taşkın Riski Değerlendirmesi, Kritik Altyapı Etkileşimi.

ABSTRACT

The potential failure of dam structures could result in sudden flood waves in the downstream basin, posing a serious risk potential from a socio-economic and environmental perspective. This study focuses on conducting hydraulic flood analyses based on a hypothetical collapse scenario, independent of the static integrity of the Kozlu Dam, located on the Ulutan River within the boundaries of Zonguldak province. The main motivation of the study is to quantitatively determine the potential flood interactions on critical infrastructure facilities and densely populated areas located downstream of the dam. Within the methodological framework, maximum discharge values determined by the State Hydraulic Works (DSİ) were used as

inputs, and flood propagation was performed using advanced hydraulic modelling software based on one-dimensional unsteady flow principles. The determination of the riverbed roughness coefficient was performed with precision using the Modified Cowan Method; geographical data were obtained from the Digital Elevation Model map to create the model geometry. The analysis revealed that the predicted peak discharge in the hypothetical collapse scenario posed a high level of flood risk, with the potential for flood depths to reach 12 meters. Flood spread map outputs indicate that a significant portion of the residential areas in the Kozlu district center, the Zonguldak Drinking Water Treatment Plant, and strategically important facilities such as the Turkish Coal Institution Kozlu Operations Directorate could suffer considerable damage. These findings highlight the need to revise region-specific emergency action plans and integrated flood risk management strategies based on scientific data.

Keywords: Hydraulic Modelling, Dam Failure Analysis, Unsteady Flow, Flood Risk Assessment, Critical Infrastructure Interaction.

AI-POWERED TRANSFORMATION OF HR PRACTICES: A STUDY ON IT COMPANIES IN UTTAR PRADESH

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Abstract

This research explores how AI changes HRM processes in IT organizations in Uttar Pradesh, India. A mixed-method research design is used, combining the qualitative aspects of the literature and the experiences of experts with an empirical survey of 277 HRM professionals and employees. The research indicates a moderate to high use of AI tools in HRM operations that include recruitment, training, performance appraisal, and workforce analytics, with recruitment and decision-making being the most frequently adapted areas. In addition, statistical analysis shows weak and statistically insignificant relationships between use of AI, HR transformation and performance, demonstrating that at this stage, AI remains operational use rather than a transformative use. Use of AI is challenged by lack of digital infrastructure, low HR expertise in AI, lack of integration of the AI and HR function. The research highlights the path to AI potential, including capacity building, establishing ethical and governance principles and managing change. The findings highlight readiness to maximize AI potential relies on organizational readiness, support leadership to engage, capacity building and continuous evaluation to use AI consequence for sustainable HR transformation and employee performance in the digital age.

Keywords

Artificial Intelligence, Human Resource Management, SPSS Analysis, IT Companies, Digital Transformation, AI Adoption, Uttar Pradesh

INNOVATIONS IN ARTIFICIAL TISSUE ENGINEERING

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Abstract

The field of Artificial Tissue Engineering is rapidly developing. Artificial Intelligence (AI) can be used in several ways, such as reducing post-transplant problems, improving accuracy and efficiency, and speeding up operations. It combines regenerative medicine, bioengineering, and biomaterials. By creating customized medications, enhanced drug testing models, and creating functional tissue constructs for medicinal uses, artificial tissue fabrication seeks to better patient-specific treatments. Every technology is made to support cell proliferation and imitate the extracellular matrix. Advances in biocompatible materials, like hydrogels and biodegradable polymers, have significantly improved tissue integration and functionality. However, there may be issues with biological processes, immunological responses, and qualities when using advanced features. Researchers hope to improve tissue production methods in the future and create completely functional tissue that can work in unison with the human body.

Keywords: Artificial tissue engineering, Scaffold-based tissue engineering, biomaterials, 3D bioprinting, electrospinning, Biological process, Applications and Limitations.

A REVIEW: TOXICOLOGICAL IMPLICATIONS AND POSSIBLE SOLUTIONS OF NANOPARTICLES

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Abstract

Nanotechnology has transformed various industries, including healthcare, medicine, and manufacturing, by creating nanoparticles (NPs) with a wide range of therapeutic and functional capabilities. Although nanoparticles offer notable benefits, their potential toxic effects on biological systems remain a major concern. This review explores the characteristics of nanoparticles, such as their size, shape, and antioxidant properties, along with their applications across different systems. NPs have various toxic effects on biological systems. These effects encompass oxidative stress, inflammation, genotoxicity, immune system disruption, DNA damage, and apoptosis, affecting organ systems like the central nervous system (CNS), cardiovascular system (CVS), respiratory system, and reproductive system. Understanding the toxicological implications of NPs is crucial for their safe and effective application in biomedical fields. To mitigate potential risks and enhance safety, various strategies are reviewed, including improved NPs design, the use of biocompatible materials, surface modifications, and the development of advanced toxicity assessment methods. Despite these efforts, significant research gaps remain, necessitating further studies to optimize NPs applications while minimizing their adverse effects. The review also examines the mechanisms behind nanoparticle toxicity, and the possible solutions for managing toxicity, as well as approaches to reduce risks and explain the proper strategies to ensure the safe use of NPs.

Keywords: Nanoparticles, nanotoxicity, possible solutions

GEOMETRIC EFFECTS ON THE THERMODYNAMIC PROPERTIES OF NANOSTRUCTURED MATERIALS

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This study explores how geometry governs the thermodynamic behavior of nanostructured materials. By exploiting convective, conductive, and radiative heat transfer mechanisms, these structures attain precise thermal and optical control. We demonstrate that bio-inspired, intricately patterned geometries can generate remarkable thermodynamic phenomena, such as negative heat capacity. Our findings highlight a robust link between geometric form and thermal response, establishing geometry as a key design variable. This insight enables on-demand tuning of heat capacity and opens avenues for engineering exotic thermodynamic states in nanomaterials without altering their chemical composition.

Keywords: thermodynamic response, negative heat capacity, natural photonics, biophotonics, optics.

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İŞİTME ENGELLİ ELİT GÜREŞÇİLER İÇİN SOSYAL DESTEĞİN ANLAMI: NİTEL BİR İNCELEME

THE MEANING OF SOCIAL SUPPORT FOR ELITE DEAF WRESTLERS:
A QUALITATIVE STUDY

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ÖZET

Bu araştırmanın amacı, elit düzeyde güreş yapan işitme engelli sporcuların sosyal destek kavramına ilişkin algılarını, bu desteği nasıl tanımladıklarını ve kendi deneyimleri doğrultusunda bu desteğe yükledikleri anlamı nitel bir bakış açısıyla ortaya koymaktır. Araştırma, nitel araştırma yaklaşımı kapsamında betimleyici fenomenoloji deseni kullanılarak yürütülmüştür. Katılımcı grubunu, amaçlı örneklem yöntemiyle seçilen 8 elit düzey işitme engelli güreşçi (4 serbest stil, 4 grekoromen) oluşturmuştur. Katılımcılar, ulusal ve uluslararası düzeyde yarışan, en az 5 yıllık spor geçmişine sahip sporculardan seçilmiştir. Veriler, araştırmacı tarafından geliştirilen yarı yapılandırılmış görüşme formu aracılığıyla toplanmış; görüşmeler ortalama 20–30 dakika sürmüş ve işaret dili tercümanı eşliğinde gerçekleştirilmiştir. Görüşme verileri, MAXQDA 2020 nitel veri analizi yazılımı kullanılarak çözümlenmiş; analiz sürecinde betimsel analiz ve içerik analizi tekniklerinden yararlanılmıştır. Kodlama güvenilirliği iki bağımsız araştırmacı tarafından değerlendirilmiş ve Cohen's Kappa katsayısı .90 olarak hesaplanmıştır. Araştırma bulguları, “Sosyal Desteğin Anlamına İlişkin Algılar” başlığı altında toplanan temada 14 temel kod etrafında şekillenmiştir. Bu kodlar arasında güven ve güvende hissetme, anlaşıldığını hissetme, görülme/fark edilme, duyulmak, değer verilme, kabul edilme, aidiyet, devam etme isteği, spora tutunma, moral bulma, zorluklarla baş etme gücü, kendini özel hissetme, sevmek/önemsenmek ve yardım/güç kaynağı yer almaktadır. Sonuçlar, işitme engelli elit güreşçilerin sosyal desteği yalnızca bir yardım biçimi olarak değil, aynı zamanda anlam, kimlik ve varoluşsal kabulün bir göstergesi olarak algıladıklarını ortaya koymaktadır. Sosyal destek, katılımcılar için “yardım edilmekten” ziyade “anlaşılmak, duyulmak ve değer görmek” anlamlarını çağırıştırılmaktadır. Bu durum, sosyal desteğin işitme engelli bireylerin yaşamında yalnızca işlevsel bir dışsal kaynak değil; aynı zamanda psikolojik, duygusal ve kimliksel düzeyde içsel olarak deneyimlenen çok katmanlı bir psikososyal kaynak olarak algıladıklarını göstermektedir.

Anahtar Kelimeler: Sosyal Destek, İşitme Engelli Sporcular, Güreş, Anlam, Nitel Araştırma, Fenomenoloji

ABSTRACT

The purpose of this study is to explore, from a qualitative perspective, the perceptions of elite-level deaf wrestlers regarding the concept of social support—how they define this support and the meanings they attribute to it based on their own experiences. The research was conducted using a descriptive phenomenological design within the framework of the qualitative research approach. The participant group consisted of eight elite-level deaf wrestlers (four freestyle and four Greco-Roman) selected through purposeful sampling. The participants were athletes who had competed at both national and international levels and had at least five years of sporting experience. Data were collected through a semi-structured interview form developed by the researcher. Each interview lasted approximately 20–30 minutes and was conducted with the assistance of a sign language interpreter. The interview data were analyzed using MAXQDA 2020 qualitative data analysis software, employing both descriptive analysis and content analysis techniques. The coding reliability was evaluated by two independent researchers, and Cohen’s Kappa coefficient was calculated as .90, indicating high agreement.

The findings of the study were organized under the main theme titled “Perceptions of the Meaning of Social Support,” which was structured around 14 key codes. These codes included:

trust and feeling safe, feeling understood, being seen/recognized, being heard, being valued, being accepted, belonging, willingness to continue, holding on to the sport, finding morale, strength to cope with challenges, feeling special, being loved/considered important, and source of help/power.

The results revealed that elite deaf wrestlers perceive social support not merely as a form of assistance, but also as a symbol of meaning, identity, and existential acceptance. For the participants, social support evoked meanings associated less with “being helped” and more with “being understood, heard, and valued.” This indicates that social support is perceived not only as a functional external resource in the lives of deaf individuals, but also as a multilayered psychosocial resource that is internally experienced on psychological, emotional, and identity-related levels.

Keywords: Social Support, Deaf Athletes, Wrestling, Meaning, Qualitative Research, Phenomenology

POLYANILINE-REDUCED GRAPHENE-OXIDE COMPOSITES AND THEIR ELECTROCHEMICAL APPLICATIONS

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Abstract

From the point of view of both experimental and theoretical scientific aspects graphene (GR) has attracted tremendous attention in recent years. Owing to its excellent properties it has varied applications in several fields such as in electronic devices, sensors, etc. With these useful advantages it has also been used for the utilization of GR-based materials in the fabrication of nanocomposites with different polymer matrixes. Among them, GR-based polyaniline (PANI-GR) nanocomposites have attracted a great deal of interest due to their new properties or enhanced performances. Reducing graphene oxide (GO) to produce rGO is an extremely vital process as it has a large impact on the quality of the rGO produced. rGO-PANI composite is synthesized by the liquid-liquid interfacial polymerization method. The synthesized composite was thoroughly characterized by different analytical techniques. The electrochemical and electrical conductivity properties of both PANI and PANI/rGO composite were investigated using cyclic voltammetry analysis and Four-probe method respectively. PANI/rGO composite showed improved electrochemical and electrical performances than the neat polymer.

Keywords: Graphene, polyaniline, composite, electrochemical properties

THE OPTIMAL DESIGN AND INCLUSIVE DEPLOYMENT OF CENTRAL BANK DIGITAL CURRENCIES (CBDCS) IN EMERGING MARKETS: A THEORETICAL FRAMEWORK

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Abstract

This conceptual paper addresses a critical gap in the emerging CBDC literature by proposing an integrated theoretical framework that systematically conceptualizes the design imperatives and deployment pathways necessary for Central Bank Digital Currencies (CBDCs) to effectively advance financial inclusion in emerging markets. Despite growing policy interest and pilot implementations worldwide, scholarship lacks a cohesive multidisciplinary model that strategically bridges monetary economics, institutional theory, and socio-technical systems analysis to guide truly inclusive CBDC architecture.

The proposed framework synthesizes seminal insights from monetary theory, development economics, and institutional design to construct a three-pillar analytical model centered on Accessibility (removing structural barriers), Trust (establishing legitimacy and security perceptions), and Utility (delivering tangible economic value to end-users). We formally theorize that CBDC success depends not solely on technological sophistication but on the strategic navigation of fundamental design trade-offs. These include the tension between privacy versus regulatory compliance, and between financial stability versus private-sector innovation. The framework systematically delineates critical design parameters across both wholesale and retail CBDC architectures, examining how foundational technical choices, such as tokenization models and cross-platform interoperability, differentially impact financially excluded communities.

Furthermore, we develop a typology of context-specific implementation pathways that are adaptive to varying levels of digital infrastructure maturity and regulatory capacity across diverse emerging markets. This paper meticulously theorizes potential implementation risks that threaten inclusive outcomes, notably commercial bank disintermediation effects on credit availability and the entrenchment of digital literacy divides among vulnerable populations. To address these, the framework proposes a set of institutional safeguards and complementary

policy mechanisms, including phased rollout strategies and capacity-building interventions, necessary for risk mitigation.

This contribution provides scholars and policymakers with a structured analytical tool for evaluating CBDC design decisions through an inclusion-centered lens. By establishing theoretical foundations for assessing trade-offs and contextualizing technical choices within broader socioeconomic systems, this framework serves as a vital conceptual blueprint for central banks seeking to harness CBDCs as instruments of equitable economic transformation. Keywords: Central Bank Digital Currency (CBDC), Financial Inclusion, Emerging Markets, Digital Currency Design, Socio-technical Systems

**STUDY OF THE PHYSICO-CHEMICAL AND BACTERIOLOGICAL QUALITY OF
GROUNDWATER: CASE OF THE GHAZAOUET REGION
(TLEMCCEN PROVINCE)**

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Abstract

Water is a vital natural resource that plays an essential role in numerous domestic, agricultural, and industrial activities. When destined for consumption, food preparation, or hygiene, it must satisfy strict physico-chemical and microbiological quality standards to ensure the protection of public health. In this context, an assessment of the quality of water sources intended for human use in the Ghazaouet region, located in the far northwest of the Tlemcen Province, was undertaken. This study focused on five water sources widely used by the local population: Ben Taghla, Ben Tawes, Ain El Mizab, Sidna Youchaa, and Ain Elkanout.

A series of physico-chemical and bacteriological analyses were conducted on water samples collected from these sites. The measured parameters included temperature, pH, electrical conductivity (EC), turbidity, color, total hardness, suspended solids (SS), dry residue, and alkalinity indicators such as carbonates (TA) and bicarbonates (TAC). Chemical indicators of pollution, including nitrites (NO_2^-) and orthophosphate, were also evaluated. To assess microbiological quality, the presence of total coliforms and fecal streptococci key indicators of fecal contamination was examined.

The results of the physico-chemical analyses showed that all sampled water sources meet the thresholds established by Algerian regulations and WHO standards, indicating an overall acceptable chemical quality. However, microbiological analysis revealed disparities among the sources. While two sites complied with bacteriological standards, the other three exceeded the permitted limits for microbial contamination. The significant presence of coliforms and fecal streptococci poses a potential health risk for residents relying on these sources for daily water needs, highlighting the necessity of improved sanitation measures and regular monitoring.

Keywords: Water quality, Physico-chemical, Bacteriological.

QUANTUM DOT-ENABLED PRECISION THERANOSTICS FOR EARLY-STAGE DISEASE DETECTION

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Abstract

The convergence of nanotechnology and molecular medicine has driven the development of theranostic systems capable of simultaneous diagnosis and therapy. Quantum dot-enabled precision theranostics represent a cutting-edge innovation with the potential to revolutionize early-stage disease detection and targeted treatment. Quantum dots (QDs), owing to their tunable emission spectra, exceptional brightness, and long-term photostability, offer superior imaging contrast compared to conventional fluorophores. When functionalized with disease-specific ligands, QDs can selectively bind to pathological cells, allowing accurate detection of malignancies, infections, and neurodegenerative changes at molecular-level resolution. Beyond diagnostics, multifunctional QDs can be engineered to deliver therapeutic agents—such as small-molecule drugs, siRNA, or photothermal triggers—directly to diseased tissues. Their ability to respond to external stimuli like light or magnetic fields enables remotely controlled, minimally invasive treatment modalities. Early research demonstrates that QD-based systems can detect pre-metastatic cancer niches, monitor drug release in real time, and eradicate tumor microenvironments with high precision while minimizing off-target toxicity. A key innovation lies in integrating QDs with AI-driven imaging analytics to interpret complex biomolecular signatures for predictive diagnostics. Despite their immense potential, challenges such as long-term toxicity, biodegradability, and regulatory approval must be addressed for clinical translation. Nevertheless, quantum dot-enabled theranostics provide a futuristic framework for personalized medicine, where early detection and targeted therapy converge into a single, ultra-precise platform.

Keywords: Quantum dots, theranostics, molecular imaging, targeted therapy, nanomedicine.

DAMAGE DETECTION METHODS FOR SQUARE-SECTION TUBES USING ULTRASONIC TECHNOLOGY

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Abstract

The safety and reliability of industrial structures represent a major challenge for the coming years. Metallic infrastructures are increasingly exposed to intense mechanical, thermal, and environmental stresses, particularly in the energy, transportation, construction, and aeronautics sectors. In this context, the early detection of internal damage becomes essential to prevent failures, avoid service interruptions, and ensure effective maintenance. It is with this objective in mind that non-destructive testing (NDT) techniques have experienced significant development over the past decades.

The TOFD method proves particularly effective for detecting and sizing cracks in metallic structures. It is based on analyzing the time of flight of waves diffracted by the extremities of defects, thus enabling precise localization and direct evaluation of their height. Unlike conventional methods, TOFD provides comprehensive imaging of the inspected area while reducing the risk of interpretation errors. Owing to its performance, it is increasingly used for the inspection of welds, tanks, and tubes, particularly those with a square cross-section.

Keywords: Non destructive control, TOFD, Damage detection, Ultrasonic

PROVIDING THE MITOGENOME CHARACTERISTICS OF *MYOTIS DAUBENTONII* (KUHL 1817) (DAUBENTON'S BAT)

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ABSTRACT

Application of mitochondrial genome data is a promising method in terms of systematics and taxonomy of mammal species. In recent years, studies involving mitogenome analyses of several species, including bats, have increased because this method yields stronger and more reliable results compared to the studies performed using single gene regions. Bat species from Vespertilionidae is the second most diverse mammal order, and genetic studies have an important role in solving the taxonomic positions and phylogenetic relationships of the species. The present study represents the complete mitochondrial DNA sequencing of Daubenton's bat (*Myotis daubentonii* (Kuhl 1817)) along with the gene features. *M. daubentonii* is an Eurasian bat species and also distributed in the northern parts of Türkiye. One specimen collected from Rize Province was used in the mitogenome analyses, and the obtained 17283 base pair data contains 13 protein coding genes, 22 tRNA genes, 2 rRNA genes, and D-loop (control) region, and the majority of which are coded on the heavy strand. Besides, Adenin+Thymin (AT) content (64.80%) was found to be higher than Guanin+Cytosine (GC) content (35.20%). Phylogenetic analyses, including species belonging to the subfamily Myotinae confirmed that *M. daubentonii* clusters with other *Myotis* species for which mitogenome data is available. In this way, this study contributes to the literature with regard to genetic characterization, evolution, taxonomy, and phylogeny.

Keywords: Bat, DNA, Mitogenome, *Myotis*

**“INTEGRATIVE AI–NANOTECHNOLOGY FOR THE TARGETED
AMELIORATION OF CERVICAL CANCER PROGRESSION”**

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Abstract

Cervical cancer (CC) has historically been the fourth most common and deadliest malignancy among women worldwide. Early detection through cervical cytology screening, human papillomavirus (HPV) testing and effective therapeutic interventions are critical for preventing cervical intraepithelial neoplasia (CIN). Despite significant advances in nanotechnology, achieving accurate diagnosis of cervical cancer remains challenging due to inherent biological heterogeneity and clinical complexities. Artificial intelligence will move from being a simple diagnostic device to being used as a tool for effective therapy of cervical cancer. Advances in computer-aided technologies, including robotic systems and AI-driven platforms, are increasingly applied across screening, diagnostic, and treatment modalities. Moreover, integrating multi-omics approaches—genomics, epigenomics, proteomics, and metabolomics—with conventional chemotherapeutics offers a promising strategy to overcome the limitations of standard therapies. AI-based modeling, simulations, drug repurposing, and target identification further strengthen precision oncology approaches. By leveraging these cutting-edge technologies, there is substantial potential to reduce the global burden of cervical cancer, particularly in low- and middle-income countries, ultimately improving patient outcomes and advancing precision medicine. These developments underscore a transformative shift from conventional diagnostics to an integrated AI-enabled, multi-omics approach for comprehensive cervical cancer management.

Keywords: Cervical cancer, Artificial Intelligence (AI), Nanotechnology, Multi-omics

**DERİN ÖĞRENME GELİŞTİRME EKO-SİSTEMİNDE KRİTİK ARAÇLARIN
ENTEGRASYONU: BİR PLATFORM KULLANIM MODELİ
INTEGRATION OF CRITICAL TOOLS IN THE DEEP LEARNING
DEVELOPMENT ECOSYSTEM: A PLATFORM UTILIZATION MODEL**

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ÖZET

Yapay Zeka (YZ) teknolojilerindeki hızlı gelişmeler, YZ öğrenimi ve model geliştirme platformlarını bireysel ve kurumsal serüvenlerin ayrılmaz bir parçası hâline getirmiştir. Bu çalışma kapsamında incelenen YZ serüveni, geleneksel eğitim yollarından farklı olarak, modern YZ geliştirme ekosisteminin kritik araçlarını entegre eden hibrit bir platform kullanımı mimarisi sunmaktadır.

Modern YZ geliştirme süreçlerinde kullanılan platformlar, genellikle sadece veri seti ve temel kodlama ortamları sağlamaktadır. Ancak mevcut çözümler, model optimizasyonu ve ileri seviye transfer öğrenimi gibi süreçlerde entegre bir akış sunamamaktadır. Bu durum, ileri düzey modelleme ve yüksek hesaplama gücü gereksinimlerinde kesintisiz operasyon ihtiyacını karşılamada eksiklik yaratmaktadır.

İncelenen bu serüvende kullanılan ana araçlar olan Kaggle, Hugging Face ve Google Colab, temel YZ veri toplama ve kodlama yeteneklerini, GPU tabanlı yüksek performanslı hesaplama ile birleştirmektedir. Kompakt platform yapılarıyla farklı YZ eğitim türlerine (gözetimli, gözetimsiz, transfer öğrenimi) hızlı entegrasyon sağlanmıştır. Özellikle Google Colab'ın sağladığı GPU (T4, V100, A100) imkanları, öğrenme döngüsünü yorumlayarak eğitim seviyesinde kontrol ve komut yeteneği kazandırmakta; ayrıca süreç metriklerinin kapsamlı izlenmesine olanak tanımaktadır.

Kaggle'dan edinilen verilerle işlenen modeller, doğruluk koşulları sağlandığında Hugging Face üzerinden merkezi model havuzuna iletilmektedir. Hesaplama aksaklıklarının olmadığı durumlarda Kaggle ve Colab, temel "geliştirme" platformu olarak işlev görürken; karmaşık dil modellerinde Hugging Face, önceden eğitilmiş modelleri kullanarak "transfer öğrenimi master" rolünü üstlenmektedir. Bu sistem, tanımlanmış optimizasyon senaryolarını uygulayarak model geliştirme sürecinin kesintisiz şekilde sürdürülmesini sağlar. Bağlantı/kota sorunlarında ise çok katmanlı not defteri depolama yönetim sistemleri ile veri bütünlüğü korunmakta ve bağlantı sağlandığında senkronizasyon tamamlanmaktadır.

Söz konusu gelişim süreci, YZ altyapısını Kaggle'ın rekabetçi ortamı, Hugging Face'in model havuzu ve Google Colab'ın hesaplama mimarisi ile entegre eden yenilikçi bir öğrenme ve geliştirme çözümü sunmaktadır. Geliştirilen bu entegrasyon, YZ modellerinde veri güvenliğini ve operasyonel sürekliliği garanti altına almakta ve "hızlı prototipleme ve sıfır zaman kaybı" hedefine ulaşmaktadır.

Anahtar Kelimeler: Yapay Zeka, Derin Öğrenme, Hibrit Platform, Transfer Öğrenimi

ABSTRACT

Rapid advancements in Artificial Intelligence (AI) technologies have made AI learning and model development platforms indispensable for individual and institutional endeavors. The AI journey examined in this study presents a hybrid platform architecture that integrates critical tools of the modern AI development ecosystem, distinctly moving away from traditional educational paths.

Platforms currently used in AI development typically offer only datasets and basic coding environments. Crucially, existing solutions often fail to provide an integrated workflow for processes like model optimization and advanced transfer learning. This deficiency creates a gap in delivering the necessary uninterrupted operations for advanced modeling and high-compute scenarios.

The core tools employed in this journey—Kaggle, Hugging Face, and Google Colab—combine fundamental AI data collection and coding capabilities with GPU-based, high-performance computing. Their compact structures ensure rapid integration into various AI training types (supervised, unsupervised, transfer learning). Specifically, Google Colab's GPU resources (T4, V100, A100) provide control and command over the training level by interpreting the learning cycle, while allowing for comprehensive monitoring of process metrics.

Models processed using Kaggle data are forwarded to the central model repository via Hugging Face once accuracy conditions are met. Absent computational disruptions, Kaggle and Colab function as the primary "development" platform. For complex language models, Hugging Face takes on the "transfer learning master" role by leveraging pre-trained models. This system ensures the uninterrupted flow of model development by implementing defined optimization scenarios. During connection or quota issues, multi-layered notebook storage management preserves data integrity, and synchronization is completed upon reconnecting.

This development process offers an innovative learning and development solution that seamlessly integrates the AI infrastructure with Kaggle's competitive environment, Hugging Face's model hub, and Google Colab's computing architecture. The resulting integration guarantees data security and operational continuity in AI models, achieving the goal of "rapid prototyping and zero downtime."

Keywords: Artificial Intelligence, Deep Learning, Hybrid Platform, Transfer Learning

SENTIMENT AND SEPARATION: A DATA-DRIVEN FRAMEWORK FOR TURNOVER ANALYSIS USING NLP

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ABSTRACT

Employee turnover is a continual and expensive problem across industries, which requires a new and comprehensive predictive framework. Traditional frameworks most often use structured human resource data, e.g. employee demographics and job characteristics, and do not account for the emotional and cognitive aspects of decisions leading to attrition. A novel, hybrid framework is proposed for improved prediction and comprehension of voluntary turnover, through the application of Natural Language Processing (NLP) techniques, alongside structured employee data. A sentiment analysis, emotion detection, and topic modeling were conducted on employee feedback surveys, performance reviews, and exit interviews. Latent signals are often represented within qualitative indications more than the numbers and trends that emerge before resignation, and this chapter reveals how often these pieces of qualitative information are found. The framework implements machine learning models, like Random Forest and XGBoost, on synthetic data achieved by merging structured employee data and structured variables, using data obtained from NLP. The results provide indications that models including emotional and textual indicators perform better than previous traditional metric models alone, enhancing accuracy and greater interpretability than its preceding models. In addition, SHAP and LIME interpretability tools were used to visualize feature contributions, ensuring transparency and power to act for HR Employees. Ethical implications were also addressed in a critical way, including data privacy, informed consent and algorithmic fairness to ensure that AI is being used responsibly in organizations. The chapter contributes to the emerging development of emotionally intelligent HR analytics by demonstrating how unstructured data can increase predictive accuracy while acting ethically. It also conveyed how language and emotional markers are an early-warning system for disengagement, allowing for proactive retention strategies to be formulated. Other areas for future research include real time feedback monitoring, developing specific models for each industry and utilizing deep learning models. This chapter also contributes to a more humanistic, data driven decision-making approach to HR, thereby bridging artificial intelligence and empathetic organizations.

Keywords: Employee Turnover, Natural Language Processing (NLP), Sentiment Analysis, Predictive Analytics, HRM, Machine Learning, Employee Feedback

INVESTIGATING THE NEUROPROTECTIVE EFFECTS OF CURCUMIN IN MITIGATING SCOPOLAMINE-INDUCED DEMENTIA

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The present study investigated the neuroprotective potential of curcumin against scopolamine-induced dementia in rats. Recognizing the role of oxidative stress in cognitive decline, researchers hypothesized that curcumin's antioxidant properties could mitigate memory impairment. To test this, dementia was induced in rats using scopolamine, which resulted in significant memory deficits, as evidenced by poor performance in behavioral tests like the Morris water maze. Subsequently, treatment with curcumin was administered. The results demonstrated a marked improvement in cognitive abilities, reversing the scopolamine-induced memory impairment. Furthermore, biochemical analysis provided a mechanistic insight, showing that curcumin treatment significantly reduced oxidative stress markers and enhanced cholinergic function in the brain. These findings suggest that curcumin effectively improves cognitive function and counteracts oxidative damage in this dementia model, highlighting its promise as a neuroprotective agent. The study concludes that curcumin is a compelling candidate for further research aimed at preventing or treating dementia-related cognitive decline.

Key words: Curcumin, Scopolamine-Induced Dementia, Oxidative Stress, Morris Water Maze

**ASSESSMENT OF THE FISHERIES OF RIVER KATCHA AND LAPAI - AGAIE
RESERVOIR, NIGER STATE. NIGERIA**

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ABSTRACT

Assessment of the fishing gears, crafts and fishes of River Katcha and Lapai-Agaie Reservoir, were carried out between July, 2024 and September, 2024 in Niger State, Nigeria. Catch and frame assessment survey was used for this study. Gillnet, cast net, Malian trap (gura), hook and line were commonly used fishing gears. Apart from plank canoe used in both water bodies, motorized canoe and gourd were not used in River Katcha. Traditional fishing gears and crafts are still in use in these water bodies. Ten (10) fish species belonging to ten families were recorded on overall in both water bodies. There are peculiarities in some species with *Heterotis niloticus* and *Malapterurus electricus* recorded in Katcha River while *Hepsetus odoe* and *Inistius geisna* in Lapai-Agaie Reservoir. Further studies to ascertain the presence of other fishing gears, crafts and fish species should be carried out, similar work need to be done in water bodies where such has not been done, the findings of this work can be used as base line information for management plans of the water bodies

Keywords: Fishing gears, Fishing crafts, fish, River, Reservoir, Nigeria

SPECIES DIVERSITY OF EARTHWORMS IN SOME SELECTED AREAS OF NIGER STATE, NIGERIA

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ABSTRACT

Diversity of earthworm species in some selected areas of Niger State, Nigeria was carried out between July and September 2024. Zone A comprised of Lapai, Agaie, Bida and Dabban, Zone B; Minna, Suleija, Kuta and Kagara, while Kontagora, Ibbi, Kainji and Mariga make up Zone C. *Eudrilus eugeniae*, *Alma millsoni*, *Perionyx excavatus*, *Hyperiodrilus africanus* and *Libyodrilus violates* were recorded. The highest populated earthworm species was recorded in family Eudrilidae with *Eudrilus eugeniae* as most abundant (54.34%) and *Perionyx excavates* as lowest (6.52%). Minna recorded highest earthworm number (15.94%) with lowest in Suleija (2.17%). Bida, Dabban, Minna, Kuta, Kagara and Mariga each recorded 2 species of earthworm. *Eudrilus eugeniae* was recorded in 8 sites, while *Alma millsoni* and *Libyodrilus violates* were recorded in 2 sites each. Zone A had the highest number of species (4), with zone C with the lowest (2). *E. eugeniae* was recorded in all zones, and *Libyodrilus violates* in only zone A. *E. eugeniae* had highest abundance in all the zones. Diversity indices, showed high dominance in Lapai, Agaie, Suleija, Kontagora, Ibbi and Kanji, moderate dominance in Bida, Dabban, Minna, Kuta, Kagara and Mariga. There was no species dominance between zones A and B, but moderate dominance in zone C. Similar work needs to be carried out for the remaining months and in other parts of the states, which can reveal more earthworm species, there is need to research on the various environmental factors and human activities that can influence their diversity.

Keywords: Species, Earthworm, Diversity, Ecological zones, Niger State, Nigeria

HARVESTING URBAN WISDOM: A POLICY BLUEPRINT FOR SUSTAINABLE NIGERIA INSPIRED BY LATIN AMERICA'S TALES AND ECOLOGICAL ECHOES

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Abstract

Nigeria's economic journey bears striking similarities to Latin America's past, with an over-reliance on raw material exports and weak institutions hindering growth. Our research draws valuable lessons from Brazil, Argentina, and Chile to propose a policy blueprint for a sustainable Nigeria. We recommend modernising agriculture, embracing sustainable mining practices, and adopting smart urbanisation strategies. These measures, coupled with economic diversification, climate action, and transparent governance, are vital for Nigeria's long-term resilience. The Nigerian economy can learn from Latin America's experiences, such as Brazil's innovative agribusiness sector and Chile's responsible mining model. By adopting climate-smart agriculture and agro-processing, Nigeria can enhance food security and boost exports. Moreover, smart planning, investment in public transport, and green infrastructure can help address urbanisation challenges. Our blueprint provides policymakers with actionable recommendations, including mechanised commercial farming, R&D investment, and transparent licensing for mining. By implementing these strategies, Nigeria can break free from resource dependency and build a diversified economy, ensuring sustainable economic growth and environmental stewardship.

Keywords: Sustainable Nigeria, Economic Diversification, Agribusiness, Urbanisation, Climate Action

HYBRID CONTRASTIVE AND GENERATIVE DEEP LEARNING MODELS FOR MULTIMODAL SENTIMENT AND EMOTION ANALYSIS

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Abstract

Sentiment and emotion analysis of humans is a very challenging task as features from text, speech, and visual cues are heterogeneous, high-dimensional, and interdependent. Traditional unimodal methods fail to capture nuanced correlations among modalities, which affects predictive accuracy and generalizability. This paper proposes a hybrid deep learning framework that integrates contrastive learning for robust representation alignment and generative modeling for data augmentation and cross-modal synthesis. In particular, the semantic and contextual features are extracted from textual data using a multimodal transformer-based encoder, while convolutional neural networks and recurrent architectures are used to model visual and audio signals, respectively. The contrastive objectives enforce modality-invariant embedding alignment, enhancing inter-modal coherence, whereas GANs synthesize missing or noisy data to improve model robustness. Through experimental evaluation on benchmark multimodal sentiment datasets such as CMU-MOSI, CMU-MOSEI, and IEMOCAP, it has been shown that the proposed framework significantly outperforms state-of-the-art baselines in both sentiment classification and fine-grained emotion recognition. Besides, ablation studies underpin complementary strengths of contrastive and generative components in improving cross-modal feature integration. This is indicative of the fact that hybrid deep learning strategies can model complex multimodal interactions more effectively for more accurate and interpretable emotion-aware AI systems applicable to human-computer interaction, social media analytics, and affective computing.

Keywords: multimodal sentiment analysis, emotion recognition, contrastive learning, generative adversarial networks, deep learning, transformer

STATISTICAL ASSESSMENT OF AWARENESS, ATTITUDE TOWARDS AND PRACTICES PROMOTING MENTAL HEALTH AMONG TERTIARY INSTITUTIONS STUDENTS

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Abstract

Mental health is an essential component of overall well-being and is increasingly recognised as a critical factor in students' academic success, personal growth, and social functioning. This study assessed the level of awareness, attitude towards and practices promoting mental health among students in tertiary institutions in Lagos State. The study specifically assessed students' perception of awareness, attitudes and the practices and behaviours promoting mental health and measured the association between attitude and practices promoting mental health. The study adopted a quantitative, cross-sectional survey design among 393 students of Yaba College of Technology, Yaba Lagos selected purposively. Data were collected using personally designed and validated questionnaire and administer via Google Forms. The data were analysed using frequency distribution and Chi square tests. The results show that 84% of the students were aware of mental health concerns, 66.7% of them got their awareness form campaigns on campus, 61.4% of them have used the counselling services of the college while 54.1% believed that the institution lacks adequate mental health resources. Among the mental health issues include depression (37.1%), stress and burnout (38.6%), anxiety disorders (11.5%), and sleep disorders (8.8%). Some of the attitudes towards mental health include viewing it as a sign of weakness (80.5%), stigmatisation (57.4%) and comfortable discussing mental health (51.9%). Also, prominent promoters of mental health are talking to friends and family (76.6%), mindfulness (72.9%), regular exercising (62.9%) and seeking professional counselling (46.4%). Significant promoters of mental health include attending mental health related events/ programs ($p < 0.05$), mindfulness ($p < 0.05$) and seeking professional counselling ($p < 0.05$). The study concluded that although awareness is relatively high, mental health literacy, help-seeking behaviour and institutional support remains insufficient.

Keywords: Awareness and attitude, Mental health promotion, Perception, Statistical assessment, Student's well-being.

**SH-SY5Y NÖROBLASTOM HÜCRELERİNİN PROLİFERASYON VE
MİGRASYONUNDA ESCİN'İN ETKİLERİ**
EFFECTS OF ESCIN ON PROLIFERATION AND MIGRATION OF SH-SY5Y
NEUROBLASTOMA CELLS

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ÖZET

Nöral krest hücrelerinden köken alan nöroblastoma, yaygın bir ekstrakraniyal solid çocukluk çağı tümörüdür. Çocuklarda ve ergenlerde beyin tümörlerinden sonra en sık görülen solid tümörlerdir. Nöroblastomlar, çocukluk çağı kanser ölümlerinin yaklaşık %15'ini oluşturur. Hastaların yaklaşık %90'ı 5 yaşın altındadır ve çoğunluğu yenidoğan bebektir, çünkü ağırlıklı olarak embriyolojik dönemde ortaya çıkan bir tümördür. Nöroblastoma ilerlemesini durdurmak için klinikte cerrahi, immünoterapi, kemoterapi, radyoterapi, miyeloablatif tedavi ve retinoid tedavisi dahil olmak üzere çeşitli kanser karşıtı ilaçlar ve tedaviler uygulanmaktadır. Buna rağmen hastaların beş yıllık sağkalım oranı %50'nin altındadır. Uygulanan tedavilere rağmen istenen sonuçların alınamaması sebebiyle nöroblastomada alternatif tedavilere ihtiyaç duyulmaktadır. Bitkilerden elde edilen doğal bileşikler, doğal kökenleri ve çeşitli insan hastalıklarının önlenmesinde veya tedavisinde etki edebilen biyoaktif bileşikleri nedeniyle yıllardır bilimsel araştırmalarda büyük ilgi görmektedir. Aesculus hippocastanum (at kestanesi) tohumlarından elde edilen escin bu bileşiklerden biridir. Escin'in antiproliferatif aktivitesi lösemi, glioma/glioblastoma, kolanjiyokarsinom, böbrek, meme, serviks ve akciğer kanseri hücreleri gibi çeşitli hücre hatlarında araştırılmıştır. Bunun yanısıra agresif tip meme kanser hücre hattı MDA-MB-231 hücrelerinde migrasyonu inhibe ettiği gösterilmiştir. Bu etkilerden yola çıkarak alternatif uygulamalara ihtiyaç duyulan nöroblastomada escinin etkisini araştırmayı amaçladık. Amacımız doğrultusunda SH-SY5Y nöroblastoma hücre hattında escinin hücre proliferasyonu ve migrasyonu üzerindeki etkisini araştırdık. Escinin hücre proliferasyonu üzerindeki etkisi MTT analizi, migrasyon üzerindeki etkisi ise yara iyileşme deneyi ile değerlendirildi. Escin 48 ve 72 saat boyunca hücrelere uygulanarak optimal süre ve IC₅₀ dozu belirlendi. Escinin IC₅₀ dozu 48 saat 4,76 µM olarak belirlendi. Belirlenen optimal süre ve IC₅₀ dozu ile yara iyileşme deneyine devam edildi. Yapılan yara iyileşme deneyi sonrası Escinin hücre migrasyonunu anlamlı bir şekilde azalttığı görüldü. Çalışmamızın bulguları nöroblastoma tedavisinde escinin terapötik bir ajan olma potansiyeline dair önemli kanıtlar sunmaktadır. Yine de bu bulguları desteklemek için daha ileri araştırmalara ihtiyaç vardır.

Anahtar Kelimeler: Escin, SH-SY5Y hücre hattı, Proliferasyon, Migrasyon, Nöroblastom

ABSTRACT

Neuroblastoma is a common extracranial solid pediatric tumor, originating from neural crest cells. Neuroblastomas are the most common solid tumors in children and adolescents after brain tumors. Neuroblastomas account for about 15% of childhood cancer mortality. Since neuroblastomas generally form during embryonic development, 90% of patients are under five years of age, mostly newborns. Various anti-cancer drugs and therapies, including

immunotherapy, chemotherapy, radiation, myeloablative therapy, retinoid therapy, and surgery, have been clinically administered to stop neuroblastoma progression. However, patients' five-year survival rate is below 50%. Because the current therapies fail to produce the desired outcomes, neuroblastoma treatment requires alternative therapies. Plant-based natural compounds have long been studied because they are natural and contain bioactive substances, which can effectively prevent or treat various human diseases. Escin, derived from *Aesculus hippocastanum* seeds, is one such compound. Its antiproliferative activity has been tested in leukemia, glioma/glioblastoma, cholangiocarcinoma, kidney, breast, cervical, and lung cancer cell lines. Furthermore, it has been demonstrated to inhibit migration in the aggressive-type breast cancer cell line, MDA-MB-231. Given these, we aimed to investigate escin's effects on neuroblastoma. As per our objective, we examined escin's effect on cell proliferation and migration in the SH-SY5Y neuroblastoma cell line. Escin's effect on cell proliferation was measured using the MTT assay, while its effect on migration was assessed by the wound-healing assay. To determine the optimal duration and IC_{50} dose, the cells were exposed to escin for 48 and 72 hours. The IC_{50} dose of escin was determined to be 4.76 μ M at 48 hours. The wound-healing experiment was performed with the established IC_{50} dose and the optimal duration. The experiment demonstrates that escin significantly reduces cell migration. Our findings suggest substantial evidence for escin's potential as a therapeutic agent for neuroblastoma treatment, yet more advanced research is needed to corroborate these findings.

Keywords: Escin, SH-SY5Y cell line, Proliferation, Migration, Neuroblastoma

EXTREMISM ACCORDING TO SOME DEMOGRAPHIC VARIABLES AND THE EFFECTIVENESS OF REALISTIC COUNSELING TO REDUCE THE COGNITIVE AND EMOTIONAL COMPONENTS OF TEACHERS UNDER TRAINING

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Abstract: This research aims to identify the extremism level among university students in Iraq, and its components. according to some demographic variables. To identify the effectiveness of reality counseling. The study follows the descriptive and experimental methods. The results show that there are a general level of statistical extremism, especially in both cognitive and emotional components. There is no extremism in the behavioral component. The sample has extreme beliefs, thoughts, feelings and desires, but does not reach the degree of executional behavior. According to the demographic variables (gender, age, time, place of residence) there are no statistically significant differences. The program is designed and implemented according to the theory of counseling by reality (William Glaser model). The program is effective after testing the statistical hypotheses.

Key word: Extremism - Components (behavioral - cognitive - emotional) - Reality counseling - Teachers under training.

YOUTH, AI, AND INCOME: A STUDY OF AWARENESS, ENGAGEMENT, AND OPPORTUNITIES IN TIRANA

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Abstract

This study investigates the utilization of Artificial Intelligence (AI) as a tool for income generation among young people in the Tirana region. Data were collected via an online questionnaire, with 69 out of 200 recipients completing the survey. The questionnaire comprised two sections: the first gathered demographic and educational information, while the second explored how participants leverage AI to generate income. The findings reveal that interest and engagement with AI are influenced by factors such as age, geographic location, and gender. Despite growing interest, overall awareness of AI's potential remains limited among a substantial segment of the youth population. These insights highlight the need for targeted educational initiatives to enhance AI literacy and facilitate equitable access to AI-driven opportunities, thereby supporting youth in harnessing the full potential of AI for income generation.

Keywords: AI knowledge; AI leverage for generating incomes; Platforms leveraging AI for generating income

“PREVALENCE AND ANTIBIOTIC RESISTANCE OF *Escherichia coli*, *Klebsiella* spp., *Salmonella* spp., and *S. aureus* FROM SALAD IN LOCAL FOOD VENDORS OF RAJSHAHI CITY, BANGLADESH.”

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Abstract

Salads are exposed to microbial contamination through contact with soil, dust and water and by treatment at harvest or during postharvest handling. They are considered potential sources of entero-pathogenic microbes and other food-borne diseases. We aimed to assess the microbiological quality of salads by isolating microbial contaminants and determining their antibiotic sensitivity patterns using commonly used antibiotics. The antimicrobial susceptibility profiles of the isolates were determined using the standard Kirby–Bauer disc diffusion method and CLSI guidelines. The bacterial load of the salad samples ranged between Cucumber 1.67×10^7 CFU/g to 2.63×10^9 CFU/g, Carrot 1.25×10^7 CFU/g to 2.46×10^9 CFU/g, Tomato 1.8×10^7 CFU/g to 2.87×10^9 CFU/g. In this study Out of 60 salad samples, 48 were positives for bacterial growth and 12 were negative. Among positive samples, 33 (55%) samples were positive for *Staphylococcus aureus*, 21 (35%) samples were positive for *Salmonella* spp., 18 (30%) were positive for *E. coli*, 13 (21.66%) samples were positive for *Klebsiella* spp., The antibiotic sensitivity results of 20 pathogenic *Staphylococcus aureus* isolates showed 100% 90% 85% 80% 80% and 75% resistance to Erythromycin, Azithromycin, Cefixime, Ceftriaxone and Oxytetracycline respectively. The sensitivity results of 20 entero-pathogenic *Salmonella* spp. isolates showed 100%, 85%, 75%, and 40% resistance to Erythromycin, Tetracycline, Cefuroxime, and Azithromycin respectively. Then the sensitivity results of 10 *E. coli* isolates showed 90%, 70%, 40%, 30% resistance to Erythromycin, Cefuroxime, Tetracycline and Ciprofloxacin respectively. The sensitivity results of 10 *Klebsiella* spp. isolates showed 100%, 90%, 60%, 60% and 70% resistance to Erythromycin, Azithromycin, Tetracycline, Cefuroxime and Ceftriaxone, respectively. In our study, highly prevalent food borne disease causing *Salmonella* spp. showed highest resistance to most of the commonly used antibiotics in Bangladesh. We also observed that pathogenic *Staphylococcus aureus* showed higher resistance to commonly used antibiotics.

Keywords: Salad, Public health risk, Antibiotic resistance, Food borne pathogens, Rajshahi City.

ASSESSING AIR POLLUTION DYNAMICS (2018-2024) CORRELATING WITH LAND USE TO STRENGTHEN CLIMATE RESILIENCE IN SAVAR USING GOOGLE EARTH ENGINE

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Abstract

Air pollution has become a serious issue in Savar Upazila, due to its dynamic land use; fast-growing industries; alongside ineffective waste handling contributes significantly. These factors together underline why studying pollution patterns matters. This study aims to analyze the spatiotemporal dynamics of 4 key air pollutants in Savar using Sentinel-5P Offline Level-3 dataset provided by the Copernicus program for-Nitrogen dioxide (NO₂), Sulfur dioxide (SO₂), Carbon monoxide (CO), Methane (CH₄) and evaluate their implications for strengthening and better preparedness against local climate resilience. By using Getis-Ord Gi* hotspot detection revealed clusters of polluting area. Between 2018 and 2024, Savar's air quality worsened, particularly near factories and dumpsites. CO levels rose sharply in the south and southeast, while CH₄ concentrations continued climbing, spreading into southern areas, likely from factories or landfills. NO₂ increased in eastern regions, reflecting higher vehicle use or industrial activity. SO₂ remained mostly steady, showing minor improvements. Overall, CO, CH₄, and NO₂ indicate deteriorating air quality, whereas SO₂ shows little change. Air quality analysis (2018–2024) shows persistent exceedance comparing to Bangladesh AAQS. CO levels (40–42 mg/m³) are four times the 10 mg/m³ standard. NO₂ (0.22–0.30 mg/m³) exceeds the 0.04 mg/m³ limit by 5–7 times, and SO₂ (0.21–0.36 mg/m³) surpasses the 0.05 mg/m³ standard by 4–7 times, indicating chronic pollution. CH₄ levels (1007–1039 mg/m³), though unregulated, suggest high greenhouse gas presence. These findings clearly demonstrate that CO, NO₂, and SO₂ are persistently above permissible limits, highlighting the urgent need for targeted air pollution control measures. By addressing air pollution through data-driven planning and understanding air pollution dynamics is essential for strengthening climate resilience, as cleaner air directly enhances community health, adaptive capacity for climate in Savar.

Keywords:

Air Pollution; Spatiotemporal Analysis; Google Earth Engine (GEE); Hotspot Detection; Climate Resilience; Pollution Monitoring

TRANSFERRING AGRICULTURAL TECHNOLOGY IN CULTURALLY ROOTED COMMUNITIES: THE CASE OF INDIGENOUS PEOPLE IN THE CHITTAGONG HILL TRACTS

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Abstract:

Agricultural Technology Transfer (ATT) has received significant promotion to boost the productivity of the rural community, yet the effects of technology transfer of the ecologically sensitive Chittagong Hill Tracts are under-researched. This paper is structured within the framework of Political Ecology and examines how top-down ATT (such as the encouragement of cash crops, hybrid seeds, and chemical inputs) affects the Indigenous farmers in Bandarban. Applying qualitative narrative methodology and 20 purposely chosen farmers, the results show that ATT increases environmental and cultural crises. Particularly, the pressure of ATT policies and a lack of land drives the breakdown of the stable Jhum Fallow Cycle (previously 15-20 years long) into an ecologically catastrophic 3-5 years with drastic impacts on the soil erosion and biodiversity extinction. More importantly, the fact that permanent systems are essentially limited by insecure land tenure makes long-term investment irrational, which is an institutional failure of convenience. The paper comes to a conclusion that the negligence of ATT towards Indigenous knowledge and governance systems enhances social-economic vulnerability. The customary land rights structural issue and the priority of agroecological models should be included in sustainable interventions that are urgently needed.

Keywords: Political ecology, Agricultural Technology Transfer, Chittagong Hill Tracts, Fallow Cycle Collapse, Jum (shifting cultivation), Agro-ecological model, Socio-economic vulnerability

**EFFECTS OF FLIPPED CLASSROOM MODES ON PRE-SERVICE
MATHEMATICS TEACHERS' ACHIEVEMENT IN COLLEGES OF EDUCATION,
NORTH-CENTRAL**

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Abstract

The study examined the Effects of Flipped Classroom Modes on Pre-Service Mathematics Teachers' Achievement in Colleges of Education, North-Central. A quasi-experimental design, specifically a pretest-posttest, non-equivalent control group design, was used for the research. The population of this study encompasses all first-year students of the Nigeria Certificate in Education (NCE I) programme who are registered for mathematics courses in the 2024/2025 academic session. A sample size of 131 NCE I was selected from the population using a multi-stage sampling technique. Two research questions were posed, and two corresponding null hypotheses were formulated and tested at a 0.05 significance level. Four experts validated the research instrument. The test-retest method was used to determine the reliability coefficient of the Geometry Achievement Test (CGAT). The scores were analysed using the Pearson Product-Moment Correlation Coefficient, which yielded a reliability index of 0.77 which indicated a good level of temporal stability for the CGAT. Data were analysed using mean, standard deviation, and analysis of variance (ANOVA) with the Statistical Package for Social Sciences (SPSS) version 23.00. The findings indicated that both the micro-flipped classroom and group-flipped classroom methods led to significantly higher academic achievement scores in Geometric concepts among pre-service Mathematics teachers compared to the traditional lecture method. Based on the findings of the study, the following recommendation is proposed: Pre-service Mathematics teachers are strongly encouraged to embrace flipped classroom modes, actively engaging with pre-class materials and participating fully in in-class activities. This will not only improve their academic performance and retention but also cultivate essential 21st-century skills such as autonomous learning, critical thinking, and collaborative problem-solving.

Keywords: Achievement, Flipped Classroom Modes and Pre-Service Mathematics Teachers.

EXPLORING TERTIARY STUDENTS' PERCEPTIONS REGARDING THE USE OF AI CHATBOTS IN THE DEVELOPMENT OF SPEAKING FLUENCY

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Abstract

AI chatbots are being increasingly integrated into higher education, yet their role in fostering speaking fluency remains unclear. This research examines how university students perceive chatbots in developing oral skills in linguistic, cognitive, and emotional areas. The study used a mixed-methods approach, incorporating a survey with open-ended questions from students at private universities in Bangladesh. Research clearly shows that students are familiar with AI chatbots, with many having already utilized them for speaking practice. In general, the learners used chatbots as helping tools that facilitated communication and offered constructive feedback. However, they also noted ongoing issues, a notable decline in motivation, and technical interruptions that need to be addressed. Although the students did not consider chatbots as substitutes for human classmates or instructors, they strongly endorsed their use as supplementary practice aids. Qualitative insights further emphasized the need for more comprehensive feedback to enhance understanding, systems to track progress, gamified elements to maintain interest, voice-enabled interactions, adaptive personalization, and enhanced technical reliability. The study concludes that AI chatbots are flexible, available, and nonjudgmental avenues for language practice, but they cannot replace the human interactions needed to communicate. This study is not without limitations; indeed, it is based on self-reported data, reveals no demographic variables, and has lasted a short period of time, which limits its applicability outside of the context of the study. Despite these limitations, the results offer significant pedagogical and design insights: chatbots can be utilized as a means of preparation, reinforcement, and post-class activities to enhance speaking opportunities. Future studies should employ longitudinal course designs, performance indicators, and critical demographic indicators, whereas developers need to maximize voice and feedback features, as well as contextual aspects.

Keywords: artificial intelligence, chatbots, speaking fluency, tertiary education, personalized feedback

**BLOCKCHAIN-ENABLED INTRUSION DETECTION SYSTEM FOR SECURE NID
VERIFICATION**
A SECURITY-FOCUSED FRAMEWORK FOR DECENTRALIZED NATIONAL
IDENTITY AUTHENTICATION

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Abstract

National identity verification systems play a vital role in ensuring the integrity, authenticity, and reliability of citizen information, forming the backbone of modern e-governance. With countries increasingly depending on digital portals to access public services, financial systems, health records, and identity-dependent infrastructures, the risks associated with traditional, centralized operating NID verification systems are rising, including identity theft, unauthorized access, data manipulation, and levels of transparency that are uncertain. These risks warrant the need for secure, decentralized, tamper-evident technology that can assist in enabling public trust and provide ongoing stability in the face of insecurity in NID verification of citizen data.

This research presents an integrated verification framework that combines the capabilities of blockchain technologies and a real-time Intrusion Detection System (IDS) to enhance NID verification. This verification model is based on the Ethereum platform, employing SHA-256 hashing and smart contracts to allow for identity information to be recorded on a private blockchain for an immutable ledger that supports applications in e-governance, border control, financial security, and healthcare identity management. exists unauthorized modification of data. Additionally, the proposed verification model includes a QR-based authentication mechanism to provide a faster, user-friendly, privacy-preserving verification of verified identity that allows institutions to verify identity without disclosing any sensitive personal data. A lightweight IDS monitors system utilization continuously and conducts an anomaly assessment of system behavior to be able to provide alerts on specific identified behaviors, such as repeated verifications and access behavior.

This integrated blockchain IDS architecture offers a robust and transparent solution for secure NID verification, with potential applications in e-governance, border control, financial security, and healthcare identity management.

Keywords: NID verification, Blockchain, smart Contracts, Ethereum, SHA-256 Hashing, Instruction Detection System, QR Authentication, Digital Identity, Fraud Detection.

PATHOGEN POPULATION GENOMICS UNDER FUNGICIDE PRESSURE

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ABSTRACT

Fungicide applications impose strong selection pressures on plant pathogenic fungi, driving rapid evolutionary changes that threaten the durability of disease management strategies. Population genomics provides a powerful framework to unravel the genetic mechanisms underlying fungicide resistance, track adaptive mutations, and understand pathogen population structure in agroecosystems. This study explores how repeated fungicide exposure shapes genome-wide variation, allele frequencies, and selective sweeps in major fungal pathogens of crops. High-throughput sequencing, genome-wide association studies (GWAS), and comparative genomics were employed to detect resistance-conferring mutations in target-site genes, efflux pump regulators, and metabolic detoxification pathways. The analysis further reveals the role of mutation–selection balance, gene flow, and clonal expansion in shaping resistant subpopulations across diverse environments. Additionally, signatures of soft and hard selective sweeps, genetic bottlenecks, and horizontal transfer of resistance traits were characterized. The findings highlight the dynamic and multi-layered response of pathogen populations to fungicide pressure and emphasize the need for integrated resistance management strategies. Understanding genomic adaptation under chemical stress is crucial for developing predictive models, optimizing fungicide rotation schemes, and safeguarding crop protection systems against the escalating threat of fungicide resistance.

KEY WORDS: Pathogen population genomics; fungicide resistance; selective pressure; genome-wide association studies; selective sweeps; target-site mutations; efflux pumps; evolutionary dynamics; population structure; whole-genome sequencing.

THE PSYCHOLOGY OF IMPULSIVE BUYING BEHAVIOR ON E-PLATFORM

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ABSTRACT:

The research paper studies the dynamics between E-marketing strategies and consumer decision-making in the age of the digital revolution, which has changed relations between consumers and brands. Digital media has profoundly changed the nature of the relationship with respect to the consumer and brand. E-marketing has become a powerful weapon for ensuring that consumers make the purchase through many media like social media, email marketing, and content marketing, and focused on advertising their products and services on the Internet. The results suggest that personalized E-marketing campaigns and interactive campaigns enhance consumer engagement in the buying process. Findings summarize the several factors that affect impulsive buying behavior in online shopping, and the study further contends that the E-commerce sector needs to adopt sophisticated practices able to make a significant contribution to business success; the most critical factors that have to be there for the successful implementation of E-commerce will include the cultural factor, situational and psychological factors, personal factors, and economic factors.. E-marketing significantly differs from traditional marketing, which requires extensive media planning and repeated ad broadcasts to reach different audiences. It is a form of marketing that is highly economical, very customizable, and little effort needed for administration.

Consequently, E-marketing has become a cornerstone of modern business strategies, offering unparalleled opportunities for personalization, interactivity, and direct communication with target audiences. The consumer decision-making process is inherently complex and multifaceted, encompassing stages such as problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behavior. The results suggest that the social presence of the broadcaster and the social presence of the live streamer positively affect impulse buying directly and indirectly via pleasure and arousal, promoting consumer online impulse buying in live streaming, but the social presence of the viewers has no significant effect on pleasure and arousal. For practice, our results can help policymakers and operators of the live streaming platform alleviate impulse buying in the digital world.

Keywords: Impulsive buying; digital marketing, social relationship, consumer perception

**ASSESSMENT OF THE IMPACT OF POLLUTION AND URBAN GROWTH AT
THE PORT OF TIPAZA « north of Algeria »**

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Abstract :

Preserving the quality of the marine environment requires knowledge of different types of pollutants, the use of physicochemical parameters and microbiological indicators for assessing and determining the level of contamination. A multi-parameter approach is used, including monitoring microbial pollution indicators (total coliforms, fecal coliforms) and estimating nutrient concentrations in the surface waters of various stations along the port of Tipaza.

The aim of this study is to assess the impact of pollution and urban growth on the quality of water in the port of Tipaza. Physico-chemical, microbiological and nutrient analyses were carried out at five stations. The results show significant contamination, particularly of organic matter, faecal coliforms and nutrient salts, due to untreated urban waste and port activities. The situation represents a risk for the marine environment and public health.

Therefore, taking into account all of the above, we believe it is imperative to propose that the port of Tipaza be granted protected status. Such a status will provide managers with a legal instrument capable of containing any threat; this will constitute the only alternative for the future and ensure the genuine preservation of the site.

The study highlights the need to improve wastewater management and step up environmental monitoring.

Keywords: Pollution, urban growth, port of Tipaza.

THE “IRON FIST” EPIC

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Introduction: The Symbol of Leadership Resolve – The “Iron Fist” Movement

Zahid Xəlil’s novel, “Iron Fist,” presents the 44-day Patriotic War as an artistic chronicle of the Azerbaijani people’s thirty-year anticipation, the rise of the national spirit, and an unwavering determination. The core idea of the work is concentrated in a decisive symbol describing the beginning of the war: “Everything began with the Iron Fist being raised into the air.” This was not merely a command, but the embodiment of the Commander-in-Chief’s will and personal resolve, “hardened in the hand of a man like steel.”

The novel repeatedly emphasizes the fundamental principle that explains the victory not as the effort of a single person, but of the entire nation: “The Iron Fist is five fingers, but it is a great country.” This is the highest expression of the spirit of unity.

The commencement date of military operations is shown as September 27, 2020, and this was the continuation of the devotion to the national goal of the Great Leader Heydar Aliyev. The Great Leader’s main concern, as he had declared years ago, was “to eliminate Armenia’s aggression against Azerbaijan, to liberate our occupied territories...” This historical background proved how fundamental the “Iron Fist” movement was.

When the Commander-in-Chief’s sign was raised into the air, it symbolically shook the earth and sky, causing even the Murov mountain range and the Ömər peak to tremble. This moment of resolve united the entire nation. This awakening was so powerful that even the Old Poet was inspired by it and took up his pen. As an example of those who sacrificed their personal lives for the Motherland, the story of the soldier Vüsal is highlighted; he postponed his wedding and went to the front, believing in “Ilham Aliyev’s iron fist.” For such young people, going to the front had become a “Wedding” holiday where the yearning for Aghdara and Kalbajar would finally end.

Chapter I: The Epic of Martyrdom – Examples of National Valor

The novel artistically explains that the victory was built upon the spirit of heroism accumulated over the years and the blood of our martyrs. The Tovuz battles were the beginning of this sacrifice:

1. The Legacy of General Polad Həşimov:

The character of Major General Polad Həşimov is described in the work as Tender-Hearted, Steel-Willed. His martyrdom in Tovuz was not just a military loss, but a sacrifice that inflamed the blood of the entire nation and laid the groundwork for the beginning of the war. It was precisely his martyrdom that led to the start of the “Noah’s Flood” known as the Patriotic War. Polad’s father was also a military man, a fact which showed that his love for the art of war and his connection to the Motherland was an inherited legacy. His sacrifice ignited the nation’s sense of vengeance and put the “Iron Fist” into action.

2. The Selflessness of Colonel Ilgar Mirzəyev:

Colonel Ilgar Mirzəyev, Polad’s closest comrade-in-arms, is also one of the novel’s heroes. He was a native of the Karabakh land, specifically the village of Qaratəpə. He died fighting for the Qaraqaya height of Aghdam village during the Tovuz battles. His bravery was confirmed

posthumously with the title of National Hero of Azerbaijan. This is a clear example of how the sacrifice of the two generals (Polad and Ilgar) paved the way for Victory.

3. The Spirit of Ensign Xudayar Yusifzadə:

Ensign Xudayar Yusifzadə, who hailed from Barda, was also a young man passionate about music. But love for the Motherland led him onto a path higher than music, to the front. Although he was severely wounded in the battles for Aghband village on the Zangilan front, he bravely said, "I'm feeling great," to keep his fellow soldiers' spirits up. Xudayar's selflessness is presented as the highest example of the patriotic spirit. He was posthumously awarded the "Azerbaijan Flag" Order and the "For the Motherland" Medal.

Chapter II: The Morality of the Flag and the Intelligence Avengers

1. The Philosophy of the State Flag:

The chapter of the novel titled "The Holiday of Flags" states that the state flag is not just a symbol, but the foundation of the nation's sacred morality. The Flag is considered the nation's "existence, vitality," and "honor." The novel explains the deep philosophy of the colors, showing the moral roots of the Victory:

* Red color: Takes its hue from the blood of the martyrs, embodying the conscience of the Nation.

* Green color: Is the symbol of purity, Islam, and Justice.

* Blue color: Is Turkishness (Türklük), the expression of the great valor, the symbol of the invincible warrior.

2. The Missions of National Hero İbad Hüseynov:

One of the main heroes who guarded the honor of this flag and fought a secret struggle for years is the National Hero İbad Hüseynov. He is described as an intelligence officer who hid the tricolor flag even during the Soviet era and was distinguished by his devotion to the Motherland. İbad Hüseynov's intelligence activity was not only a military operation but a mission to avenge the people. He destroyed the Armenian commander and terrorist nicknamed "Avo," the killer from Khojaly. One of his biggest missions was to neutralize Monte Melkonian, who was establishing terrorist organizations in Europe. Melkonian's destruction shook the enemy so much that "they even declared a period of mourning in Armenia." This is an indicator that the long-lasting feeling of vengeance was finally satisfied.

Chapter III: The Shusha Epic – The Fortress of Morality and the Crown of Victory

The Shusha operation, the most glorious and strategic point of the Patriotic War, is presented in the novel as an extraordinary example of bravery. The liberation of Shusha was an example of military genius that decided the fate of the entire war.

1. Military Genius:

The method of execution of the operation astonished the world's military experts. The entry of soldiers, equipped with light weapons and moved solely by the national spirit, into the city by crossing sheer cliffs, broke the enemy's resistance in a short time.

2. Moral Superiority:

The novel sees the true power of this Victory not in material means or technology, but in moral values. The Shusha Victory was based on sublime moral values like love for the Motherland, honor, and valor. This bravery was far removed from any fear. The soldiers who participated in this battle were likened to Bamsı Beyrək, the hero of our grandfather Korkut, who knew no fear. Their spirit was forged from heroism, valor, and unwavering patriotism.

Conclusion: The Eternal Victory Story and National Revival

Zahid Xəlil's novel "Iron Fist" is immortalized as the artistic and moral manifesto of Azerbaijan's Victory in the 44-day war. Throughout the novel, the author repeatedly emphasizes the will hardened like steel in the Commander-in-Chief's "iron fist" and the unwavering unity of the five fingers that turned into a great country.

The work confirms that this historical decision, based on the Great Leader's will, united the entire nation in one day, transforming it into a force that shook the earth and sky. The war was won thanks to countless sacrifices, such as the spirit of Polad Həşimov, the valor of Ilgar Mirzəyev, the vengeance of Ibad Hüseynov, and the cry of "I'm feeling great" from Xudayar Yusifzadə. Even the inspiration drawn by the Old Poet was the literary embodiment of this national awakening.

The main message of the novel is that moral values, such as the invincible warrior spirit in the blue color, the conscience of the Nation in the red color, and justice in the green color, are the greatest guarantee of military success. The Shusha operation once again proved that love for the Motherland, honor, and valor have the power to overcome all kinds of difficulties, and that our soldiers possess bravery similar to Bamsı Beyrək.

This work is the Moral and Artistic Chronicle of Victory to be passed down to future generations for every citizen who believes in İlham Aliyev's iron fist. It demonstrates the unbreakable power of unity and love for the land, and keeps alive the eternal story of Azerbaijan's national revival.

MATCHA ÇAYININ SAĞLIK ÜZERİNDEKİ ETKİSİ THE EFFECT OF MATCHA TEA ON HEALTH

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Özet

Bu bilimsel bildirinin amacı, matcha çayının sağlığımız üzerindeki etkisini ve vücudumuzdaki tepkilerin deneysel yollar ile araştırılmasını analiz ederek özetlemektir.

Matcha çayı, Japonya kökenli *Camellia sinensis* bitkisinin yapraklarının buharda pişirilip kurutulması ve toz haline getirilmesiyle elde edilen ince öğütülmüş yeşil çay tozudur. Esasen teanin açısından zengin olan bu çay; klorofil, antioksidan ve bol miktarda içermektedir. Son yıllarda metabolik sağlık, stres yönetimi ve egzersiz performansı üzerindeki potansiyel etkileri nedeniyle bilimsel araştırmalarda öne çıkmıştır. Matcha çaylarının bileşenleri incelenirken, stres azaltıcı etkilerini göz önünde bulundurmak için deneyler yapıldı. Bu çalışmada, matcha çayının stres, obezite ve antrenman adaptasyonu üzerindeki etkileri incelenmiştir. Araştırmaya 36 sağlıklı üniversite öğrencisi (18 erkek, 18 kadın) katılmış ve katılımcılar 11 hafta boyunca matcha içeren ürünleri düzenli olarak tüketmiştir. Sonuçlar, matcha çayının şekerleme ürünlerine eklendiğinde bile stres düzeylerini azalttığını ortaya koymuştur. Ayrıca, trend bir içecek ve besin takviyesi halinde olan matcha, metabolik hastalıklara olası müdahale kabiliyeti nedeniyle araştırmalarda yoğun ilgi gördü ve yüksek yağlı beslenmeye bağlı obezite modellerinde matcha çayının yağ birikimini azalttığı, obeziteyle ilişkili metabolik bozuklukları hafiflettiği ve egzersiz sonrası toparlanmayı desteklediği belirlenmiştir. Bu etkilerin, çayda bulunan teanin ve kafeinin sinerjik etkileşimiyle ortaya çıktığı düşünülmektedir. Sonuç olarak, düzenli matcha çayı tüketiminin stres ve yorgunluk tepkilerini azaltarak mikrobiyota kompozisyonunda olumlu değişiklikler yaratabileceği, kasların egzersize adaptasyonunu destekleyebileceği öne sürülmektedir. Sonuç olarak, Japonya kökenli bu çayın sağlık üzerindeki etkileri çok yönlü olmakla birlikte, obezite üzerindeki olumlu etkisi özellikle dikkat çekicidir. Elde edilen bulgular, matcha çayının metabolik hastalıkların önlenmesi ve yönetiminde tamamlayıcı bir beslenme stratejisi olarak değerlendirilebileceğini göstermektedir. Matcha çayının sağlık üzerindeki etkileri çok yönlü olup özellikle obezite üzerindeki iyileştirici etkisi dikkat çekicidir.

Anahtar Kelimeler: Matcha çayı, stres, obezite, egzersiz adaptasyonu

Abstract

The purpose of this scientific paper is to summarize and analyze the effects of matcha tea on our health and the body's responses through experimental methods. Matcha tea is a finely ground green tea powder obtained by steaming, drying, and grinding the leaves of the *Camellia sinensis* plant, which originates from Japan. Essentially rich in theanine, this tea also contains high amounts of chlorophyll and antioxidants.

In recent years, it has stood out in scientific research due to its potential effects on metabolic health, stress management, and exercise performance. While examining the components of matcha teas, experiments were conducted to consider their stress-reducing effects. In this study, the effects of matcha tea on stress, obesity, and training adaptation were investigated.

A total of 36 healthy university students (18 men and 18 women) participated in the research, and the participants regularly consumed products containing matcha for 11 weeks. The results revealed that even when added to confectionery products, matcha tea reduced stress levels. Moreover, as a trendy beverage and nutritional supplement, matcha has attracted significant interest in research due to its potential to intervene in metabolic diseases, and it has been determined that matcha tea reduces fat accumulation in high-fat diet-induced obesity models, alleviates obesity-related metabolic disorders, and supports post-exercise recovery. These effects are thought to result from the synergistic interaction between theanine and caffeine present in the tea.

As a result, it is suggested that regular consumption of matcha tea may reduce stress and fatigue responses, create positive changes in the microbiota composition, and support muscle adaptation to exercise. In conclusion, although the health effects of this Japan-originated tea are multifaceted, its positive impact on obesity is particularly remarkable. The findings indicate that matcha tea can be considered a complementary nutritional strategy for the prevention and management of metabolic diseases. The health effects of matcha tea are multifaceted, and its improving effect on obesity is especially noteworthy.

Keywords: Matcha tea, stress, obesity, exercise adaptation

INFLUENCE OF VINE AGE ON QUALITATIVE, COLORIMETRIC TRAITS AND ANTHOCYANIN CONTENT IN TWO RED TABLE GRAPE CULTIVARS

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Abstract

Grapevines are long-lived perennial plants whose productivity can extend beyond several decades, yet the influence of vine age on grape quality remains insufficiently understood. This study aimed to evaluate the effect of vineyard age on qualitative attributes, colorimetric parameters, and total anthocyanin content in two red table grape cultivars, *Ahlam Bouammer* and *Cardinal*, comparing old versus young vines. Four qualitative descriptors—compactness, color intensity, berry diameter, and pedicel detachment—were assessed alongside CIELab colorimetric variables and anthocyanin levels determined spectrophotometrically. Results revealed cultivar-dependent responses to vine age. In *Ahlam Bouammer*, vine age had little impact on colorimetric characteristics but markedly influenced total anthocyanin content, which was higher in younger vines (7,032.64 mg/100 ml) compared with older ones (3,302.49 mg/100 ml). In *Cardinal*, younger vines displayed higher CIRG values, while anthocyanin content showed no significant age-related variation. Principal component analysis highlighted that colorimetric indices—particularly CIRG, Hue, and TAC—were effective in distinguishing grapes based on vine age, especially within the *Cardinal* cultivar. Overall, the findings indicate that vine age can modulate grape quality in a cultivar-specific manner, particularly through its effect on anthocyanin accumulation. These insights underline the importance of considering vineyard age in quality management strategies and contribute to a better understanding of its potential role in red table grape production.

Keywords: Grapevine, vine age, qualitative traits, colorimetric indices.

RARE PROTECTED WOODY PLANTS OF LITHUANIAN FORESTS

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Abstract

Lithuanian forests are home to several rare and legally protected woody plant species that form an important part of the country's natural heritage. Many of these species have become endangered due to changes in land use, drainage of wetlands, and the effects of climate change. Their populations are often small, fragmented, and restricted to specialised habitats.

Among the most vulnerable species are several birches and willows that depend on cold and wet conditions. Plants such as *Betula humilis*, *Betula nana*, *Myrica gale*, *Salix myrtilloides*, *Salix lapponum*, and *Salix repens* survive only in remaining peatlands, fens, or moist heath areas, which are rapidly disappearing. In forested locations, the native ivy *Hedera helix* grows at the northern limit of its natural range and is sensitive to changes in light, humidity, and forest structure. Some species found in semi-open habitats, such as *Prunus spinosa*, also contribute to ecological stability and cultural landscape value.

The protection of these plants requires safeguarding natural water regimes, conserving peatlands, and preventing further habitat fragmentation. Strengthening ecological conditions in these sensitive areas supports not only the survival of individual species but also the overall resilience of forest ecosystems. This presentation highlights the ecological importance of protected woody plants in Lithuania and emphasizes practical measures needed to secure their long-term conservation.

Keywords: rare woody plants; protected species; forest biodiversity; peatland ecosystems; conservation management; Lithuania

THERAPEUTIC POTENTIAL OF HERBAL AND AYURVEDIC MEDICINES IN MODERN HEALTHCARE

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ABSTRACT:

Herbal and Ayurvedic medicines have been used for centuries as natural therapeutic agents and continue to play a significant role in modern healthcare. These plant-based formulations offer safer, cost-effective, and holistic treatment options with fewer side effects compared to synthetic drugs. Ayurvedic herbs such as Ashwagandha, Turmeric, Amla, Neem, and Tulsi possess strong antioxidant, anti-inflammatory, immunomodulatory, and antimicrobial properties. Advances in phytochemistry and pharmacognosy have helped in the scientific validation of active phytoconstituents, improving the quality, safety, and efficacy of herbal formulations. Standardization techniques, novel extraction methods, and incorporation of herbal medicines into modern drug delivery systems—such as nanoparticles and herbal gels—have further enhanced therapeutic benefits. Overall, herbal and Ayurvedic medicines contribute greatly to preventive healthcare, chronic disease management, and wellness promotion, making them a crucial part of integrative medicine.

KEY WORDS :

- Herbal medicine
- Ayurveda
- Phytoconstituents
- Medicinal plants
- Antioxidant activity
- Anti-inflammatory herbs

**POLİETİLEN TABANLI ANTİBLOK MASTERBATCH ÜRETİMİ VE FİLM
BLOKAJ PERFORMANSININ İNCELENMESİ
DEVELOPMENT OF POLYETHYLENE-BASED ANTIBLOCK MASTERBATCH
AND EVALUATION OF FILM BLOCKING PERFORMANCE**

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ÖZET

Bu çalışma, polyolefin ekstrüzyon proseslerinde kullanılan antiblok katkı maddelerine yönelik dışa bağımlılığın azaltılması, ürün portföyünün genişletilmesi ve katma değer yaratılması amacıyla polietilen (PE) taşıyıcılı antiblok masterbatch (MB) formülasyonunun geliştirilmesini hedeflemektedir. Organik (erukamid) ve inorganik (silika/diatomit) antiblok ajanları 5–25 wt % oranında LDPE taşıyıcısına yüklenerek masterbatchler hazırlanmıştır.

Masterbatch formülasyonları, çift vidalı ekstrüder kullanılarak üretildikten sonra blown film hattında %1–2 dozajda filme beslenmiştir. Filmler ASTM D3354 standardına göre film-film blokaj yükü, ASTM D1894 standardına göre statik ve kinetik sürtünme katsayıları (CoF) açısından karakterize edilmiştir. Test cihazının 10 N kapasiteli yük hücresi ile gerçekleştirilen tekrarlı ölçümlerinde blokaj yükleri –0,2 g ile 0,3g arasında değişkenlik göstermiştir.

Test sonuçları, erukamid bazlı organik MB'lerin ortalama blokaj yükü ve sürtünme değerlerinde silika bazlı inorganik MB'lere kıyasla anlamlı derecede üstün performans sergilediğini ortaya koymuştur. En düşük dinamik CoF değeri 0,01 olarak Erucamid_1 örneğinde ölçülmüştür. Standart sapma analizleri, MB formülasyonlarının test koşulları altında tutarlı performans sunduğunu doğrulamıştır. Ayrıca erukamid katkılarının migrasyon potansiyelinin, uzun dönem kullanımda film yüzey özelliklerinin korunması açısından kritik rol oynadığı belirlenmiştir.

Mekanik testler kapsamında filmlerin çekme mukavemeti (MD: 1,96–2,50 g/cm; TD: 2,38–2,82 g/cm) ve kopma uzaması (MD: 826–982 %; TD: 1006–1106 %) değerlendirilmiş; antiblok MB ilavesinin film dayanımı ve sünekliği üzerinde anlamlı bir bozulma yaratmadığı tespit edilmiştir.

Elde edilen bulgular, antiblok MB üretiminin iç kaynaklarla gerçekleştirilebileceğini ortaya koymaktadır. Erucamid temelli MB'ler kayma performansında öncelikli tercih olarak öne çıkarken, silika bazlı MB'ler yüksek hacimli uygulamalar için maliyet etkin çözümler sunmaktadır. Gelecekte katkı dozu optimizasyonu, uzun dönem stabilite ve migrasyon değerlendirmeleri ile film yüzey özelliklerinin korunması yönünde ek çalışmalar önerilmektedir.

Anahtar Kelimeler: Antiblok Masterbatch; Poliolefin; Erucamid; Silika; Blokaj Yükü; Sürtünme Katsayısı

ABSTRACT

This study aims to develop an in-house polyethylene (PE)-based antiblock masterbatch (MB) to reduce import dependency, expand the product portfolio, and add value in polyolefin extrusion processes. Organic (erucamide) and inorganic (silica/diatomite) antiblock agents were incorporated at 5–25 wt % into a low-density polyethylene (LDPE) carrier to formulate MBs. The masterbatches were produced using a twin-screw extruder and dosed at 1–2 wt % in a

blown film line. Films were characterized according to ASTM D3354 for blocking load and ASTM D1894 for static and kinetic coefficients of friction (CoF). Test results with 10 N load cell enabled to reproduce blocking loads between -0.2 g and 0.3 g.

Erucamide-based organic MBs exhibited significantly lower average blocking loads and CoF values compared to silica-based inorganic MBs. The lowest dynamic CoF (0.01) was recorded for the Erucamide_1 formulation. Standard deviation analyses confirmed consistent performance across repeated measurements. Furthermore, the migration potential of erucamide additives was identified as a critical factor in preserving film surface properties during extended use.

Mechanical testing showed that the inclusion of antiblock MBs did not markedly compromise film strength or ductility. Tensile strength values ranged from 1.96 to 2.50 g/cm in the machine direction (MD) and from 2.38 to 2.82 g/cm in the transverse direction (TD). Elongation at break ranged from 826 % to 982 % in MD and from 1006 % to 1106 % in TD.

These findings demonstrate the feasibility of internal antiblock MB production. Erucamide-based MBs are recommended for applications demanding superior slip performance, while silica-based MBs offer cost-effective solutions for high-volume film production. Future work will focus on optimizing additive loadings and conducting comprehensive long-term migration and stability assessments to ensure sustained film performance.

Keywords: Antiblock Masterbatch; Polyolefin Extrusion; Erucamide; Silica; Blocking Load; Friction Coefficient; Migration

**RAINWATER HARVESTING POTENTIAL IN DHAKA METRO STATIONS:
A CASE STUDY FOR NON POTABLE WATER SUPPLY AT MIRPUR 10 STATION
DHAKA, BANGLADESH**

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ABSTRACT

Rapid urbanization and rising water demand in Dhaka city have increased pressure on municipal water supply systems which makes sustainable alternatives crucial for future infrastructure. Using Mirpur-10 Metro Station as a case study, this analysis examines the rainwater harvesting (RWH) potential across Bangladesh's metro network (MRT Line-6) to meet the daily non-potable water demand. Utilizing ArcGIS spatial analysis, the total rooftop catchment area was quantified as 5110 m². Analysis of NASA Giovanni data from 2004 to 2023 shows the study area had received an average annual rainfall of 1,921.65 mm. The total volume of rainwater harvested was estimated using Darcy's law. A simple demand-supply balance was then applied to determine feasible storage sizing and the proportion of non-potable water needs like toilet flushing, cleaning and service operations which can be met by the harvested rainwater. Results indicate that the studied area can satisfy a substantial portion of non-potable water demand during the monsoon season, with moderate storage capacity allowing a notable reduction in reliance on municipal water supply, making the system an economical and sustainable solution for one of our biggest problems.

Keywords: Rainwater harvesting (RWH), Dhaka Metro Rail, sustainable water supply, Non-potable water demand.

THE IMPACT OF DIET IN THE LAST WEEKS OF PREGNANCY – FOODS THAT HELP FOR AN EASIER DELIVERY.

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Abstract

Introduction: In the last weeks of pregnancy, maternal nutrition plays an important role not only for the health of the mother and the fetus, but also for preparing the body for the process of childbirth. The aim of this study is to assess the level of knowledge that pregnant women have regarding the impact of diet in the last weeks of pregnancy and the foods that may help in facilitating childbirth. **Objectives:** To identify the sources of information that pregnant women use about diet in the last weeks of pregnancy, and to identify the foods that women consider as helpful in facilitating the process of childbirth. **Methodology:** This is a cross-sectional study, conducted in the city of Vlora during the period January–September 2025.

Results: A total of 110 pregnant women in their third trimester (28–40+ weeks) participated in the study, responding to a structured questionnaire. The data were processed using descriptive methods (percentages, mean). Knowledge regarding the impact of nutrition on easing childbirth: 32% ‘Yes’, 43% ‘No’, 25% ‘Do not know’. Foods considered beneficial: Fruits 34%, Grains 41%, Others 26%. Important vitamins: Calcium 21%, Iron 38%, Magnesium 24%, Vitamin C 17%. Sources of information: Gynecologist 38%, Nurse 21%, Family/friends 16%, Internet 25%. Sufficient information reported: 46% ‘Yes’, 33% ‘No’, 21% ‘Do not know’.

Conclusions: The study shows that the level of knowledge about the impact of diet on easing childbirth is limited, as only one third of women are aware of the role of nutrition, while the rest either do not know or lack information. There is a clear need for more structured educational and counseling interventions from health professionals (gynecologists and nurses), in order to improve pregnant women's knowledge on the importance of diet at the end of pregnancy and its impact on the childbirth process.

Keywords: Diet, knowledge, vitamins, sources of information, health education

CHARACTERIZATION AND DEVELOPMENT OF NOPAL CACTUS (PRICKLY PEAR) FLOUR-BASED BAKERY PRODUCTS

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Abstract

This study aimed to characterize the functional, nutritional, textural, antioxidant, and sensory properties of bakery products developed using nopal cactus (*Opuntia ficus-indica*) flour as a partial substitute for wheat flour. Cookies were formulated using nopal flour at substitution levels of 0% (F0), 10% (F1), 20% (F2), 30% (F3), and 40% (F4). Proximate and mineral analyses confirmed the rich nutritional profile of nopal flour, showing notably high dietary fiber (27.65%) and ash content (17.73%), along with substantial levels of essential minerals such as calcium (845.2 mg/100 g), potassium (1125.8 mg/100 g), and magnesium (192.3 mg/100 g). Functional assessments demonstrated increased bulk density and moisture retention with rising substitution levels, while the expansion ratio declined. Color measurements indicated higher redness and reduced brightness and yellowness with increasing nopal flour incorporation. Texture profiling revealed a gradual increase in hardness, accompanied by variable fracturability across treatments. Antioxidant evaluations showed significant enhancements in total phenolic content, DPPH radical scavenging activity, and FRAP values, confirming improved antioxidant potential with higher nopal flour substitution. Sensory results indicated overall acceptability across formulations, with the 30% substitution level (F3) receiving the highest scores for taste, texture, appearance, and overall liking. Overall, the findings demonstrate that nopal cactus flour can be effectively utilized in bakery applications to enhance nutritional value and functional quality without compromising consumer acceptability.

Keywords: Nopal cactus, functional cookies, antioxidant activity, bakery products, *Opuntia ficus-indica*

**EVOLUTION OF WIND LOAD PROVISIONS FOR URBAN AREA LIKE
KOLKATA METROPOLITAN CITY IN IS 875 (PART 3): A COMPARATIVE
PERSPECTIVE FROM 1987 TO 2015**

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Abstract:

India's wind load design concept has undergone a substantial modernization with the revision of IS 875 (Part 3) from its 1987 edition to the 2015 version. The update is a result of greater knowledge of boundary layer wind behavior, advances in meteorological data processing, and the requirement for increased structural safety in areas that are prone to cyclones and are quickly urbanizing. Despite being fundamental, the 1987 code could not adequately account for localized turbulence, changing urban roughness, or rising cyclonic activity since it depended on broad terrain classifications, a static wind speed map, and simple gust factor formulations. IS 875 (Part 3):2015, on the other hand, includes revised recommendations that are more closely linked with worldwide wind engineering standards, refined terrain and height-dependent coefficients, and updated fundamental wind speed maps derived from extended climatological records. The addition of the k_z cyclonic significance factor, which explicitly increases design wind loads in high-risk coastal zones, is a significant improvement in the 2015 revision. This adjustment recognizes that wind demand has historically been underestimated in areas like eastern India, especially Kolkata, where strong cyclones have frequently exposed weaknesses in buildings built using preconceived notions. Furthermore, the 2015 code offers stricter formulations for exposure categories, turbulence intensity, and gust response, resulting in more accurate and realistic design wind pressure estimations for mid- and high-rise buildings. All things considered, the upgrading from IS 875 (Part 3):1987 to IS 875 (Part 3):2015 represents a change from streamlined static procedures to a data-driven, risk-informed, and region-specific approach. Particularly for tall buildings located in quickly growing and cyclone-sensitive regions, the updated rules significantly improve the accuracy of wind load assessment and offer a more robust foundation for guaranteeing structural resilience.

Keywords: IS 875 (Part 3), Cyclone-prone region, Basic wind speed, Design wind pressure

MATHEMATICAL ANALYSIS ON PHYSIOLOGICAL EFFECT OF CHRONIC OBSTRUCTIVE PULMONARY CANCER DUE TO HABIT OF SMOKING

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Abstract:

Smoking is a major cause of various types of cancer, including lung, oral, throat, bladder, kidney, pancreas, and stomach cancer, this smoking-related disease mainly affects the lungs' alveoli, or air sacs, and airways. The toxic compounds in tobacco smoke affect the respiratory system and cause damage to the airways, leading to a narrowing of the air passages and mucus production. As a result, the lungs become less efficient at transferring oxygen into the bloodstream, making breathing more difficult. In advanced stages, COPD can also affect the heart, leading to complications such as heart failure. While there is currently no cure for COPD, there are treatments that can help to control the symptoms and delay the illness's progression. In order to effectively manage COPD, changes in lifestyle like giving up smoking, avoiding triggers in the environment, and engaging in regular exercise are essential. Medications like bronchodilators, inhaled corticosteroids, and oxygen therapy are commonly prescribed to improve breathing and reduce inflammation. Mathematical modelling is employed to analyse the effects of smoking lead to lungs problems. Runge- Kutta fourth order method is employed to demonstrate the how the normal cells are converted into diseased cells due to smoking leads to respiratory disease like cancer.

Keywords: Cancer, toxic, lung, respiratory, oxygen, bloodstream.

**MALNÜTRİSYON TEDAVİSİNDE KULLANILAN MEDİKAL BESLENME
ÜRÜNLERİNDE STERİLİZASYON AŞAMASININ VİSKOZİTE ÜZERİNE ETKİSİ**
EFFECT OF STERILIZATION ON VISCOSITY IN MEDICAL NUTRITION PRODUCTS
USED IN MALNUTRITION TREATMENT

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ÖZET

Malnütrisyon tedavisinde kullanılan medikal beslenme ürünleri, içerik kadar fiziksel özellikleriyle de kritik öneme sahiptir. Bu çalışmada, sterilizasyon sürecinin ürün viskozitesi üzerindeki etkileri hem hasta konforu hem de üretim verimliliği açısından incelenmiştir. Sterilizasyon, mikrobiyal güvenlik için zorunlu bir adımdır; ancak yüksek sıcaklık uygulaması ürünün akışkanlık özelliklerini değiştirebilir. Literatür ve yapılan analizler, tek aşamalı sterilizasyon uygulanan ürünlerin genellikle daha düşük viskoziteye sahip olduğunu göstermektedir. Bu durum, içimi kolaylaştırmakta ve gastrointestinal toleransı artırmaktadır. Temel neden, kısa ısı işlem süresinin protein ve polisakkarit yapılarında daha az yapısal değişikliğe yol açmasıdır.

Viskozite, üretim sürecinde ısı transferi, pompalama ve karıştırma gibi operasyonları doğrudan etkileyen bir parametredir. Daha düşük viskozite, bu süreçlerde enerji verimliliğini ve üretim hızını artırmaktadır. Çalışmada yapılan duyu analizlerde, tek aşamalı sterilizasyon uygulanan ürünler panelistler tarafından “daha akışkan” ve “içimi kolay” olarak tanımlanmıştır. Ölçümlerde, çift aşamalı sterilizasyonda viskozite 60–65 mPa·s iken, tek aşamalı sterilizasyonda 50–55 mPa·s aralığında bulunmuştur. Bu fark, tek aşamalı yöntemin daha kısa ısı maruziyetle ürünün yapısal bütünlüğünü koruduğunu göstermektedir.

Proses açısından bakıldığında, yüksek viskozite ısı transferini zorlaştırarak sterilizasyon süresini ve enerji tüketimini artırır. Tek aşamalı sterilizasyon ise hem üretim süresini hem de enerji maliyetini azaltarak verimlilik sağlar. Sonuç olarak, tek aşamalı sterilizasyonla üretilen medikal beslenme ürünleri, düşük viskozite sayesinde hasta uyumunu artırırken üretim süreçlerinde de avantaj sunmaktadır.

Anahtar Kelimeler: Sterilizasyon, Medikal Beslenme Ürünleri, Viskozite

ABSTRACT

Medical nutrition products used in the treatment of malnutrition are critically important not only for their composition but also for their physical properties. In this study, the effects of the sterilization process on product viscosity were examined in terms of both patient comfort and production efficiency. Sterilization is an essential step for microbial safety; however, the application of high temperatures can alter the flow characteristics of the product. Literature and conducted analyses show that products subjected to single-stage sterilization generally have lower viscosity. This improves ease of consumption and enhances gastrointestinal tolerance. The main reason is that the shorter thermal treatment causes less structural change in proteins and polysaccharides.

Viscosity is a parameter that directly affects operations such as heat transfer, pumping, and mixing during production. Lower viscosity increases energy efficiency and production speed in these processes. Sensory analyses in the study revealed that products sterilized in a single stage were described by panelists as “more fluid” and “easier to drink.” Measurements showed that viscosity ranged between 60–65 mPa·s in double-stage sterilization, while it was 50–55 mPa·s

in single-stage sterilization. This difference indicates that the single-stage method preserves the structural integrity of the product through shorter thermal exposure.

From a process perspective, high viscosity complicates heat transfer, increasing sterilization time and energy consumption. Single-stage sterilization reduces both production time and energy costs, thereby improving efficiency. In conclusion, medical nutrition products produced with single-stage sterilization offer advantages in patient compliance thanks to lower viscosity, while also providing benefits in production processes.

Keywords: Sterilization, Medical Nutrition Products, Viscosity

**ULAŞIM AĞLARININ YABAN HAYATI AÇISINDAN ÖNCELİKLİ DOĞAL
ALANLAR ÜZERİNDEKİ BARIYER ETKİSİNİN İNCELENMESİ**
INVESTIGATION OF THE BARRIER EFFECT OF TRANSPORTATION NETWORKS ON
WILDLIFE-PRIORITY NATURAL AREAS

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ÖZET

Kentleşme, sanayileşme, ulaşım altyapısının genişlemesi gibi antropojenik süreçler, doğa üzerindeki insan baskısını artırmakta ve insan ile yaban hayatının ortak peyzajı paylaşmasını zorunlu hale getirmektedir. Özellikle ulaşım ağlarının gelişimi sonucunda ortaya çıkan habitat parçalanmaları, yaban hayatı hareketliliğini kısıtlayarak biyolojik çeşitliliğin azalmasına ve ekosistem bütünlüğünün bozulmasına yol açmaktadır. Yol ağlarının yaban hayatı üzerindeki olumsuz etkilerini azaltmak için uyarı levhaları, hız düzenlemeleri, yaban hayatı geçitleri gibi çeşitli yöntemler uygulanmaktadır. Bu çalışmada, ulaşım ağlarının yaban hayatı için öncelikli görülen önemli doğa alanları ve yaban hayatı geliştirme sahaları üzerinde oluşturduğu olumsuz etkileri incelemek amaçlanmıştır. Önemli doğa alanları üzerindeki parçalanma etkisi, erişimi kontrollü ve yüksek hız barındıran yol sınıflarına odaklanarak otoyollar, bölünmüş il ve devlet yolları ve demiryolları üzerinden değerlendirilmiştir. Parçalanma durumunda doğal alanların yol tarafından bölünmesi ve kesilmesi durumu incelenmiştir. Yaban hayatı geliştirme sahalarındaki parçalanma etkisi ise alanların küçük yüzölçümleri ve belirli hedef türlere odaklanan koruma yaklaşımları nedeniyle otoyollar, bölünmüş il ve devlet yolları, demiryolları ve asfalt yollar üzerinden değerlendirilmiştir. Parçalanma durumunda alanın yol tarafından bölünmesi ve yol etki bölgesinde bulunması incelenmiştir.

İncelemeler sonucunda önemli doğa alanlarının yarısından fazlasında yol etkisi bulunduğu gözlemlenmiştir. Türkiye bölgesel ölçekte değerlendirildiğinde, doğal alanların yollar tarafından en fazla etkilendiği bölgeler sırasıyla Doğu Karadeniz Bölgesi, Güneydoğu Anadolu Bölgesi ve Doğu Anadolu Bölgesi olarak sıralanmaktadır. Yaban hayatı geliştirme sahalarının önemli bir bölümü yakınlıktan dolayı ulaşım ağlarının etki bölgesinde bulunmakta, bazı sahalar ise yollar tarafından direkt bölünmektedir. Genel olarak, yol etkisine maruz kalan sahalar toplam yaban hayatı geliştirme sahalarının yarısından fazlasını oluşturmaktadır. Çalışmada yol ağlarının etkisi ve doğal alanların parçalanma durumu detaylı olarak ele alınmıştır. Bulgular, ulaşım ağlarının güçlü bir bariyer etkisi yarattığını ve bu etkiyi azaltmak için yol sistemine entegre yaban hayatı geçitleri ile ekolojik koridorların planlanmasının gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Ulaşım Ağları, Habitat Parçalanması, Yaban Hayatı, Önemli Doğa Alanları, Yaban Hayatı Geliştirme Sahaları

ABSTRACT

Urbanization, industrialization, and the expansion of transportation infrastructure are anthropogenic processes that increase human pressure on nature and necessitate the sharing of landscapes between humans and wildlife. Habitat fragmentation resulting from the

development of transportation networks, in particular, restricts wildlife mobility, leading to a decline in biological diversity and the disruption of ecosystem integrity. Various methods are applied to reduce the negative effects of road networks on wildlife, such as warning signs, speed regulations, and wildlife crossings. This study aims to examine the negative effects of transportation networks on important natural areas and wildlife development areas that are considered a priority for wildlife. The fragmentation effect on important natural areas was evaluated by focusing on road classes with controlled access and high speeds, such as highways, divided state and county roads, and railways. The fragmentation effect was examined in terms of the division and cutting of natural areas by roads. The fragmentation effect on wildlife development areas was assessed through highways, divided provincial and state roads, railways, and asphalt roads, due to the small size of the areas and conservation approaches focused on specific target species. The study examined the division of the area by the road and its location within the road's impact zone in cases of fragmentation.

The studies revealed that more than half of the important natural areas were affected by roads. When Turkey was evaluated on a regional scale, the areas most affected by roads were the Eastern Black Sea Region, the Southeastern Anatolia Region, and the Eastern Anatolia Region, respectively. A significant portion of wildlife development areas are located within the impact zone of transportation networks due to their proximity, while some areas are directly divided by roads. Overall, areas exposed to road impact constitute more than half of the total wildlife development areas. The study details the impact of road networks and the fragmentation status of natural areas. The findings reveal that transportation networks create a strong barrier effect and highlight the need to plan wildlife crossings and ecological corridors integrated into the road system to mitigate this effect.

Keywords: Transportation Networks, Habitat Fragmentation, Wildlife, Important Natural Areas, Wildlife Development Areas

MULTI-ANALYTICAL ELUCIDATION OF BIOACTIVE METABOLITES AND ANTIOXIDANT CAPACITY IN *ATALANTIA SIMPLICIFOLIA* LEAF EXTRACT

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Abstract

This study aimed to evaluate the phytochemical activity, antioxidant properties, and major functional groups present in the ethanolic leaf extract of *Atalantia simplicifolia* (ELEAS) using phytochemical screening, GC–MS/MS analysis, and FT-IR spectroscopy. The antioxidant properties were investigated using various *in vitro* assay techniques, including total antioxidant capacity, total tannin content, and DPPH radical scavenging activity. Chemical constituents were profiled using GC–MS/MS, while functional groups were identified through FT-IR spectroscopy. The phytochemical screening revealed the presence of a wide variety of plant metabolites. The quantitative results highlighted phenolic (12.14 mg GAE/gm of dry extract), tannins (20.67 mg GAE/gm of dry extract), and flavonoids (81.39 mg GAE/gm of dry extract) in the leaf. ELEAS showed significant DPPH radical scavenging activity with IC₅₀ values of 17.75 µg/mL. On GC–MS/MS analysis, it revealed the presence of 204 compounds and was identified by comparing their retention time. FT-IR analysis showed significant peaks for O-H, C–O, C=C, and M-O functional groups. Overall, the findings indicate that ELEAS possesses substantial antioxidant potential and rich phytochemical diversity, supporting its suitability as a promising natural source for pharmaceutical, nutraceutical, and health-promoting applications.

Keywords: *Atalantia simplicifolia*, Phytochemical screening, antioxidant, GC-MS/MS, FT-IR

COMPARISON OF SOAKED AND UNSOAKED CBR VALUES OF MOORUM OVERLAY OVER CLAY SUBGRADE

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Abstract:

The structural integrity and service life of flexible pavements depend primarily on the strength and bearing capacity of the subgrade. In regions where clayey soils dominate, low strength and excessive deformation under traffic loads necessitate soil improvement techniques. This study investigates the enhancement in California Bearing Ratio (CBR) values achieved by overlaying a clay subgrade with a layer of moorum at a 1:1 thickness ratio. The experimental program was conducted using heavy compaction energy corresponding to the Modified Proctor method, in accordance with IS:2720 (Part 16). Both clay and moorum samples were characterized through standard laboratory tests including grain size analysis, Atterberg limits, specific gravity, and compaction. Soaked and unsoaked CBR tests were performed for clay, moorum, and their composite matrix under varying moisture contents (12%–20%). Results revealed a significant improvement in the soaked CBR value from 6.32% for pure clay at 12% moisture to 8.26% for the clay–moorum composite under similar conditions. However, increasing moisture content caused a progressive decline in CBR for all samples, underscoring the moisture sensitivity of both materials. The findings demonstrate that a moorum overlay substantially improves load-bearing capacity and reduces moisture-induced deformation, making it a cost-effective and sustainable option for subgrade reinforcement in rural and low-volume roads. The study contributes valuable insights into the practical use of locally available materials to enhance pavement performance while minimizing construction costs.

Keywords: Alluvial Soil, California Bearing Ratio (CBR), Subgrade, Moorum

EMPAGLIFLOZIN IMPROVES FMD IN CKD: MODULATION BY THE 786T>C POLYMORPHISM OF eNOS

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Background and Aims: Chronic kidney disease (CKD) patients, who are known to carry a markedly increased risk of cardiovascular disease, frequently display pronounced endothelial dysfunction accompanied by measurable disturbances in microcirculatory hemodynamics. This vascular impairment, defined by reduced nitric oxide (NO) bioavailability, diminished endothelial responsiveness, and enhanced oxidative stress, represents a fundamental contributor to the initiation, progression, and overall burden of atherosclerosis. As a result, endothelial dysfunction has become widely recognized not only as an important risk factor for atherosclerotic development but also as a valuable early indicator and potential predictive marker for cardiovascular disease. Sodium-glucose co-transporter-2 (SGLT-2) inhibitors—such as empagliflozin and dapagliflozin—have emerged in recent years as highly effective therapies for both diabetes and chronic kidney disease. Beyond their well-established glucose-lowering effects, these agents offer notable cardiovascular and renal protective benefits, many of which are believed to arise through improvements in endothelial biology, vascular tone regulation, and reduction of oxidative stress. The endothelial nitric oxide synthase (eNOS) gene plays a pivotal role in governing NO synthesis, a central mediator responsible for maintaining vascular homeostasis, promoting vasodilation, and preventing platelet aggregation. Polymorphisms in the eNOS gene, particularly the T(-786)C variant, can influence NO production and consequently modify individual responses to SGLT-2 inhibitor therapy.

Therefore, the aim of this study is to evaluate the effect of empagliflozin on endothelial function, measured through flow-mediated dilation (FMD), in patients with CKD, and to determine whether the eNOS T(-786)C polymorphism modulates the magnitude or consistency of this therapeutic effect.

Method: A prospective and controlled clinical study was conducted involving 120 CKD patients (eGFR 25–75 mL/min/1.73m²), all of whom received empagliflozin (10 mg daily) for a total duration of 12 weeks. Endothelial function was assessed using standardized brachial artery FMD measurements, while genotyping of the eNOS T(-786)C polymorphism was performed through polymerase chain reaction (PCR) analysis. Participants were categorized into three genotype groups for comparison: TT (n = 42), TC (n = 31), and CC (n = 47).

Results: Baseline FMD values were comparable across the three genotype categories: TT (6.2 ± 0.4%), TC (6.1 ± 0.5%), and CC (6.0 ± 0.4%). After 12 weeks of empagliflozin therapy, significant improvements were observed in FMD among TT and TC carriers (TT: 7.9 ± 0.5%, p < 0.001; TC: 7.6 ± 0.4%, p < 0.001). In contrast, although the CC group exhibited a slight increase in FMD (6.2 ± 0.5%), this change did not reach statistical significance (p = 0.09). These genotype-dependent differences suggest that the T(-786)C polymorphism may meaningfully influence the vascular benefits achieved with empagliflozin therapy.

Conclusion: Empagliflozin leads to a significant enhancement of endothelial function in CKD patients, with the most pronounced improvement observed in individuals carrying the TT and TC genotypes of the eNOS T(-786)C polymorphism. The lack of statistically significant benefit in CC carriers implies the presence of underlying genetic determinants that may influence drug

responsiveness. Further investigations are warranted to clarify the mechanistic basis of this variability and to support the development of personalized therapeutic strategies tailored to genetic profiles in CKD management.

Keywords: eNOS gene polymorphism, chronic kidney disease, empagliflozin

**FROM DISPLACEMENT TO CULTIVATION: HISTORICAL TRAJECTORIES OF
AGRARIAN ADAPTATION AMONG ROHINGYA REFUGEES IN COX’S BAZAR
(1978–2025)**

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This paper will investigate how prolonged displacement has reshaped the agrarian lives, ecological practices, and collective memories of Rohingya refugees living in Cox’s Bazar camps. While most of the existing studies on the Rohingya crisis focuses on humanitarian and political dimensions, this paper will situate their experience within a longer historical continuum of agricultural adaptation with the factor of forced migration in play. Using archival research, oral histories, and spatial analysis, this study will reconstruct how successive refugee generations have negotiated land scarcity, shifting economies, and environmental degradation since 1978. It will examine how memories of agrarian life in pre-displacement Rakhine are reinterpreted within the ecological and institutional constraints of Bangladeshi refugee settlements.

The analysis will integrate environmental history, political ecology, and historical perspectives to explore how agrarian identities are reconstructed through both necessity and remembrance. The research is expected to demonstrate that displaced Rohingya communities maintain adaptive agricultural knowledge and ecological resilience that challenge dominant narratives of refugee dependency on host nation.

Foregrounding the intersections of land, labor, and memory, this study aspires to be part of the emerging scholarship on refugee agroecologies and agrarian resilience in South Asia. It will also offer some insights for policymakers and humanitarian organizations seeking sustainable approaches to livelihood planning and environmental management for refugees.

Keywords: Agrarian history, Rohingya refugees, Environmental adaptation, displacement, memory, Cox’s Bazar

OPTIMIZING PLANT SYNERGY IN HERBAL GEL: FORMULATION AND EVALUATION FOR ANTIFUNGAL ACTIVITY

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Abstract.

The aims of this research to formulate and evaluate an herbal gel having *Randia Dumetorum* (Madanphala). The formulation was considered by using ethanoic and aqueous extract of *Randia Dumetorum* fruit in different concentrations. The extracts were subjected to various physicochemical evaluations and qualitative phytochemical evaluation. The gel was prepared by using a gelling agent- Carbopol 934 of concentration 1%, 1.5%, 2%, 2.5% and 3%. The herbal formulation was investigated for its antifungal action and it was investigated that the herbal formulation has prompted antifungal action, which was comparable with ketoconazole standard drug. However, the action was found to be due to the herbal drugs. In vitro antifungal activity was assessed against fungal pathogens *Candida albicans* using the agar diffusion method. The agar diffusion method was employed to measure the zone of inhibition, providing an indication of the gel's effectiveness in inhibiting fungal growth. Additionally, High Performance Thin Layer Chromatography (HPTLC) studies were utilized to identify the active components and confirm the presence of functional groups associated with antifungal activity. while UV spectroscopy confirmed the absorbance profile of the active phytoconstituents, indicating their stability within the gel. The prepared herbal gel showcasing antifungal efficacy compared to individual plant fruit extracts and a commercially available standard. Test parameters for topical gel includes pH, extrudability, and spreadability, diffusion, and stability test. The results of this study presented that *Randia Dumetorum* fruit extracts had antifungal activity. This research highlights the potential of plant synergy in herbal gel formulations, offering a promising approach for the development of topical antifungal treatments with minimal side effects.

Keywords: Herbal gel, HPTLC, Topical drug delivery, Antifungal activity, Topical treatment

**THE DYNAMICS OF INSTITUTIONAL ADJUSTMENT IN LATER LIFE:
A MULTIDIMENSIONAL ANALYSIS OF IDENTITY, AUTONOMY AND SOCIAL
INTEGRATION**

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Abstract

The study examines the complex process of adaptation among older adults entering institutional care settings, emphasizing the interplay between psychological, social, and relational determinants that shape their transition. Institutionalization in later life is rarely a neutral decision; it often emerges from cumulative vulnerabilities such as declining health, limited family support, or structural constraints within community-based care. Conversely, some older adults consciously opt for institutional environments in the pursuit of safety, autonomy, and reduced burden on family members.

Drawing on contemporary gerontological theories—including Activity Theory, Age Stratification Theory, and Social Identity Theory—the analysis explores how older adults negotiate identity changes, redefine roles, and engage with new social structures following admission to a residential facility. These perspectives illuminate the mechanisms through which individuals maintain agency, continuity, and psychological well-being despite the challenges associated with relocation and institutional routines.

The paper highlights the central role of social workers in mediating the adaptation process, facilitating empowerment, fostering meaningful participation, and ensuring that institutional practices align with the rights and dignity of older persons. Understanding psychosocial determinants—such as perceived control, social support networks, emotional resilience, and institutional climate—is essential for designing evidence-based interventions that enhance quality of life in residential care.

In the context of global population aging, the study underscores the urgency of re-evaluating institutional care not as a final stage of dependency but as a potential environment for security, relational reciprocity, and optimized well-being. By integrating theoretical frameworks with practical implications, the paper contributes to a more nuanced conceptualization of aging within institutional settings and supports the development of ethical, person-centered models of long-term care.

Keywords (English) Elderly; Institutional care; Psychosocial adaptation; Social identity; Age stratification; Autonomy; Quality of life; Social work.

**EVALUATING LOW-COST CLAY WHEEL THERAPY AS AN ACCESSIBLE
MENTAL HEALTH INTERVENTION FOR MIDDLE-INCOME ADULTS IN
BANGLADESH: A MIXED-METHOD STUDY**

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Abstract:

Adults in Bangladesh with middle-income status are becoming more anxious, depressed, and stressed chronically, but traditional therapeutic services remain financially inaccessible for this group. This paper explores how low-cost clay wheel therapy is an effective, non-stigmatized form of mental health intervention to meet the requirements of middle-class populations. The study particularly looks at the role of rhythmic motor activity, sensory engagement, and non-verbal expression of emotions that are inherent in wheel throwing in reducing psychological distress and emotional control. This question is critical considering the gap in the current services since the ceramic studios like Clay Station BD currently cater to the high-income group, and the middle-income groups are not served greatly. A seven-week mixed-method design was employed, which consisted of creating an affordable community-based clay-and-wheel therapy studio where participants could attend. The quantitative assessment resources (GAD-7, PHQ-9, PSS-10) were used in addition to behavioral observations, reflective journals, and semi-structured interviews to assess the level of anxiety, depressive symptoms, perceived stress, emotional stability, and social connectedness changes. Results have shown that rhythmic rotation of the wheel and tactile engagement with clay can promote grounding, self-regulation, and enhanced emotional processing, which can be counted towards the recorded reductions of psychological distress. The research finds that clay wheel therapy is a potential and cost-effective mental health support option for middle-income adults. It suggests that such creative models of therapy should be incorporated into community wellness programs. Policy implications are that government agencies and public health institutions can consider subsidizing or institutionalizing clay-based therapeutic programs in order to enhance equal access to non-medical mental health services in Bangladesh. Keywords: Clay Wheel Therapy, Emotional Regulation, Middle-Income Adults, Rhythmic Motor Activity, Sensory Engagement

GEOSPATIAL MODELING OF URBAN FLOOD VULNERABILITY IN DHAKA CITY: AN INTEGRATED REMOTE SENSING, GIS, AND AHP-FUZZY SMCE APPROACH

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ABSTRACT

The severity of floods has increased in recent years, especially in urban areas, and they pose significant threats to infrastructure, human life, and the environment. Increased urbanization, destruction of forests, and climate change are the main causes of these escalated situations, highlighting the necessity of appropriate disaster risk reduction measures. To address these issues, this study integrates the Analytic Hierarchy Process (AHP), Fuzzy Logic Model, Spatial Multi-Criteria Evaluation (SMCE) Method, and Geoinformation Technology to provide an enhanced methodological approach for flood vulnerability assessment in Dhaka, Bangladesh. Integrating these approaches provides a systematic and thorough framework for evaluating flood vulnerability by incorporating spatial analysis, uncertainty modeling, and decision-making procedures. To identify high-risk flood-prone areas, Geographic Information Systems (GIS) are essential to this study because it makes it easier to integrate, analyze, and visualize spatial data layers.

The AHP method ensures a methodical and quantitative approach to decision-making by determining the relative importance of fifteen specified flood susceptibility factors. The Fuzzy Logic Model uses fuzzy linear membership functions to convert the input variables into fuzzy sets, which tackles the inherent ambiguity and uncertainty related to flood vulnerability. The flood vulnerability assessment becomes more accurate by this fuzzification process. After that, a thorough flood vulnerability map is created using the weighted sum overlay technique, which captures regional variations in risk levels.

According to the study's findings, about 9%, 21%, and 29% of the entire study area are classified as being in extremely high, high, and moderate vulnerability zones, respectively. This suggests that almost 60% of Dhaka is at high risk of flooding. Kamrangirchar and Khilgaon have been selected as the most vulnerable regions due to the presence of highly high-vulnerability areas throughout their areas.

The study utilizes an accuracy assessment and computes the overall accuracy, user accuracy, producer accuracy and kappa coefficient value to verify the model's reliability, and it achieved an overall accuracy score for reliability of 88%. This validation demonstrates an excellent level of accuracy in evaluating flood vulnerability, confirming the robustness of the combined approach. Based on the findings, a strategic management plan has been developed to address the flooding threats in the area. Given that the modeling approach integrates remote sensing data, GIS, and AHP-Fuzzy SMCE techniques, it has the potential to be adapted for use in other urban areas, both within the country and internationally, with some localized adjustments. Stakeholders and government officials can reduce the risk of flooding and improve urban resilience by utilizing the synergies of AHP, Fuzzy Logic, SMCE, and GIS. This strategy's multidisciplinary nature highlights its potential for tackling intricate flood threats and promoting long-term disaster risk reduction projects.

Keywords: Urban flooding · Analytical hierarchy process (AHP), Fuzzy membership function · Geographic information system (GIS) & Remote sensing

INTELLECTUAL PROPERTY RIGHTS IN OUTER SPACE: CHALLENGES AND OPPORTUNITIES IN THE NEW SPACE AGE

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Abstract

The rapid commercialization of outer space, propelled by private enterprises such as SpaceX, Blue Origin, and international initiatives like the Artemis Accords, has amplified the urgency for effective intellectual property rights (IPR) frameworks beyond Earth's atmosphere. Conventional terrestrial IP regimes, anchored in treaties like the Paris Convention (1883) and TRIPS Agreement (1994), encounter profound jurisdictional lacunae in the extraterrestrial domain, exacerbated by the Outer Space Treaty (1967)'s prohibition on national appropriation of celestial bodies. This abstract delineates the core challenges, including patent enforceability in microgravity environments, conflicts between IP exclusivity and the principle of space as the "province of all mankind," technology transfer obligations, and enforcement voids amid geopolitical rivalries. Concurrently, it highlights opportunities for innovation, such as national legal extensions (e.g., U.S. 35 U.S.C. § 105), blockchain-enabled IP tracking, and proposed international harmonization via a WIPO-administered treaty. Ultimately, the analysis advocates for a nuanced IPR paradigm that incentivizes trillion-dollar investments in space exploration while ensuring equitable access, preventing monopolistic barriers, and aligning with sustainable development goals in the burgeoning New Space Age.

Keywords: Intellectual Property Rights (IPR), Outer Space, New Space Age, Commercialization of Space, Outer Space Treaty (1967), Patent Enforceability Non-Appropriation Principle Jurisdictional Challenges Space, Innovation Artemis Accords, Technology Transfer Blockchain in IP Space, etc.

EXPLORING STUDENT ENGAGEMENT IN CAMPUS SUSTAINABILITY PRACTICES: A CASE STUDY ON UNIVERSITY OF RAJSHAHI

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Abstract:

This study explores the influencing factors of student engagement in sustainability activities of the University of Rajshahi in Bangladesh, using a mixed method case study. The research, which involved 200 students and interviews with administration staff, finds a significant discrepancy between students' high levels of support for sustainability and their engagement with sustainability-related actions. Although 87.1% of the students had a good knowledge of the sustainability issue and they felt a high responsibility about it (mean score = 1.59 scale 1–5) the most important obstacle in being involved in a project was the lack of information related to the existing programs (mentioned more than 40 times) and the lack of facilities. There were major institutional difficulties identified in the qualitative findings like absence of formal cooperation between the students and the administration, perennial lack of maintenance staff on campus and fewer review meetings. This “value-action gap” reflects that, more than student apathy, structural problems restrict volunteerism. The study suggests the need for open communication between students and administration, specific modes of communication regarding sustainability projects, and an expansion of the role of student organizations. Such institutional changes would help to narrow the gap between students' sustainability values and environmental behaviour on campus and offer a model for effecting similar change in other new universities in developing countries.

Keywords: *Campus sustainability, Campus environmental practice, Value-action gap, Environmental behavior, University sustainable programs*

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EFFECT OF PFPE-BASED ADDITIVES ON THE WETTABILITY AND SURFACE ENERGY OF NYLON FILMS

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In this study, the use of perfluoropolyether (PFPE)-based polyesters as functional additives was investigated to enhance the water- and oil-repellent surface properties of Nylon films. PFPE-based polyesters were synthesized with different terminal groups ($-\text{OH}/\text{C}_4\text{F}_9\text{-PFPE}$ and $\text{C}_4\text{F}_9\text{-PFPE}/\text{C}_4\text{F}_9\text{-PFPE}$). These synthesized polyesters were blended with the Nylon matrix. Nylon/PFPE film were obtained via a dip-coating process. They were also annealed at 140 °C. The surface morphology and wettability of the films before and after annealing were characterized using atomic force microscopy (AFM) and contact angle measurements. The results demonstrated that PFPE additives effectively migrated to the Nylon film surface and imparted pronounced water and oil repellency. The wettability behavior of the surfaces was found to depend primarily on two factors: (i) *the chemical structure of the terminal groups of the PFPE polyesters* and (ii) *the surface reorganization occurring after annealing*. The highest level of water and oil repellency was achieved with the polyester containing $\text{C}_4\text{F}_9\text{-PFPE}$ tails at both ends. These polyesters incorporated into the Nylon matrix provided low surface energy and oil resistance comparable to polytetrafluoroethylene (PTFE). Overall, the findings indicate that PFPE-based oligomeric polyesters represent an effective and sustainable alternative to environmentally harmful long-chain perfluoroalkyl compounds.

Keywords: Hydrophobicity, Oleophobicity, Perfluoropolyether, Nylon

ÇİFT KATMANLI CEPHELERİN POZİTİF ETKİLERİ VE AVANTAJLARI POSITIVE IMPACTS AND ADVANTAGES OF DOUBLE-SKIN FACADES

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ÖZET

Çift katmanlı cepheler, modern mimarideki en önemli teknolojik yenilikler arasında yer alır ve bir bina ile çevresi arasındaki ilişkinin anlaşılmasında niteliksel bir değişimi temsil eder. Temel prensipleri, havalandırma, sıcaklık ve ses yalıtımı için tampon bir bölge görevi gören bir hava boşluğuyla ayrılmış, iç ve dış olmak üzere iki ayrı katman kurgusuna dayanır. Bu sofistike sistem, doğal ışık kullanımı ve çevre yalıtımı arasında ideal bir denge sağlayarak, binaların enerji tüketiminin azaltılmasına ve iç mekân konforunun artırılmasına önemli ölçüde katkıda bulunur. Özellikle yoğun kent merkezlerinde, dış gürültüyü absorbe ederek akustik konforu da maksimum seviyeye çıkarır.

Çift katmanlı cepheler, değişen iklim koşullarına dinamik bir şekilde uyum sağlama yetenekleriyle öne çıkar. Dış katman, yaz aylarında güneş ışınlarına karşı koruyucu bir kalkan görevi görürken, kış aylarında pasif ısı kazancı sağlayarak ısıyı muhafaza eder. İki katman arasındaki ara boşluk ise, baca etkisi prensibiyle cephenin doğal havalandırmasını sağlayarak mekanik soğutma ve ısıtma sistemlerine olan bağımlılığı minimize eder. Bu boşluk aynı zamanda kirli havanın dışarı atılmasına ve taze havanın kontrollü şekilde içeri alınmasına yardımcı olarak iç hava kalitesinin iyileştirilmesine de kritik bir katkı sağlar. Cephenin bileşenleri arasındaki bu dinamik etkileşim, sürdürülebilirliği destekleyen entegre bir ekosistem oluşturur.

Estetik açıdan ele alındığında çift katmanlı cepheler, binalara şeffaflık, ritim ve görsel derinliği birleştiren prestijli ve çağdaş bir karakter kazandırır. Gün boyunca değişen ışık ve gölge etkileri oluşturmak için cam, alüminyum ve hafif membranlar gibi yenilikçi malzemeler kullanılır. Ayrıca, fotovoltaiik güneş panelleri, otomatik gölgelik sistemleri veya akıllı sensörlere sahip hareketli paneller gibi ileri teknolojilerin tasarıma entegre edilmesi, cephenin davranışını anlık çevresel koşullara göre adapte eden 'akıllı' ve dinamik bir yapı ortaya çıkarır.

Günümüzde çift cepheler, sürdürülebilir mimarinin temel taşlarından biri olarak kabul edilmekte; enerji verimliliği, karbon ayak izinin azaltılması ve kullanıcı konforunun artırılması gibi küresel hedeflere kapsamlı bir çözüm sunmaktadır. Bu üstün özellikleriyle, sadece bugünün değil, geleceğin çevreye duyarlı, estetik kaygıları gözetken ve yüksek performanslı binaları için güçlü bir model oluşturmaktadır.

Anahtar Kelimeler: Çift katmanlı cepheler, Enerji Verimliliği , Çevresel Performans, Doğal Havalandırma, Cephe Estetiği.

ABSTRACT

Double skin facades are among the most important technological innovations in modern architecture and represent a qualitative shift in understanding the relationship between a building and its environment. Their fundamental principles are based on a two-layer structure, inner and outer, separated by an air gap that serves as a buffer zone for ventilation, temperature, and sound insulation. This sophisticated system provides an ideal balance between natural light

use and environmental insulation, significantly contributing to reducing the energy consumption of buildings and increasing indoor comfort. Especially in dense urban centers, it maximizes acoustic comfort by absorbing external noise.

Double skin facades stand out with their ability to dynamically adapt to changing climatic conditions. The outer layer acts as a protective shield against solar rays during summer months, while preserving heat by providing passive heat gain during winter months. The intermediate gap between the two layers minimizes dependency on mechanical cooling and heating systems by enabling natural ventilation of the facade through the stack effect principle. This gap also makes a critical contribution to improving indoor air quality by helping to exhaust stale air and admit fresh air in a controlled manner. This dynamic interaction between the facade's components creates an integrated ecosystem that supports sustainability.

From an aesthetic perspective, double skin facades give buildings a prestigious and contemporary character that combines transparency, rhythm, and visual depth. Innovative materials such as glass, aluminum, and light membranes are used to create changing light and shadow effects throughout the day. Furthermore, integrating advanced technologies such as photovoltaic solar panels, automatic shading systems, or movable panels with smart sensors into the design reveals a 'smart' and dynamic structure that adapts the facade's behavior according to instantaneous environmental conditions.

Today, double facades are accepted as one of the cornerstones of sustainable architecture, offering a comprehensive solution to global goals such as energy efficiency, reducing the carbon footprint, and increasing user comfort. With these superior features, they constitute a powerful model for the environmentally sensitive, aesthetically conscious, and high-performance buildings of not only today but also the future.

Keywords: Double skin facades, Energy Efficiency, Environmental Performance, Natural Ventilation, Facade Aesthetics.

**THE LEVEL OF UTILIZATION OF VIDEO CONFERENCING PLATFORM FOR
LEARNING AMONG UNDERGRADUATE STUDENTS IN NIGER STATE,
NIGERIA**

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Abstract

This study examined the level of utilization of video conferencing platform for learning among undergraduate students in Niger State, Nigeria. The study adopted a descriptive survey research design. A sample of 360 undergraduate students was selected, 2 research questions were raised. A researcher-designed structured questionnaire was used for data collection and reliability coefficients of 0.96 was obtained for the utilization of Video conferencing. Descriptive statistics of Mean and Standard Deviation were used to answer the research questions and Independent Sample t-test to analyze hypothesis.

Findings of the study revealed that undergraduate students do not utilize Video conferencing for learning with a grand mean of 1.73. In light of the findings, it was recommended that conferences, seminars and workshops should be organized for undergraduate students to increase their level of utilization of the numerous opportunities available with Video conferencing.

Keywords: utilization, Video conferencing and learning platform.

NANOTECHNOLOGY IN DRUG DELIVERY: ENHANCING THERAPEUTIC OUTCOMES

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ABSTRACT

As nanotechnology can enhance how medications enter and function in the body, it has emerged as a key instrument in contemporary drug delivery. Drugs can be delivered straight to the intended location, shielded against deterioration, and released under regulated conditions via nanoparticles. This lessens adverse effects while improving therapy efficacy. Different kinds of nanocarriers, including solid lipid nanoparticles, polymeric nanoparticles, liposomes, and dendrimers, have special benefits for transporting biomolecules and small-molecule medications. Nanotechnology-based systems have demonstrated significant promise in recent years in fields like gene delivery, infectious illnesses, and cancer therapy. They are appropriate for precision and personalized therapy due to their capacity to increase bioavailability, improve solubility, and deliver tailored action. Nanotechnology is still a quickly expanding subject with great promise to change future drug delivery methods and enhance treatment outcomes, despite obstacles with safety, large-scale production, and regulatory approval.

Keywords: Nanoparticles, Polymeric Nanoparticles, Liposomes, Cancer therapy, Bioavailability.

FDDS IN HELICOBACTER PYLORI INFECTION THERAPY - AN OVERVIEW

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ABSTRACT:

Helicobacter pylori (*H. pylori*) infection is a major global health concern and is strongly associated with chronic gastritis, peptic ulcer disease, gastric mucosal inflammation, and gastric carcinoma. Despite the availability of multiple antibiotic regimens, complete eradication of *H. pylori* remains challenging due to rapid gastric emptying, short residence time of drugs in the stomach, degradation of antibiotics in acidic pH, poor patient compliance, and the growing problem of antibiotic resistance. Conventional oral delivery systems often fail to maintain therapeutic drug concentrations at the gastric mucosa, resulting in reduced treatment efficacy and recurrence of infection. Floating Drug Delivery Systems (FDDS) have gained significant attention as an advanced gastroretentive approach that can overcome these limitations. FDDS are designed to remain buoyant on gastric fluids for prolonged periods, increasing gastric residence time and allowing sustained, localized release of antibiotics directly at the infection site. This prolonged retention enhances the stability of acid-labile drugs, improves their contact with the gastric mucosa, reduces dosing frequency, and ultimately contributes to higher eradication rates. Various FDDS platforms—including effervescent floating tablets, non-effervescent systems, hollow microspheres, floating beads, in-situ gelling formulations, and raft-forming systems—have been extensively explored for antibiotics such as clarithromycin, amoxicillin, metronidazole, levofloxacin, and tetracycline. Overall, FDDS represents a promising and innovative strategy for improving treatment outcomes, reducing recurrence, and addressing current challenges in *H. pylori* infection therapy.

KEY WORDS: Floating Drug Delivery System, Gastroretentive Drug Delivery, *Helicobacter pylori*, Gastric Residence Time, Sustained Drug Release, Effervescent Systems, Non-Effervescent Systems, Clarithromycin, Amoxicillin, In-situ Gel, Floating Microspheres, Proton Pump Inhibitors.

**“SOCIO-BEHAVIORAL DYNAMICS INFLUENCING SOLAR ENERGY
ADOPTION IN THE RURAL CONTEXT OF WALWA TALUKA, SANGLI.”**

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Abstract:

As the world shifts toward renewable energy, it becomes essential to understand the human side of this transition — how people’s thoughts, behaviors, and social surroundings shape their choices. This study looks into the socio-behavioral factors that influence how rural households in Walwa Taluka, Sangli district, accept and use solar energy.

Although solar technology is becoming more accessible, its adoption in rural areas is still low. Factors such as limited awareness, financial constraints, community influence, and personal perceptions often affect the decision to go solar. To explore this, the research uses a mix of surveys and interviews to understand how education, social norms, and attitudes play a role in energy-related decisions.

The findings highlight what truly motivates or discourages people from adopting solar energy. These insights can help policymakers, local authorities, and renewable energy developers design more people-centered strategies. The study aims to support a smoother and more inclusive shift toward sustainable energy in rural communities.

Keywords: Solar Energy Adoption, Socio-Behavioral Factors, Rural Communities, Walwa Taluka, Awareness and Perception,

“BRIDGING PERCEPTION AND PRACTICE: BEHAVIORAL FACTORS IN SOLAR ENERGY ADOPTION AMONG RURAL RESIDENTS OF WALWA TALUKA”

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Abstract

The shift to solar energy in rural regions relies not just on finances or technology but also on public perceptions and attitudes toward it. In numerous villages, the choice to adopt solar energy is influenced by social factors, awareness, and daily routines. Certain families are uncertain due to a lack of knowledge about the technology, concerns about expenses, or skepticism regarding its reliability. Trust is crucial—when individuals have faith in local installers or receive positive comments from neighbors, they are more inclined to give it a shot. Conversely, reliance on conventional energy sources and the absence of repair or maintenance assistance frequently cause people to feel uncertain. Nevertheless, as environmental awareness increases and more success stories circulate within the community, interest in solar energy keeps climbing. Grasping these human factors can assist the government, NGOs, and energy suppliers in creating improved awareness initiatives, training workshops, and effective incentives that motivate more rural households to adopt solar energy.

Keywords: Solar energy adoption, Behavioral influence, Rural communities, Renewable energy, Consumer awareness, Sustainable living, Technology acceptance.

CURRICULUM DEVELOPMENT TO ENHANCE STUDENTS' ALGORITHMIC THINKING SKILLS IN THE ERA OF DIGITAL TRANSFORMATION

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Abstract

This study examines the role of curriculum development in fostering algorithmic thinking skills among school students within the accelerating landscape of digital transformation. As education systems confront rapid technological shifts, the ability to think algorithmically—through structuring problems, identifying patterns, and designing step-by-step solutions—has become a fundamental competency for learners in the twenty-first century.

The research explores contemporary approaches to integrating algorithmic thinking into school curricula, analyzes existing gaps in instructional design, and highlights the pedagogical principles needed to support this integration effectively. It also proposes a developmental framework that aligns learning objectives, teaching strategies, and assessment tools with the cognitive requirements of algorithmic thinking.

Through a review of recent literature and global best practices, the study underscores the importance of embedding computational and algorithmic reasoning across various subjects rather than limiting it to computer science alone. The findings emphasize that well-designed curricula can significantly enhance students' problem-solving abilities, digital literacy, and readiness for future academic and professional pathways. Ultimately, the paper calls for a strategic shift toward curriculum modernization to empower learners with the skills necessary to thrive in a digitally driven world.

Keywords

Algorithmic Thinking, Curriculum Development, Digital Transformation, Computational Thinking, 21st-Century Skills, Problem-Solving Skills, Educational Innovation, Learning Design, Digital Literacy, Pedagogical Frameworks.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN ENHANCING RESEARCH QUALITY ACROSS ACADEMIC DISCIPLINES

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Abstract

Artificial Intelligence (AI) is rapidly transforming how research is conducted across academic fields by automating time consuming tasks, strengthening analytical capabilities, and improving transparency, reproducibility, and reporting practices. This systematic literature review brings together current evidence on the ways AI tools especially large language models (LLMs), machine learning (ML) techniques, and AI-supported analytical systems contribute to improving research quality. The review synthesizes insights from 25 multidisciplinary studies, focusing on AI's influence on data collection, data analysis, academic writing, peer-review processes, reproducibility, and ethical standards in research.

Across the literature, AI shows clear benefits such as faster workflows, greater scalability, reduced human error, and the ability to detect deeper patterns in complex data. However, recurring challenges persist, including algorithmic bias, limited transparency, and risks of overreliance on automated tools. Ethical issues such as authorship, accountability, and data privacy are also increasingly highlighted.

Using a PRISMA informed approach, the review classifies studies by AI function (data processing, analysis, writing support, peer review, and research integrity) and by academic discipline (STEM, social sciences, humanities, and medical sciences). It also summarizes the main methods used to assess "research quality," including reproducibility tests, citation indicators, validation studies, human AI comparison metrics, and writing-quality evaluations.

The review proposes a model suggesting that AI's impact on research quality is shaped by researchers' AI skills, discipline specific norms, and institutional policies. It concludes with a research agenda calling for transparent AI workflows, clear authorship standards, stronger bias-detection tools, and cross-disciplinary benchmarks for reproducibility. Overall, the synthesis provides a comprehensive view of AI's expanding role in scholarly work and identifies priorities for strengthening methodological rigor and ethical practice in AI enabled research.

Keywords: Artificial Intelligence, Research Quality, Academic Disciplines, Large Language Models, Machine Learning, and Academic Writing.

CHALLENGES OF SOCIAL INTERACTIONS IN RECREATIONAL FORESTS: AN ANALYSIS OF VISITOR BEHAVIOUR AND EXPERIENCES

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Abstract

People visit forests for many reasons — to relax, walk, exercise, spend time with family, or simply get away from daily stress. As more people use the same forest areas, different expectations and behaviours sometimes clash. This study looks at what situations most often cause tension between visitors in Lithuanian recreational forests and how these situations affect people's overall experience.

The survey shows that conflicts usually arise when quiet visitors meet those who behave more actively or unpredictably. Some are disturbed by noise, some by uncontrolled dogs, others by fast-moving activities like jogging or cycling. While part of the public is able to ignore such disturbances, many people change their route or avoid certain forest places after negative experiences. This means that the social atmosphere in the forest is just as important as the quality of the trails or facilities.

The results highlight that small and simple management steps can make a big difference. Clear signs, information about expected behaviour, and separating areas for different activities help visitors understand each other better and reduce tension. These measures create a calmer, safer and more pleasant space for everyone. By focusing on respectful use of the forest and helping visitors share the same place more smoothly, we can improve both the quality of recreation and the long-term sustainability of these important natural areas.

Keywords: recreational forests, visitor behaviour, social interactions, conflict prevention, forest management

**NONLINEAR RANDOMISED COMPLETE BLOCK DESIGN AND ANALYSIS OF
SAPONINS EFFECT ON CRUDE OIL SPILL REMEDIATION.**

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Abstract

In this study, an intrinsically nonlinear randomized complete block design (INRCBD) model with fixed and random block effects where the mean part of the INRCBD model follows a three-parameter Weibull growth function are formulated. The parameters of the formulated models are estimated using the estimated generalized least square (EGLS) approach where the variance components for random block and error terms are estimated via maximum likelihood estimator (MLE) and restricted maximum likelihood estimation (REML). The fitted models adequacy and goodness of fit are assessed using the median adequacy measures (MAM). The formulated models were applied to a $7^1 \times 6^1$ treatment combination data with 3 blocks for determining the effects of Saponins on oil spillage remediation. The results from MAM and IC revealed that the Weibull RCBD model with random block effect with parameters estimated using the EGLS-MLE is most adequate and provided the best fit compared to the other models. Also, the results further revealed that the EGLS-MLE estimator consistently outperformed EGLS-REML based on its parameter estimates lower standard errors. Hence, the estimates of the INRCBD model with random block effect from EGLS-MLE is more adequate, stable, and reliable.

Keywords:

Weibull, Intrinsically, RCBD, EGLS-REML, EGLS-MLE

SYNTHESIS, STRUCTURAL CHARACTERIZATION, DFT INVESTIGATION, AND
HIRSHFELD SURFACE ANALYSIS OF $\text{Na}_{0.5}\text{M}_{0.25}\text{Ti}_2(\text{PO}_4)_3$ ($\text{M} = \text{Zn}, \text{Ni}$)

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Abstract: This work presents a systematic physico-chemical study of titanium phosphate compounds with the general formula $\text{Na}_{0.5}\text{M}_{0.25}\text{Ti}_2(\text{PO}_4)_3$ ($\text{M} = \text{Mn}, \text{Ni}$). The synthesized materials were characterized by X-ray diffraction (XRD) and infrared (IR) spectroscopy, supported by density functional theory (DFT) calculations. Both compounds crystallize in the orthorhombic system with space group $Pmmm$ ($Z = 4$). The refined unit cell parameters are: $a = 14.59 \text{ \AA}$, $b = 13.31 \text{ \AA}$, $c = 2.60 \text{ \AA}$ for $\text{Na}_{0.5}\text{Mn}_{0.25}\text{Ti}_2(\text{PO}_4)_3$, and $a = 14.60 \text{ \AA}$, $b = 13.31 \text{ \AA}$, $c = 2.67 \text{ \AA}$ for $\text{Na}_{0.5}\text{Ni}_{0.25}\text{Ti}_2(\text{PO}_4)_3$. The crystal structures, similar to that of $\text{Li}_{0.5}\text{M}_{0.25}\text{Ti}_2(\text{PO}_4)_3$, consist of interconnected $[\text{TiO}_6]$ octahedra and $[\text{PO}_4]$ tetrahedra forming a three-dimensional framework along the c -axis. The Mn^{2+} and Ni^{2+} cations are located in half of the antiprismatic interstitial sites and exhibit ordered distribution. The DFT calculations confirm the structural stability and provide insights into the electronic properties of the compounds.

Keywords: Sodium titanium phosphates; X-ray diffraction; Infrared spectroscopy (IR); NASICON-type structure; Solid-state materials; (HSA; ELF, DFT)-calculations

ADAPTATION, TRANSLATION, AND CROSS-CULTURAL VALIDATION OF THE CERVICAL DISABILITY INDEX (NDI) FOR USE IN THE ALBANIAN-SPEAKING POPULATION

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Abstract

Neck pain is a common musculoskeletal condition, and the Neck Disability Index (NDI) is one of the most widely used self-reported questionnaires for assessing disability related to cervical disorders. Cross-cultural adaptation procedures are essential to ensure that translated instruments remain conceptually equivalent and culturally appropriate for use in diverse populations. The aim of this study is to translate, culturally adapt, and validate the NDI for Albanian-speaking individuals. This observational cross-cultural study will be conducted online, with the Albanian version of the NDI administered individually through a Google-based questionnaire platform. The adaptation process will follow internationally recommended methodology, including forward translation, back-translation, and systematic diffusion of the questionnaire for data collection and analysis. Psychometric properties will be evaluated with a sample of approximately 500 participants, and reliability will be assessed through measures of stability and internal consistency. We anticipate positive feedback regarding the clarity, cultural relevance, and usability of the Albanian version of the NDI, supporting its application in both clinical practice and research settings.

Keywords: Neck Disability Index; Albanian Population; Translation; Validity.

**HALIÇPORT'TA KIYI KANUNU VE PLANLAMA DİNAMİKLERİ: ÇED TEMELLİ
BİR DEĞERLENDİRME
COASTAL LAW AND PLANNING DYNAMICS IN HALIÇPORT: AN EIA-BASED
EVALUATION**

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ÖZET

İstanbul'un tarihsel liman dokusunun en hassas bileşenlerinden biri olan Haliç kıyıları, son yıllarda büyük ölçekli turizm ve ulaşım yatırımlarıyla yeniden biçimlenmekte; bu dönüşüm, kıyı alanlarının kamu yararı ve kullanım bakımından nasıl yönetildiği sorusunu yeniden gündeme taşımaktadır. Haliç Tersanesi'nin bugünkü dönüşümü olan "Haliçport" Projesi, bu tartışmaların merkezine yerleşmiş örneklerden biridir. Projeye ait Çevresel Etki Değerlendirme (ÇED) süreci özellikle kıyı alanının turizm-yat limanı işlevine dönüştürülmesi ve bunun kıyı erişimi ile planlama yetkileri üzerindeki etkileri nedeniyle gündeme gelmiştir.

Proje sahipleri tarafından büyük ölçekli bir yeniden geliştirme girişimi olarak, kamuoyu tarafından ise Okmeydanı Kentsel Dönüşüm Projesi'nin kıyıya açılan uzantısı olarak anılan projede; turizm, konaklama, kültür, konut ve liman işlevleri Haliç kıyısında yoğunlaşmakta olup, bu durum ÇED Raporu'nun 3621 sayılı Kıyı Kanunu ve 644 sayılı KHK bağlamında kıyı alanındaki merkezi yetki ile yatırımcı odaklı kullanımın nasıl bir araya getirildiğini yorumlama biçiminin incelenmesini gerekli kılmaktadır.

Öte yandan, Haliçport Projesi kamuoyunda çeşitli yönleriyle tartışılmış olsa da, Nihai ÇED Raporu'nun 3621 sayılı Kıyı Kanunu ve 644 sayılı KHK'yı nasıl yorumladığını ve bu yorumun planlama sürecine nasıl yansıdığını sistematik biçimde inceleyen bir akademik çalışma bulunmamaktadır. Oysa kıyı alanlarında hızla artan turizm-yat limanı projeleri ve merkezileşen planlama yetkisi, kıyı peyzajlarının kamuya açıklığı, mekânsal kurgusu ve ekolojik sürekliliği üzerinde doğrudan etkiler yaratmakta; bu nedenle ÇED raporlarının mevzuatı nasıl ele aldığına dair değerlendirmeler bugün yalnızca hukuksal değil, peyzaj planlama açısından da kritik bir gereklilik hâline gelmektedir. Haliçport Örneği, benzer kıyı projelerinin değerlendirilmesi için bu yorumlayıcı çerçevenin yeniden ele alınmasını gerekli kılmaktadır.

Bu çalışma, Haliçport ÇED Raporu'nun 3621 sayılı Kıyı Kanunu ile 644 sayılı KHK bağlamındaki planlama sürecini nasıl yorumladığını ve bu çerçevenin kıyısal kamusalık üzerine tartışmalarla nasıl kesiştiğini değerlendirmeyi amaçlamaktadır. Yöntem olarak, 'İstanbul Haliç Yat Limanı ve Kompleksi Entegre Projesi Nihai ÇED Raporu' (2016) başta olmak üzere ilgili üst-ölçek planlar, 3621 sayılı Kıyı Kanunu ve 644 sayılı KHK doküman analiziyle incelenmiştir. Ayrıca projenin kamuoyundaki tartışılma biçimi ikincil bir veri olarak değerlendirilmiştir.

Anahtar Kelimeler: Haliçport, Kıyı Kanunu, Planlama Yetkisi, Kamu Yararı, Yatırım Odaklı Kullanım

ABSTRACT

As one of the most sensitive components of Istanbul's historical port landscape, the Golden Horn shoreline has been reshaped in recent years by large-scale tourism and transportation investments. This transformation has reignited questions regarding how coastal zones are managed in terms of public interest and public use. The ongoing transformation of the historic shipyard area, known today as the "Haliçport" Project, has become a focal example of these debates. The project's Environmental Impact Assessment (EIA) process has drawn particular attention due to the conversion of the coastal area into a tourism-marina zone and the resulting implications for shoreline access and planning authority.

While project proponents describe Haliçport as a major redevelopment initiative, the public often interprets it as an extension of the Okmeydanı Urban Transformation Project toward the shoreline. The concentration of tourism, accommodation, cultural, residential, and marina functions along the Golden Horn raises the need to examine how the EIA Report interprets the relationship between centralized authority and investment-oriented coastal use within the framework of the Coastal Law No. 3621 and Decree Law No. 644.

Although Haliçport has been publicly debated from various angles, there is a notable absence of academic studies that systematically analyze how the Final EIA Report interprets Law No. 3621 and Decree Law No. 644, and how this interpretation shapes the planning process. Yet the rapid increase in tourism-marina projects and the growing centralization of planning authority directly influence the public openness, spatial configuration, and ecological continuity of coastal landscapes. For this reason, evaluating how EIA documents interpret legal frameworks has become a critical requirement not only from a legal perspective but also for landscape planning. The Haliçport case illustrates the need to revisit this interpretive framework when assessing similar coastal projects.

This study examines how the Haliçport EIA Report interprets the planning process within the framework of the Coastal Law No. 3621 and Decree Law No. 644, and how this interpretation intersects with debates on coastal publicness. Methodologically, the study is grounded in document analysis of the "Final EIA Report for the Istanbul Golden Horn Marina and Complex Integrated Project" (2016), along with relevant upper-scale plans, the Coastal Law No. 3621, and Decree Law No. 644. Public debates surrounding the project are also evaluated as secondary data.

Keywords: Haliçport, Coastal Law, Planning Authority, Public Interest, Investment-Oriented Coastal Use

**KÜNT GÖĞÜS TRAVMASI SONRASI TRAVMATİK VENTRİKÜLER SEPTAL
RÜPTÜR: BİR OLGU SUNUMU**
TRAUMATIC VENTRICULAR SEPTAL RUPTURE AFTER BLUNT CHEST TRAUMA:
A CASE REPORT

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Özet

Elli bir yaşında erkek hasta, araç içi trafik kazası sonrası çoklu travma nedeniyle acil servise başvurmuştur. Hastanın bilinen sistemik hastalığı yoktu ve daha önce yapılan kardiyak değerlendirmelerinde normal koroner anatomi ve normal ekokardiyografik bulgular saptanmıştı. Travma sonrası yapılan tetkiklerde femur shaft kırığı, çoklu kot fraktürleri ve sağ pnömotoraks belirlenmiştir. Kardiyak yaralanma olasılığını dışlamak amacıyla yapılan incelemelerde troponin düzeylerinde anlamlı artış saptanmış, eşlik eden sistolik üfürüm üzerine yapılan transtoraks ekokardiyografi (TTE) incelemesinde sol ventrikülden sağ ventriküle şant izlenmiştir. Bulgular travmatik ventriküler septal rüptür (VSR) ile uyumlu bulunmuş ve tanı kardiyak manyetik rezonans görüntüleme (MRG) ile doğrulanmıştır. Defektin küçük çaplı olması, hastanın asemptomatik seyretmesi ve cerrahi girişimi reddetmesi nedeniyle konservatif tedavi planlanmıştır.

Travmatik VSR, nadir görülen ancak potansiyel olarak yaşamı tehdit eden bir kardiyak yaralanmadır. Genellikle kalbin ani kompresyonuna bağlı olarak intraventriküler basınçta artış sonucu ortaya çıkar. Tanıda en sık kullanılan yöntem TTE olup, defektin anatomik özellikleri, şant miktarı ve eşlik eden lezyonlar hakkında bilgi sağlar. Küçük ve asemptomatik musküler VSR olgularında konservatif yaklaşım önerilirken, büyük defektlerde cerrahi veya perkütan kapama yöntemleri tercih edilmektedir.

Bu olgu, künt toraks travması sonrası gelişen nadir bir komplikasyon olan travmatik VSR'nin erken tanısında ekokardiyografinin önemini vurgulamaktadır. Yüksek troponin düzeyleri ve yeni gelişen sistolik üfürüm varlığında yapısal kardiyak hasar olasılığı mutlaka değerlendirilmelidir.

Anahtar Kelimeler: Travma, ventriküler septal rüptür, ekokardiyografi

Abstract

A 51-year-old male patient was admitted to the emergency department following a motor vehicle accident with multiple traumatic injuries. The patient had no known systemic diseases, and previous cardiac evaluations, including coronary angiography and transthoracic echocardiography (TTE), had revealed normal findings. Post-trauma imaging identified a femoral shaft fracture, multiple rib fractures, and a right pneumothorax. Elevated cardiac troponin levels prompted further cardiac assessment. TTE performed due to the presence of a systolic murmur demonstrated a left-to-right shunt at the interventricular septum, consistent with a ventricular septal rupture (VSR). The diagnosis was confirmed by cardiac magnetic resonance imaging (MRI). Given the small defect size, absence of symptoms, and the patient's refusal of invasive intervention, conservative management was planned.

Traumatic VSR is a rare but potentially life-threatening cardiac injury that usually occurs due to sudden compression of the heart between the sternum and vertebral column, resulting in a marked rise in intraventricular pressure. TTE is the primary diagnostic tool, providing detailed information about defect anatomy, shunt magnitude, ventricular function, and associated cardiac lesions. Conservative treatment is recommended for small, asymptomatic muscular VSRs, whereas larger defects generally require surgical or percutaneous closure due to their higher risk of hemodynamic compromise.

This case highlights the importance of early recognition of traumatic VSR following blunt chest trauma. The presence of elevated troponin levels and a new-onset systolic murmur should raise suspicion for underlying structural cardiac injury. Prompt echocardiographic evaluation enables early diagnosis and guides appropriate multidisciplinary management to improve patient outcomes.

Keywords: Trauma, ventricular septal rupture, echocardiography

**SOL ANA KORONER ARTER KÖKENLİ SAĞ KORONER ARTER ANOMALİSİNE
BAĞLI GELİŞEN AKUT KORONER SENDROM: NADİR BİR OLGU**
ACUTE CORONARY SYNDROME DUE TO RIGHT CORONARY ARTERY ANOMALY
ORIGINATING FROM THE LEFT MAIN CORONARY ARTERY: A RARE CASE

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Özet

Koronar arter anomalileri genellikle tesadüfen saptanan, nadir görülen klinik durumlardır. Bu olguda, bilinen kardiyak hastalığı bulunmayan bir hastada akut koroner sendrom (AKS) tablosu ile ortaya çıkan ve sol ana koroner arterden (LMCA) köken alan anomali sağ koroner arter (RCA) varyasyonunu içeren nadir bir vaka sunulmaktadır.

73 yaşında erkek hasta, geçirilmiş tüberküloz, kronik obstrüktif akciğer hastalığı ve hipertansiyon öyküsüyle takip edilmekteyken göğüs ağrısı nedeniyle acil servise başvurdu. Başvuru elektrokardiyografisi(EKG) normal sinüs ritminde olup belirgin iskemi bulgusu içermiyordu. Transtorasik ekokardiyografide asendan aort dilatasyonu dışında ek bir patoloji saptanmadı. Ancak kardiyak enzim düzeylerinin anlamlı yüksekliği üzerine hasta non-ST elevasyonlu miyokard infarktüsü (NSTEMI) tanısıyla koroner yoğun bakıma kabul edildi. Yapılan koroner anjiyografide RCA'nın LMCA'dan köken aldığı ve anomali segmentte kritik darlık bulunduğu izlendi. Hastaya perkütan koroner girişim uygulanarak lezyon başarıyla stentlendi. İşlem sonrasında hastanın göğüs ağrısı geriledi ve klinik durumu stabil seyretti.

Sol ana koroner arter kökenli RCA anomalisi oldukça nadirdir ve semptomatik olduğunda klinik açıdan önem kazanmaktadır. Bu olguda EKG'nin normal olması tanısal açıdan yanıltıcı olsa da, kardiyak biyobelirteçlerdeki yükselme ve klinik tablo tanı sürecini yönlendirmiştir. Koroner arter anomalilerinin varlığı, hem tanısal değerlendirme hem de girişimsel tedavi planlamasında dikkat ve deneyim gerektirir. Bu vaka, AKS ile başvuran hastalarda koroner anomalilerin mutlaka göz önünde bulundurulması gerektiğini vurgulamakta; anomali RCA'ya uygulanan başarılı perkütan girişim, hızlı tanı ve zamanında müdahalenin önemini ortaya koymaktadır.

Anahtar Kelimeler: Koroner arter anomalisi, akut koroner sendrom, koroner anjiyografi

Abstract

Coronary artery anomalies are rare clinical conditions, usually detected incidentally. This case presents a rare case of an anomalous right coronary artery (RCA) variant originating from the left main coronary artery (LMCA) that presented with acute coronary syndrome (ACS) in a patient with no known cardiac disease.

A 73-year-old man, who was being followed for a history of tuberculosis, chronic obstructive pulmonary disease, and hypertension, presented to the emergency department with chest pain. His initial electrocardiogram (ECG) showed normal sinus rhythm and no obvious signs of ischemia. Transthoracic echocardiography revealed no additional pathology other than ascending aortic dilatation. However, due to significantly elevated cardiac enzyme levels, the patient was admitted to the coronary intensive care unit with a diagnosis of non-ST elevation

myocardial infarction (NSTEMI). Coronary angiography revealed that the RCA originated from the LMCA and that the anomalous segment had critical stenosis. The patient underwent percutaneous coronary intervention, and the lesion was successfully stent-treated. Following the procedure, the patient's chest pain resolved, and his clinical condition remained stable.

Anomalies RCA originating from the LMCA are extremely rare and become clinically significant when symptomatic. While a normal ECG in this case was diagnostically misleading, the elevation in cardiac biomarkers and the clinical presentation guided the diagnostic process. The presence of coronary artery anomalies requires careful attention and experience in both diagnostic evaluation and interventional treatment planning. This case highlights the importance of considering coronary anomalies in patients presenting with ACS; successful percutaneous intervention for an anomalous RCA demonstrates the importance of rapid diagnosis and timely intervention.

Keywords: Coronary artery anomaly, acute coronary syndrome, coronary angiography

BIYOSANAT PERSPEKTİFİNDEN GELENEKSEL TÜRK SANATININ YORUMLANMASI

REINTERPRETING TRADITIONAL TURKISH ART FROM A BIOART PERSPECTIVE

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ÖZET

Bakteriyel sanat, farklı bakteri türlerinin pigment ve büyüme özelliklerini kullanarak zaman içinde şekli ve rengi değişen, yaşayan sanat eserleri üreten çağdaş bir biyosanat yaklaşımıdır. Biyolojiden ilham alan ve canlı organizmalar, dokular ya da biyomoleküller gibi biyolojik bileşenler kullanılarak üretilen bir sanat formu olan Biyosanat'ın ortaya çıkışı, mikroorganizmaların sanat alanında kullanımına yönelik ilgiyi önemli ölçüde artırmıştır. Mikroorganizmaları ve onların pigmentlerini sanatsal bir ifade aracı olarak bilinçli biçimde kullanan ilk bakteriyel sanat örneği, 1928'de antibiyotik penisilini keşfederek modern tıpta devrim yaratan Sir Alexander Fleming tarafından oluşturulmuştur. Bakteriyel sanat, canlı organizmaların kullanımı nedeniyle nihai sonucun öngörülemezliğiyle geleneksel sanat yöntemlerinden belirgin biçimde ayrılır. Bu sanat formunda "boya", agar adlı "tuval" üzerinde büyüyen, hareket eden ve yayılan canlı bakterilerden oluşur. Buna karşılık, geleneksel türk sanatı, yüzyıllar boyunca belirli kurallar, motifler ve estetik prensipler çerçevesinde gelişen son derece kontrollü bir sanatsal disiplindir. Bu iki alanı birleştirmenin en temel amacı, yüzyıllardır süregelen geleneksel türk sanatının modern biyoteknolojik yöntemlerle yeniden yorumlamak ve çağdaş bir ifade biçimine kavuşturmadır. Bu yeni sanatsal ifade biçimi, bakterilere yönelik yaygın algıyı genişleterek onların insan toplumu, ekosistem ve gezegen için sunduğu olumlu katkıları görünür kılmada etkili bir eğitim aracı işlevi görebilir. Çalışmamızda, geleneksel türk sanatı teknikleri adapte edilerek mikroorganizma süspansiyonları farklı desenlerde agar yüzeyine uygulandı. Pigment yayılımı ve mikrobiyal etkileşimlerle türk deseninin biyolojik bir yorumu elde edilmiştir. Süreç bir yandan insanın kontrollü çizgisini, diğer yandan bakterilerin kendiliğinden büyümesini birleştiren hibrit bir sanat yöntemi sunmuştur. Bu yaklaşım hem kültürel yenilik hem de bilimsel farkındalık yaratır.

Anahtar kelimeler: Bakteriyel sanat, Biyosanat, Geleneksel türk sanatı, Mikrobiyoloji

ABSTRACT

Bacterial art is a contemporary bioart approach that utilizes the pigments and growth properties of different bacterial species to create living works of art that change shape and color over time. The emergence of bioart, an art form inspired by biology and produced using biological components such as living organisms, tissues, or biomolecules, has significantly increased interest in the use of microorganisms in art. The first example of bacterial art that consciously uses microorganisms and their pigments as a means of artistic expression was created by Sir Alexander Fleming, who revolutionized modern medicine with his discovery of the antibiotic penicillin in 1928. Bacterial art distinguishes itself significantly from traditional artistic methods by the unpredictability of the final result due to the use of living organisms. In this art form, the "paint" consists of living bacteria that grow, move, and spread on a "canvas" called agar. In contrast, traditional Turkish art is a highly controlled artistic discipline that has

developed over centuries within a framework of specific rules, motifs, and aesthetic principles. The primary goal of combining these two fields is to reinterpret centuries-old traditional Turkish art using modern biotechnological methods and give it a contemporary form of expression. This new form of artistic expression can serve as an effective educational tool by broadening the popular perception of bacteria and highlighting their positive contributions to human society, the ecosystem, and the planet. In our study, traditional Turkish art techniques were adapted and microorganism suspensions were applied to an agar surface in various patterns. A biological interpretation of the Turkish pattern was obtained through pigment diffusion and microbial interactions. This process presented a hybrid art method that combines human-controlled drawing on one hand and the spontaneous growth of bacteria on the other. This approach generates both cultural innovation and scientific awareness.

Keywords: Bacterial art, Bioart, Traditional Turkish art, Microbiology

DIGITALIZATION OF DECISION-MAKING PROCESSES AND TOTAL FACTOR PRODUCTIVITY IN LARGE-SCALE ENTERPRISES: A COMPREHENSIVE REVIEW OF ORGANIZATIONAL AND TECHNOLOGICAL EVIDENCE

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ABSTRACT

In the era of digital transformation, the digitization of decision-making processes has emerged as a key lever for enhancing total factor productivity (TFP) in large-scale enterprises. This non-systematic review, drawing on existing organizational and technological evidence, examines the complex relationship between decision-making digitization and TFP. Advanced digital tools, such as artificial intelligence, big data analytics, cloud-based decision support systems, and the Internet of Things, shift decision-making processes from traditional and intuitive approaches toward data-driven, real-time, and predictive models. The findings indicate that these transformations significantly enhance TFP through mechanisms such as reduced operational and managerial costs, strengthened organizational innovation, improved resource allocation, and increased organizational agility. However, the positive effects in large enterprises are often accompanied by challenges, including high initial costs, organizational resistance, data security issues, and the need for technological absorptive capacity. This study emphasizes the importance of synergy between organizational changes and technology and recommends that managers of large enterprises focus on developing a data-driven culture, workforce training, and process redesign to achieve sustainable productivity. Ultimately, the results of this study provide pathways for industrial policymaking and future research in the domain of integrating digital technology into complex organizational structures.

Keywords: decision-making digitization, total factor productivity, large-scale enterprises, digital transformation, organizational innovation.

KARŞILIKLI DEĞİŞMELİ ÜÇ İNVOLUTİF BİR TRİPOTENT MATRİSİN LİNEER BİRLEŞİMİNİN TRİPOTENTLİĞİ

TRIPOTENCY OF LINEAR COMBINATIONS OF THREE INVOLUTORY AND ONE TRIPOTENT MATRIX THAT MUTUALLY COMMUTE

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Özet

$\mathbb{C}$ ve $\mathbb{C}_n$ sırasıyla kompleks sayılar ve $n \times n$ boyutlu kompleks matrisler kümesini ve I_n $n \times n$ boyutlu birim matrisi belirtsin. $A, B \in \mathbb{C}_n$ olmak üzere A ve B matrislerine eğer $AB = BA$ ise değişmeli, $A^2 = I_n$ ve $B^3 = B$ ise sırasıyla involutif ve tripotent matris denir.

$T_i \in \mathbb{C}_n$, $i = 1, 2, 3, 4$, matrisleri karşılıklı olarak değişmeli, $T_j \in \mathbb{C}_n$, $j = 1, 2, 3$, matrisleri involutif ve T_4 matrisi tripotent matris olsun. Bu çalışmada $T = c_1T_1 + c_2T_2 + c_3T_3 + c_4T_4$ lineer birleşimi ne zaman bir tripotent matris olur probleminin tam bir karakterizasyonu elde edilmiştir. Kullanılan yöntem katsayıları, eş zamanlı köşegenleştirilen $T_i \in \mathbb{C}_n$, $i = 1, 2, 3, 4$, matrislerinin köşegen elemanlarından seçilen tüm olası lineer denklem sistemlerinin çözümüne dayanmaktadır.

Anahtar Kelimeler: Involutif Matris, Tripotent Matris, Lineer Birleşim, Eş Zamanlı Köşegenleştirme

Abstract

Let $\mathbb{C}$ and $\mathbb{C}_n$ denote the set of complex numbers and the set of $n \times n$ complex matrices, respectively, and let I_n denote the $n \times n$ identity matrix. For $A, B \in \mathbb{C}_n$, the matrices A and B are called commutative if $AB = BA$; and they are called involutory and tripotent matrices if $A^2 = I_n$ and $B^3 = B$ respectively.

Let $T_i \in \mathbb{C}_n$, $i = 1, 2, 3, 4$, be mutually commutative matrices; let $T_j \in \mathbb{C}_n$, $j = 1, 2, 3$, be involutive matrices; and let T_4 be a tripotent matrix. In this study, a complete characterization has been obtained for the problem of when the linear combination $T = c_1T_1 + c_2T_2 + c_3T_3 + c_4T_4$ is a tripotent matrix. The method employed relies on the solution of all possible systems of linear equations whose coefficient are chosen from the diagonal elements of the simultaneously diagonalizable matrices $T_i \in \mathbb{C}_n$, $i = 1, 2, 3, 4$.

Key Words: Involutory Matrix, Tripotent Matrix, Linear Combination, Simultaneous Diagonalization

SIGNIFICANCE OF NONLINEAR THERMAL RADIATION AND ACTIVATION ENERGY ON FREE-CONVECTIVE MHD NANOFLUID FLOW OVER A STRETCHING DISK

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Abstract

Free-convective magnetohydrodynamic nanofluid flow over stretching surfaces plays a vital role in many modern engineering operations where enhanced heat and mass transfer is required. Typical applications include polymer sheet extrusion, thermal coating and drying, thin-film fabrication, solar energy collectors, cooling of rotating machinery, and catalytic chemical reactors using nanoparticle suspensions. This study therefore analyzes the combined effects of nonlinear thermal radiation and activation energy on free-convective MHD nanofluid flow over a stretching disk. The mathematical model accounts for Brownian motion, thermophoresis, buoyancy forces, and chemical reactions to provide a realistic description of high-temperature processes. Nonlinear Rosseland radiation is incorporated to represent strong radiative heat flux variations, while the Arrhenius activation energy term captures the energy threshold required for reactive nanofluid species. Similarity transformations reduce the governing equations to nonlinear ordinary differential equations, which are solved numerically. Results indicate that nonlinear radiation substantially elevates temperature distribution and thickens the thermal boundary layer, whereas activation energy enhances concentration gradients and improves nanoparticle stability by moderating reaction rates. The magnetic parameter suppresses radial velocity but strengthens thermal profiles through Lorentz-force heating. These findings offer useful guidance for optimizing thermal management and chemical processing in systems involving stretching surfaces and reactive nanofluids.

Keywords: Activation energy; Free convective flow; Stretching Disk; Nonlinear thermal radiation;

THE IMPACT OF AIR TRANSPORT, TOURISM, AND URBANIZATION ON ECONOMIC GROWTH: THE CASE OF TÜRKİYE

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ABSTRACT

With the process of globalization, the increase in international trade and human mobility has made the air transport sector a strategic component of economic development. Türkiye, acting as a significant tourism and logistics hub among emerging markets, constitutes a critical case study for examining the relationship between air transport and economic growth. The aim of this study is to test the validity of the "Air Transport-Led Economic Growth" hypothesis for the Turkish economy using annual data covering the period 1995-2024. The ARDL (Autoregressive Distributed Lag) bounds test approach was applied to detect short- and long-run relationships among the variables. The analysis findings reveal the existence of a long-run cointegration relationship between the series. According to the long-run coefficient estimates, air transport (PAX) has a positive and statistically significant effect on economic growth. Specifically, it was determined that a 1% increase in air passenger traffic leads to approximately a 0.15% increase in GDP. Similarly, urbanization and energy use variables were observed to positively support economic growth. On the other hand, the model results indicate that the tourism variable had a negative coefficient on growth during the relevant period. Consequently, the air transport-led growth hypothesis is supported in the case of Türkiye. In this context, it is important for policymakers to encourage airport infrastructure investments and provide incentives supporting the sector for sustainable economic growth.

Keywords: Air Transport, Economic Growth, ARDL Bounds Test, Türkiye Transport Economics.

**CLOSING THE LEARNING DISPARITIES BETWEEN INDIGENOUS PEOPLES:
INSIGHTS FROM NANIYARCHAR, CHITTAGONG HILL TRACTS,
BANGLADESH.**

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Abstract:

In Bangladesh, children generally begin primary education at the age of five; at the same time, the indigenous children in the Chittagong Hill Tracts (CHT) often start their schooling with an arduous journey. The young students need to walk far away across rough terrain to reach schools, which makes their daily attendance physically tiring and mentally discouraging. The geographical landscape makes such realities happen, which stand in sharp contrast with Articles 17 and 28 of the Bangladesh Constitution, which guarantee equal and compulsory education for all, as well as SDG 4, which calls for inclusive and quality education. The study seeks to discuss the various issues underlying lower-quality education among Indigenous students of Naniyarchar, a hilly and geographically remote area of the Rangamati District, where young learners have been subjected to such difficult experiences. The research established the availability of schools, but the problem with quality education in the area is the language barrier, poor infrastructure, and lack of trained teachers. Classrooms do not encourage mother tongue teaching, and Bengali-medium teaching limits the understanding as well as the interaction. In particular, Children experience the difficulty of adjusting to the new language, which is thrust upon them, and hence impede their learning process. An examination of 120 households sampled data on four unions in Naniyarchar Upazila indicated urgent demand for additional schools, mother-tongue curriculum, and culturally friendly pedagogy. These insights provide practical guidance to policymakers to build a sustainable education system, removing educational inequalities and creating a window to conduct more empirical research in marginalized communities in remote areas in Bangladesh.

Keywords: Primary education, Chittagong Hill Tracts, Indigenous students, SDG, Bangladesh Constitution, Quality Education, Language barriers

SEED-BASED STRATEGIES TO BOOST LEGUME GERMINATION AND GROWTH UNDER DROUGHT CONDITIONS

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Abstract

This study investigates the effects of water stress and seed pretreatment on germination and early growth of three legume species: *Lens culinaris*, *Cicer arietinum*, and *Vigna unguiculata*. Seeds were subjected to different priming treatments, including **hormonal priming with acetic acid** at 10 mM, 20 mM, and 50 mM, and **thermopriming at 5 °C for 4 hours**, alongside non-primed controls. Germination was performed in Petri dishes under increasing **PEG 6000 concentrations (5%, 10%, 15%, 20%)**, while controls were germinated in distilled water over seven days. Results indicate that water stress at 20% PEG substantially reduced germination rates and early growth metrics. Among the tested legumes, *Vigna unguiculata* showed the highest tolerance to water deficit, followed by *Cicer arietinum*. Seed priming significantly enhanced germination, seedling vigor, and growth parameters under both optimal and stress conditions. **Thermopriming and 10 mM acetic acid priming** were the most effective treatments for improving drought resilience and early seedling performance.

Keywords: *Lens culinaris*, *Vigna unguiculata*, *Cicer arietinum*, water stress, PEG 6000, acetic acid, thermopriming, seed priming

PRODUCTION AND CHARACTERIZATION OF CARBON NANOTUBES FROM BIOCHAR UNDER MICROWAVE IRRADIATION

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ABSTRACT

Carbon nanotubes (CNTs) are widely used in a variety of fields to produce a diversity of products, including hydrogen storage systems, and field emitters. In the proposed study, CNTs synthesized via biochar under the microwave irradiation method. In this method, the combination of charcoal and ferrocene are used to synthesize CNTs from the biochar approach. Biochar samples for CNTs synthesis are made from pyrolyzed agro-industrial waste such as rapeseed cake, hazelnut hulls, wheat straw, and oat hulls at different temperatures. The biochar was produced from agro-industrial biomass. During experiments, 100g of biomass was placed in a microwave reactor. The samples were pyrolyzed at 400 °C to 600°C. SEM analysis was used to confirm the morphology of CNTs. SEM micrographs revealed the perfect structure of multiwall carbon nanotubes, while interlayers spacing was changed due to variation of catalysts and measured about 0.34nm. Further, the optical properties were examined by UV-visible spectroscopy. In the UV, one band is clear at 240 nm region due to resonance of nanotubes $\pi(\pi)$ electrons of carbon nanotubes. XRD was used to analyze the glassy structure of prepared CNTs under microwave revealed that the creation and growth of CNTs were mostly influenced by microwave irradiation and the ferrocene catalyst. The structure of CNTs was developed under microwave heating and in the presence of ferrocene catalyst. To research how nitrogen impurities adhere to CNTs, FTIR experiments were conducted in the 400–4000 cm^{-1} range. The sample's FTIR spectra exhibit prominent peaks that correspond to C-H and C=C, respectively.

TROPICAL CYCLONE VULNERABILITY OF BHASANCHAR ISLAND, BANGLADESH

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ABSTRACT

Tropical cyclones (TCs) occur regularly in Bangladesh due to the country's geographical location and proximity to the Bay of Bengal (BoB). The resettlement of Rohingya refugees, as well as the state's vulnerability to cyclones, have recently drawn attention to Bhasan Char (BC). This study depicts the historical cyclone route before and after the development of BC, the return period, and the likelihood of tropical cyclones and storm surges occurring over this island. This study aims to suggest some mitigation measures to reduce the risk of infrastructure damage and to save the Rohingya community. Bangladesh Meteorological Department (BMD) data has been used to conduct this study, collected from the head office. To show the pathway of cyclone Arc GIS (version 10.8) and Microsoft Excel are used to determine the return period and probability of occurrences. Results of this study demonstrated that most cyclones are formed during pre- and post-monsoon and children and women are more vulnerable to TCs. Based on return period it is found that Category- 2 hurricanes are more frequent and come back almost every 3 to 4 years with about 3m surge height and Category- 3 hurricanes are less frequent and come back almost every 7 to 8 years with a surge height about 5-5.5m. The findings of the study will be helpful for the policymaker and the respective authorities to formulate a cyclone risk mitigation plan and cyclone preparedness program in Bhasan Char.

Key-words: Tropical cyclones, Development, Pathway, Demonstrated, Mitigation

QUANTIFYING SPATIAL DIFFERENTIATION OF SOCIOECONOMIC AND GOVERNANCE STRESSORS SHAPING RESIDENT CRIME PERCEPTION IN RAJSHAHI METROPOLITAN AREA, BANGLADESH

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Crime perception in urban settings arises not only from actual incidents but is strongly shaped by social, economic, and governance stressors that influence how residents experience safety in their surroundings. This study examines these social, economic, and governance stressors in the Rajshahi Metropolitan Area (RMA) using a purposive survey of 288 residents across twelve police jurisdictions. The sample reflects mostly middle-aged residents with low educational attainment, lower income levels, and balanced gender representation. While a strong majority (87.8%) feel safe during the day, one in five report reduced safety at night. Drug addiction, unemployment, poverty, and political influence are seen as the main contributors to crime, whereas police corruption and distance are regarded as minor factors. Perceptions of physical planning are mixed, with concerns about street lighting, neighborhood layout, and public space maintenance, despite favorable road accessibility and connectivity. Social cohesion is high, and private security, especially locked gates, is widely used and considered effective. Spatial results show that economic and governance stressors are highest in central areas like Boalia and Motihar, while peripheral areas demonstrate stronger safety and social support. In the RMA, social, economic, and governance stressors are interrelated ($r = 0.26-0.60$) and strongly reduce overall safety feeling (SF) (SF: $r = -0.41$ to -0.88), while safety factors like social cohesion, transport, and green-space safety positively correlate with SF ($r = 0.60-0.69$) but decline under stress. Overall, despite low direct victimization rates, perceived crime in RMA is strongly influenced by socio-economic challenges and dissatisfaction with governance. The findings underscore the need for integrated urban planning, improved service delivery, and community-based strategies to strengthen safety and public trust.

Keywords: Crime Perception; Social Stressors; Economic Stressors; Governance Stressors; Urban Safety.

PAPER TITLED PHISHING WEBSITE DETECTOR

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Abstract

The increasing sophistication and frequency of phishing attacks have become a major concern for individuals, organizations, and financial institutions worldwide. These attacks often deceive users into revealing sensitive information through fraudulent websites that mimic legitimate ones. To address this growing threat, this project, titled Phishing Website Detector, presents the design and implementation of a lightweight, rule-based web application developed using PHP and MySQL. The system automatically classifies websites as either legitimate or phishing by analyzing multiple URL based features such as protocol type (HTTP or HTTPS), domain length, sub domain structure, and the presence of suspicious keywords commonly associated with phishing attempts. Using a heuristic-based approach, the system allows users to input any website URL for analysis, after which it performs feature extraction, evaluates the site's legitimacy, and displays the classification result in real time. The project adopts the waterfall software development model, including phases of requirement analysis, system design, implementation, testing, and evaluation. Key modules implemented include the user interface, administrator login, dashboard, and database management system. Experimental testing was conducted using forty sample URLs twenty legitimate and twenty phishing and the system achieved 100% accuracy within this dataset. This result demonstrates that rule-based URL feature analysis remains a reliable and efficient preliminary method for detecting phishing websites, particularly in environments with limited computational resources or restricted access to advanced machine learning infrastructure. The study concludes that the proposed system provides an effective and practical baseline solution for enhancing online safety and cyber security awareness. However, future work should focus on incorporating adaptive machine learning algorithms, real-time browser extensions, and dynamic keyword updates to improve precision and adaptability against evolving phishing techniques.

Keywords: phishing detection, web security, PHP, MySQL, heuristic analysis, URL classification

EMERGENCY-RELATED DISRUPTIONS IN CHRONIC DISEASE CARE: INSIGHTS FROM RURAL ELDERLY PATIENTS IN ALBANIA

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Emergencies such as natural disasters, pandemics, and local crises pose serious challenges for healthcare systems, particularly affecting the management of chronic diseases in elderly populations living in rural areas. Gaining insight into these impacts and examining the role of home care from patients' perspectives is essential for improving health outcomes during such crises. This study aimed to explore these impacts and the utilization of home care services. A cross-sectional study was conducted at a rural healthcare center in the region of Vlore, Albania, from January to March 2025. A total of 120 elderly patients (≥ 65 years) with chronic conditions such as diabetes, hypertension, asthma, and COPD were purposively selected and included in the final analysis. Data were collected using a structured questionnaire addressing socio-demographic characteristics, the impact of emergencies, home care utilization, community support, and medication adherence. Values of $p < 0.05$ were considered statistically significant. Emergencies were found to significantly disrupt chronic disease management, largely due to limited healthcare access and infrastructure in rural areas. Chi-square analysis revealed significant relationships between economic resources and disease management ($\chi^2 = 22.07$, $p = 0.0048$), age and use of home care services ($\chi^2 = 26.14$, $p = 0.0020$), and living situation and community support ($\chi^2 = 18.53$, $p = 0.0320$). Patients relying solely on pensions or social aid experienced greater challenges in managing their conditions during crises. Those over 75 years used home care services more frequently, while individuals living alone received less community support. Female patients reported higher levels of community assistance than males. Overall, home care services were positively received, though issues such as service quality and response time were noted. The study revealed that managing chronic diseases in elderly rural populations is hampered by socio-economic and logistical barriers, particularly during emergencies. Recommendations include developing personalized emergency plans, training nursing staff for home-based care, expanding tele-monitoring, and ensuring consistent medication access.

Keywords: Emergencies, home care services, chronic diseases.

INCIDENCES OF *HELICOBACTER PYLORI* INFECTIONS IN SECONDARY SCHOOL STUDENTS ATTENDING SOME SELECTED HEALTH CARE FACILITIES IN ABUJA MUNICIPAL AREA COUNCIL, (AMAC) FEDERAL CAPITAL TERRITORY, ABUJA

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ABSTRACT

A study was carried out on Incidences of *Helicobacter Pylori* Infections In Secondary School Students Attending Some Selected Health Care Facilities in Abuja Municipal Area Council, (AMAC) Federal Capital Territory, Abuja. The result revealed that, gender distribution was equal (50% male and 50% female). The highest proportion of participants were in the 13–15 years age group (40.0%), followed by 16–19 years (36.7%). The overall prevalence of *H. pylori* infection based on the Stool Antigen Test (SAT) was 35%, making it the most reliable method for active infections. The Urea Breath Test (UBT) showed a 31.7% prevalence, slightly lower but consistent with active infections. The Serological Test (IgG) had a higher positivity rate (40%), which may include past infections, as IgG antibodies persist after infection resolution. A significant association was observed between *H. pylori* infection and recurrent abdominal pain ($p < 0.001$), as 80.9% of infected students reported this symptom. Nausea/vomiting (57.1%) and bloating (52.4%) were also significantly associated with infection. Poor hand hygiene (71.4%) and consumption of street food (76.2%) were strongly associated with *H. pylori* infection ($p < 0.001$). Drinking untreated water (66.7%) also showed a significant correlation. These findings highlight the importance of hygiene and food safety measures in reducing infection rates. Low-income students (61.9%) had the highest infection rate, indicating a link between economic conditions and *H. pylori* infection. High-income students (4.8%) had the lowest infection rates, suggesting better access to sanitation and medical care. Consumption of street food (OR = 4.2, $p < 0.001$) was the strongest predictor of *H. pylori* infection. Poor hand hygiene (OR = 3.8, $p < 0.001$) and untreated drinking water (OR = 3.1, $p < 0.001$) were also significant risk factors. Therefore, Schools should incorporate health and hygiene education into their curriculum to teach students about the importance of handwashing, proper sanitation, and safe food handling.

Keywords: *Helicobacter pylori*, infection, secondary school students, incidence, risk factors, gastrointestinal health, Nigeria

**AUTİM İLE İKİNCİ DİL OLARAK ARAPÇA ÖĞRETİMİNDE TEKNOLOJİ
ENTEGRASYONU: ÇOKLU DİJİTAL ARAÇLARA DAYALI DERS SENARYOSU
TASARIMLARI**

TECHNOLOGY INTEGRATION IN TEACHING ARABIC AS A SECOND LANGUAGE
WITH THE AUTİM MODEL: SCENARIO DESIGNS BASED ON MULTIPLE DIGITAL
TOOLS

Gülsüm MEÇO

Dr, İstanbul 29 Mayıs Üniversitesi Eğitim Fakültesi, Arapça Öğretmenliği Bölümü

ÖZET

Bu çalışma, Arapça Öğretmenliği lisans programında öğrenim gören öğretmen adaylarının dijital teknolojileri ders tasarımına nasıl entegre ettiklerini incelemek amacıyla yürütülmüştür. Araştırmada AUTİM (Adaptive Unit-Based Technology Integration Model) modeli çerçevesi kullanılmış; öğretmen adaylarının geliştirdikleri ders senaryoları ile süreç deneyimlerine ilişkin görüşleri nitel bir yaklaşımla analiz edilmiştir. Veri kaynaklarını, dönem boyunca hazırlanan senaryo geliştirme şablonları ile Google Forms aracılığıyla toplanan açık uçlu görüşler oluşturmuştur. Doküman incelemesi ve içerik analizi sonuçlarına göre öğretmen adayları artırılmış gerçeklik, yapay zekâ araçları, etkileşimli tasarım platformları, animasyon uygulamaları ve web tabanlı yazma ortamları gibi çok çeşitli dijital araçları Arapça öğretiminde bilinçli pedagojik amaçlarla kullanmıştır. Senaryolarda özellikle kelime–görsel eşleştirme, kısa cümle kurma, yön tarif etme, günlük rutinleri ifade etme ve görsel destekli öğrenme gibi temel düzey dil hedeflerinin ön plana çıktığı görülmüştür. Öğretmen adaylarının görüşleri, teknolojinin derse somutlaştırma, motivasyon artırma, kalıcılık sağlama ve aktif katılımı güçlendirme açısından önemli katkılar sunduğunu göstermektedir. Bununla birlikte teknik bilgi eksikliği, içerik üretme güçlükleri ve sınırlı zaman gibi faktörler teknoloji entegrasyonunda karşılaşılan temel zorluklar olarak belirlenmiştir. Bulgular genel olarak AUTİM modelinin öğretmen adaylarının teknoloji–kazanım–içerik uyumunu kurmalarına yardımcı olduğunu, çoklu dijital araç kullanımının ise Arapça öğretimini daha etkileşimli ve öğrenci merkezli hâle getirdiğini ortaya koymaktadır. Çalışma, ikinci dil olarak Arapça öğretiminde çoklu dijital araç entegrasyonunu senaryo temelli olarak ele alan özgün bir katkı sunmaktadır.

Anahtar Kelimeler: AUTİM Modeli, Arapça Öğretimi, İkinci Dil Olarak Arapça, Teknoloji Entegrasyonu, Dijital Öğretim Araçları.

ABSTRACT

This study investigates how pre-service teachers in an Arabic Language Teaching undergraduate program integrate digital technologies into lesson design within the framework of the AUTIM (Adaptive Unit-Based Technology Integration Model). The research employed a qualitative approach, drawing on two data sources: scenario development templates created throughout the semester and open-ended responses collected via Google Forms. Document analysis and content analysis revealed that pre-service teachers used a wide range of digital tools—including augmented reality applications, artificial intelligence tools, interactive design platforms, animation software, and web-based writing environments—to support Arabic language instruction at the K–12 level. The scenario analyses showed that digital tools were pedagogically aligned with specific learning outcomes and were primarily used for vocabulary–visual matching, short sentence production, giving simple directions, expressing daily routines, and supporting visual learning. Student reflections indicated that technology contributed to concretization, motivation, retention, and active participation, while challenges centered on limited technical skills, difficulties in content creation, and time constraints. Overall, the findings demonstrate that the AUTIM model effectively guided pre-service teachers in establishing alignment between learning outcomes, instructional content, and technological tools. Moreover, the use of multiple digital tools enriched Arabic language teaching by making instructional processes more interactive and student-centered. This study provides an original contribution by examining scenario-based, multi-tool technology integration in teaching Arabic as a second language.

Keywords: AUTIM Model, Arabic as a Second Language, Technology Integration, Digital Learning Tools.

PRELIMINARY COMPUTATIONAL ANALYSIS OF IAP GENE INHIBITORS AND ssDNA DESIGN FOR DNai-BASED CONTROL OF *L. dispar* and *D. melanogaster*

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Abstract

In Nigeria today, insect pests remain a significant challenge to crops and crop production, resulting in severe losses and exacerbating food insecurity in mostly rural areas, where safe and environmentally friendly control measures have not been clearly identified and engaged; however, several types of insecticides are deployed without considering the health and environmental safety. Hence, in this study, we identified, retrieved, and analyzed some Inhibitor of Apoptosis Protein (IAP) gene sequences for *Lymantria dispar* multiple nucleopolyhedrovirus (LdMNPV) and *Drosophila melanogaster* to explore their potential as targets for the design of unmodified DNA fragments as Bio-inspired insecticides that mimic DNA interference. Sequences from NCBI databases, IAP-2 and IAP-3, were obtained for LdMNPV, while DIAP-1 and DIAP-2 were retrieved for *D. melanogaster*. Our result on analysis of multiple sequence alignments (MSA) revealed significant similarities within species, where LdMNPV IAP-2 and IAP-3 shared 66.4% alignment, and DIAP-1 and DIAP-2 showed 50.41% alignment. Also, results from BLAST analysis confirmed 100% query coverage, 100% identity, and E-values of 0.0 to conserved regions of the target pests, indicating strong homology and high confidence in sequence alignment. Short single-stranded antisense DNA fragments (18 – 20 nucleotides) were designed from conserved and accessible mRNA regions of these genes, with melting temperatures ranging from 46 - 60 °C and GC content between 35 - 55%, and in silico BLAST checks for the Bio-inspired insecticide candidates revealed no significant off-target effects, supporting specificity for the intended insect gene targets.

Keywords: Bio-inspired insecticides, IAP genes, ssDNA

TWO STAGE TRANSESTERIFICATION REACTION TOWARDS THE PRODUCTION OF BIOLUBRICANT FROM WASTE COOKING OIL

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ABSTRACT

In this study, iron oxide are extracted from locally available iron sand in the form of hematite (Fe_2O_3) and used as catalyst for biolubricant synthesis through the transesterification of waste cooking oil (WCO) and trimethylolpropane (TMP). Co-precipitation method was employed using Hydrochloric Acid (HCl) and Sodium hydroxide (NaOH). The characterization methods for the extracted iron oxide catalyst were X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), X-Ray Fluorescence (XRF). The XRF result shows that the Fe_2O_3 is the major constituent having 48.280% composition followed by SiO_2 (1.089 %) and CeO_2 with (5.49%). According to the XRD analysis conducted, 60.43% of the sample appeared as hematite, 25.45% quartz and 14.12% as orthoclase. The reaction conditions were optimized using a statistical experimental design method (Taguchi L9 orthogonal array) with variables including temperature, WCOME/TMP ratio, catalyst concentration, and reaction time. The optimized conditions (120 °C, 0.5.0% catalyst, 3:1 WCOME/TMP ratio, and 4h reaction time resulted in an 88% conversion yield), the biolubricant produced were characterized using FTIR and GC-MS. The physicochemical properties of the final product were evaluated and were comparable with those of the ISO VG-10 and 32 grade lubricant standard.

Keywords: Waste cooking oil, Hematite, Co-precipitation, Biolubricant, Taguchi

REMOVAL OF ACID BLUE 113 TEXTILE DYE FROM SYNTHETIC AQUEOUS SOLUTION BY ADSORPTION AND FLOCCULATION PROCESS USING CATIONIC COPOLYMER

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Abstract

In this work, the retention of the acid blue113 (AB113) textile dye from synthetic dye solution by using cationic poly(n-hexadecyl-4 vinylpyridinium bromide) [P4VP-C16Br] was reported. The removal of anionic dye was ascribed to two different processes. First, the batch adsorption experiments performed to investigate the effect of experimental parameters on the AB113 adsorption equilibrium. Then, the adsorption characteristics of copolymer and acid blue 113 in dilute aqueous solution were studied by UV-Vis spectrophotometry.

Indeed, the adsorption equilibrium was reached within 3 h of poly(4-vinylpyridine) quaternized at 50% and the adsorption kinetics was best described by a pseudo-second-order model. Furthermore, the equilibrium modelling of AB113 removal process was described by Langmuir isotherms. On the other hand, the second method was based on the flocculation process where the [P4VP-C16Br] as a flocculant in its soluble form in acidic medium was used. Different parameters affecting the retention were studied as variable including pH of AB113; [P4VP-C16Br] dose, AB113 concentration, and contact time between the copolymer and the used dye. At the optimal dose of [P4VP-C16Br] flocculant, the removal ratio of acid blue 113 could reach more than 98% in the pH range of 2-8. Furthermore, the flocculation process using [P4VP-C16Br] was a very fast process.

Keywords: Removal, Acid blue 113, Adsorption, Flocculation, Isotherm, Kinetic

**THE PRACTICE OF CONTINUOUS PROFESSIONAL DEVELOPMENT FOR
TEACHERS' INSTRUCTIONAL QUALITY IN ETHIOPIA SECONDARY SCHOOLS
FOCUSED IN OROMIA REGION WOLISO TOWN**

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This study aimed to assess the current practice of continuous professional development for teachers' instructional quality in Woliso Town secondary schools. A mixed-methods research design was employed for this study. The sample consisted of 175 secondary school teachers (147 males and 28 females) who were selected purposively for quantitative data collection. In addition, the school principal and academic vice-principals were chosen for qualitative data collection interviews. Data were collected from 145 secondary school teachers who taught subjects assessed by educational examination services for university entrance. Six one-on-one interviews were conducted with secondary school principals and academic vice-principals. Quantitative data were analyzed using SPSS version 25 and presented through descriptive statistics such as mean, standard deviation, and percentage. Qualitative data were analyzed thematically and presented in narrative form to support the quantitative findings. The study findings revealed that the traditional model of teachers' professional development is both superficial and fragmented. Additionally, many teachers are not actively engaged in continuous professional development activities due to various factors, including life pressure, lack of motivation, insufficient recognition, and the absence of systematic evaluation of teachers' progress in instructional quality. Based on these findings, it is recommended that the government, education policymakers, and academicians reform the approach to continuous professional development by incorporating alternative methods for teachers' professional development. Moreover, education stakeholders at all levels should create and endorse updated continuous professional development manuals to ensure consistency across schools.

Keywords: Continuous professional development, Instructional quality, Teachers, Secondary school

**AYDIN İLİNDE PAMUK YETİŞTİRİLEN BAZI ALANLARDA ARAZİ
DEĞERLENDİRME ÇALIŞMALARINDA İKLİM DEĞİŞİMİNİN ETKİSİ**
THE IMPACT OF CLIMATE CHANGE ON LAND EVALUATION STUDIES IN SOME
COTTON-GROWING AREAS IN AYDIN PROVINCE

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ÖZET

Tarım topraklarının karakteristik özelliklerine uygun kullanımı, doğal kaynakların korunması ve sürdürülebilirliği açısından büyük önem taşımaktadır. Bu çerçevede, arazi değerlendirme çalışmaları, özellikle iklim değişikliği ve kuraklık gibi güncel çevresel sorunlar doğrultusunda daha ayrıntılı ve kapsamlı analizler gerektirmektedir. Bu çalışma, Aydın İli Koçarlı İlçesi Menderes Ovası'ndaki pamuk tarımı yapılan alüvyal araziler üzerinde tam ve kısıntılı sulama uygulamalarının toprak özelliklerine etkisinin karşılaştırılabilmesi amacıyla yürütülmüştür. Arazi değerlendirme sürecinde, toprakların bazı fiziksel ve kimyasal özelliklerini saptamak amacıyla araştırma alanında belirlenen pamuk tarlalarından 0–30 ve 30–60 cm derinliklerden toprak örnekleri alınmıştır. Ayrıca, bu çalışma alanlarında toprak morfolojik özellikleri için de gözlemler gerçekleştirilmiştir. Alınan toprak örneklerinin tekstür analizleri hidrometre yöntemiyle, pH değerleri 1:2,5 toprak-su oranında pH metreyle, kireç miktarı Scheibler kalsimetresiyle, elektriksel iletkenlik ise satürasyon çamurunda kondüktivimetreyle belirlenmiştir. Elde edilen sonuçlara göre; kısıntılı sulama yapılan arazilerden alınan toprak örneklerinin büyük çoğunluğunun alkali, kireçli ve tuzsuz olduğu gözlemlenirken, benzer şekilde tam sulama yapılan arazilerden alınan toprak örneklerinin de büyük çoğunluğunun alkali, çok kireçli ve tuzsuz özellikte olduğu belirlenmiştir. Çalışma kapsamında son beş yıla ait iklim verileri kullanılarak tarımsal kuraklık şiddeti Aydeniz İklim Sınıflandırma yöntemi kullanılarak hesaplanacaktır. Son kısımda ise, ilgili formüller ve İLSEN programı aracılığıyla her bir örnekleme noktasında pamuk bitkisinin uygunluğu, bölgenin kuraklık durumu, sulama koşulları ve verim kriterleri karşılaştırılacaktır. Tespit edilecek sonuçlar ile oransal beklenen ürün değerlerinin daha gerçekçi şekilde belirlenmesi amaçlanmaktadır.

Anahtar Kelimeler: Arazi değerlendirme, iklim değişikliği, kuraklık, pamuk, tarımsal uygunluk

ABSTRACT

The appropriate use of agricultural land in accordance with its characteristic properties is of great importance in terms of the conservation and sustainability of natural resources. In this context, land evaluation studies require more detailed and comprehensive analyses, particularly in light of current environmental issues such as climate change and drought. This study was conducted to compare the effects of full and deficit irrigation practices on soil properties in alluvial lands used for cotton cultivation in the Menderes Plain of Koçarlı District of Aydın Province. During the land evaluation process, soil samples were taken from depths of 0–30 and 30–60 cm from cotton fields identified in the research area in order to determine the some physically and chemical properties of the soil. In addition, observations were made on the morphological properties of the soil in these study areas. Texture analyses of the soil samples were performed using the hydrometer method, pH values were determined using a pH meter at a soil-water ratio of 1:2.5, lime content was determined using a Scheibler calcimeter, and electrical conductivity was determined using a conductivity meter in saturated mud. According to the results obtained, it was observed that the vast majority of soil samples taken from fields under deficit irrigation were alkaline, calcareous, and salt-free, while similarly, it was determined that the vast majority of soil samples taken from fields under full irrigation were also alkaline, highly calcareous, and salt-free. Within the scope of the study, the severity of agricultural drought will be calculated using climate data from the last five years, using the Aydeniz Climate Classification method. In the final section, the suitability of cotton cultivation at each sampling point, the drought status of the region, irrigation conditions, and yield criteria will be compared using the relevant formulas and the ILSSEN program. The aim is to determine the proportional expected crop values more realistically based on the results obtained.

Keywords: Agricultural suitability, climate change, cotton, drought, land evaluation

GERMINATION RESPONSE OF LOCAL ALGERIAN LEGUMES TO DROUGHT STRESS

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Abstract

Water deficit has emerged as one of the most critical challenges affecting agricultural production, motivating researchers to explore plant adaptive strategies and identify drought-resilient genetic resources. In this context, the present study examines how osmotic stress—artificially induced with polyethylene glycol (PEG 6000)—affects the germination behavior of selected legume species commonly grown in Algeria. Given the prevalence of arid and semi-arid conditions in the region, assessing the early-stage response of local legume ecotypes to water shortage is fundamental for improving crop sustainability.

Four legume species—4X4 Bean, Chickpea, Sidi Aich Faba Bean, and Kalvedon Wonder Pea—were exposed to increasing PEG 6000 concentrations (0%, 5%, 10%, 15%, and 20%) under controlled laboratory settings. Seeds were allowed to germinate in Petri dishes for seven days, during which key germination indicators such as final germination percentage, mean germination time, germination pattern, and seedling vigor were monitored and analyzed.

The experiment revealed clear interspecific differences in drought response, with Sidi Aich Faba Bean and 4X4 Bean expressing stronger tolerance to PEG-imposed osmotic stress. In contrast, Chickpea and Pea exhibited lower germination performance as stress intensity increased. These findings underline the importance of certain local genotypes as promising candidates for breeding programs targeting enhanced drought resilience in Algerian cropping systems.

In conclusion, this work strengthens current knowledge on legume germination under simulated water-deficit conditions and validates PEG 6000 as a reliable agent for screening drought-tolerant germplasm. The results may support the development of more resilient legume varieties and guide better management strategies for agriculture in water-limited regions.

Keywords: osmotic stress, PEG 6000, legume germplasm, germination traits, drought resilience, Algeria

ROMANIA'S POSITION IN THE DEMO-ECONOMIC RANKING OF A GROUP OF EU MEMBER STATES. A COMPARATIVE ANALYSIS

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The article analyzes Romania's position in the demo-economic ranking of a group of EU member states, using Eurostat data for 2022 and a set of relevant indicators for assessing demographic and economic balances. Based on the standardized values, a total score was calculated for each country, allowing the ranking of states according to the contribution of their demo-economic indicators. The results highlight a clear contrast between Western and Southern European countries, which record positive values reflecting high levels of development and demographic balance, and Central and Eastern European countries, characterized by negative or relatively low values associated with evident economic and demographic challenges. Romania registers one of the lowest scores due to its low average wage, significant migration, and increased labor costs relative to productivity. The analysis reveals significant inequalities among the states examined and a clear grouping trend between more developed and less developed countries, thus confirming the demo-economic disparities within the European Union and Romania's unfavorable position in this context.

Keywords: demo-economic, EU member states, disparities

TEENAGE PREGNANCY IN RURAL BANGLADESH: A QUALITATIVE STUDY ON ITS ROOT CAUSES AND IMPACTS

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Abstract

Teenage pregnancy is a great concern all over the world including Bangladesh. Bangladeshi rural teenage mothers face many vulnerabilities due to early marriage. Teenage pregnancy affects the physical health of teenage pregnant mothers and their children. While most of the studies have explored teenage pregnancy, very few studies focus on the root causes and its impacts on rural teenage pregnant mothers and their children. This study aims to identify the root causes and examine the impacts of teenage pregnancy in rural areas of Bangladesh using qualitative methods (e.g. IDIs, KIIs, FGDs). An open-ended checklist was formed to collect qualitative data from the respondents who conceived baby between 13 to 19 years. In this study, 63 respondents had been taken from four villages under two districts (Gopalganj and Madaripur) as case. This study found that the main causes of teenage pregnancy are poverty, early marriage, lack of reproductive health education and social awareness, peer pressure, sexual violence, fear of social disgrace among teenage girls in rural areas of Bangladesh. Therefore, majority of the teenage mothers face many problems such as health complications, dropped out school, maternal mortality risk, negative impact on mental health and their children also suffers from malnutrition as well as face impediments to physical and mental growth. Even, it has negative impact on society. This study will help the GOs, NGOs and CBOs to take some proper steps to prevent early marriage, make people aware, make strong policy, increase the activities of existing laws, improve knowledge about reproductive health education through campaigns.

Keywords: Teenage pregnancy, Health risk, Poverty, Rural Bangladesh.

BIOPLASTIC PRODUCTION FROM ACID WHEY: A SUSTAINABLE APPROACH FOR THE DAIRY SECTOR

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ABSTRACT

Across the dairy-processing chain, large quantities of acid whey are systematically generated during the manufacture of fermented products and cheeses. In Morocco, this by-product accumulates in significant volumes, yet it remains only marginally exploited despite its richness in fermentable sugars, particularly lactose. The disposal of acid whey poses substantial pressure on wastewater treatment systems because of its naturally acidic pH and exceptionally high organic load. These characteristics make it both an environmental concern and an underutilized bioresource with strong industrial potential.

This research explores the conversion of lactose contained in acid whey into bioplastics, positioning this effluent as a renewable substrate for microbial synthesis of biodegradable polymers. The project investigates the production of polyhydroxyalkanoates (PHAs) through fermentation pathways optimized for dairy-origin carbon sources. Particular emphasis is placed on the selection of efficient microbial strains, improvement of fermentation yields, and refinement of downstream recovery techniques to obtain biopolymers with suitable physicochemical properties.

Beyond the technological aspects, the study assesses the feasibility of integrating such valorization processes into Moroccan dairy operations, especially medium-sized facilities where acid-whey management remains a major challenge. The approach seeks to establish a sustainable model that turns an environmental liability into a high-value bioproduct, contributing to circular bioeconomy development and reducing the ecological impact of the dairy sector.

Keywords: Acid whey, Lactose, Bioplastics, Fermentation, Circular economy, Dairy valorization.

TOWARDS CIRCULAR MANAGEMENT OF INDUSTRIAL SALINE EFFLUENTS: VALORIZATION OF SODIUM FROM NaOH AND NaCl SOURCES

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ABSTRACT

Large quantities of saline effluents are generated in many industrial operations, particularly during caustic-cleaning processes using sodium hydroxide (NaOH) and during water-softening cycles based on sodium chloride (NaCl). In Morocco, these sodium-rich waste streams remain insufficiently valorized despite their high chemical content and their potential relevance within sustainable resource-recovery strategies. Their discharge places considerable pressure on wastewater treatment systems due to elevated salinity, the high alkalinity of NaOH-derived streams, and the cumulative environmental impact on aquatic ecosystems. Thus, these effluents represent both an environmental burden and an underexploited industrial resource.

This research investigates innovative pathways for recovering and transforming sodium contained in these effluents into value-added products, in line with circular-economy principles. Several approaches are explored, including: (i) selective separation and purification of sodium ions, (ii) electrochemical processes for NaOH regeneration, and (iii) the formation of market-relevant sodium-based compounds such as sodium carbonate and sodium bicarbonate. The study emphasizes process optimization, reduction of energy consumption, and the suitability of these technologies for industries generating continuous saline discharges.

In addition to technical aspects, the feasibility of integrating sodium-recovery systems into Moroccan industrial sectors, particularly medium-sized agri-food and water-treatment facilities, is assessed. The objective is to shift from a conventional linear disposal model to a closed-loop approach in which sodium is recovered, reused, or converted into valuable chemical inputs. By turning a costly polluting stream into a strategic resource, this work contributes to environmental protection, industrial cost reduction, and the development of sustainable industrial symbiosis.

Keywords: Sodium recovery, NaOH effluents, Water softening, NaCl regeneration, Circular economy.

**FUNCTIONAL FOODS IN THE CIRCULAR ECONOMY: SUSTAINABLE
PRODUCTION WITHOUT SYNTHETIC ADDITIVES**

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Abstract

In recent years, there has been a significant increase in consumer awareness regarding health, nutrition, and environmental sustainability, which has driven growing interest in functional foods. Functional foods are products that provide health benefits beyond basic nutrition, playing an essential role in disease prevention and health promotion. Concurrently, the concept of the circular economy has gained prominence as a sustainable model that emphasizes resource efficiency, waste reduction, and the reuse of materials throughout production cycles. This paper investigates the intersection of functional foods and circular economy principles, focusing particularly on the development and production of functional foods without synthetic additives. Synthetic additives, often used to enhance flavor, appearance, or shelf life, have raised concerns related to potential health risks and environmental impact. Therefore, there is a pressing need to explore natural alternatives and innovative processing techniques that maintain food safety and quality while eliminating harmful additives. This study highlights natural sources of bioactive compounds, such as plant-based ingredients, fermented products, and by-products from agro-industrial waste streams, which can be valorized in a circular economy framework. Additionally, it examines emerging technologies for preservation, packaging, and sustainable sourcing that support additive-free functional food production. Through an analysis of current research and industry practices, this paper underscores the potential for creating sustainable, health-promoting functional foods that align with consumer demand for clean-label and eco-friendly products. The findings emphasize the critical role of integrating circular economy strategies and natural ingredients to advance the development of safe, effective, and environmentally responsible functional foods that contribute to a healthier society and planet.

Keywords: Functional foods, Circular economy, Natural additives, Sustainable production, Food safety.

MICROPLASTICS AND HEAVY METALS TOXICITY IN PLANTS: AN OVERVIEW

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Abstract

Microplastics and nanoplastics represent an emerging class of environmental contaminants, posing significant threats to terrestrial ecosystems and, consequently, to global food security. Their ubiquitous presence in agricultural soils, often exacerbated by the co-occurrence of heavy metal pollutants, necessitates a thorough understanding of their combined toxicological impacts on flora. This is particularly critical given the persistent nature of both microplastics and heavy metals, which can lead to their accumulation in agricultural produce and subsequent transfer through the food chain, impacting human health. The combined pollution of microplastics and heavy metals is a growing concern, impacting plant toxicology and heavy metal accumulation, which are directly linked to crop yields and population health. The introduction of microplastics into agricultural soil can profoundly alter its physicochemical properties, subsequently impeding plant development and overall ecosystem health. Specifically, larger microplastic particles have been observed to adhere to root surfaces, disrupting stomatal function and restricting the uptake of essential nutrients. Furthermore, microplastics can increase the absorption of heavy metals, such as cadmium, into plant tissues, thereby impairing nutrient uptake and overall plant growth. This synergistic effect often diminishes the activity of antioxidant enzymes that typically counteract heavy metal stress, exacerbating cellular damage and physiological dysfunction within the plant. However, some studies indicate that microplastic presence may not always negatively affect seed germination rates in certain crops, even in the presence of heavy metals like cadmium. However, the precise mechanisms underlying microplastic-induced oxidative stress remain largely unknown, although research has linked increased reactive oxygen species to surface injuries, chemical leaching, and disruptions in photosynthesis. Heavy metals themselves are known to increase reactive oxygen species and impair chlorophyll content, thereby detrimentally affecting photosynthesis and antioxidant systems, ultimately leading to alterations in plant anatomy and morphology. This intricate interplay underscores the urgent need for comprehensive research to elucidate the dose-dependent and material-specific impacts of microplastics, both independently and in conjunction with heavy metals, on diverse plant species and agricultural productivity. This complex interaction mandates an in-depth investigation into the long-term ecological consequences, particularly concerning heavy metal bioavailability and phytoremediation potential in contaminated environments. Moreover, the co-contamination of microplastics and heavy metals has been shown to reduce germination rates, germination energy, and germination index in crops, alongside inhibiting root and shoot growth. This complex interaction is particularly evident in wheat, where the co-existence of cadmium and polypropylene microplastics significantly impacts various seedling vigor indices and antioxidant enzyme activities. Interestingly, while cadmium alone can severely inhibit plant growth, its co-existence with certain microplastics, like micron-sized PVC, has been observed to reduce this inhibitory effect on algal cell growth, suggesting complex antagonistic interactions.

DEEP LEARNING APPROACH FOR MONITORING BLUE FRONTIER MANGROVE FORESTS ACROSS AUSTRALIA USING SENTINEL-2 IMAGERY

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ABSTRACT

Mangrove forests form a vital component of Australia's Blue Frontier ecosystem, providing crucial blue carbon storage and coastal protection. Accurate, high-resolution mapping is essential for monitoring climate-driven changes. This study presents a deep learning framework that integrates Sentinel-2 multispectral imagery with a tide-harmonized analysis to improve mangrove forest classification accuracy across Australia's intertidal zones. The framework employs a U-Net-based semantic segmentation model trained on pseudo-ground truth (P-GT) labels generated directly from high-confidence spatial and spectral features. This novel approach overcomes the limitation of external ground data by leveraging high-temporal satellite data for P-GT creation and internal cross-validation. Additional predictors derived from vegetation indices and texture metrics are incorporated to enhance spectral separability. Results demonstrate improved spatial accuracy and edge preservation compared with traditional single-season baselines, delivering a reproducible, cloud-native workflow for national mangrove monitoring that supports climate adaptation and conservation across Australia's Blue Frontier. This study provides a scalable, AI-driven approach for national mangrove monitoring and supports climate adaptation and nature-based solutions along Australia's Blue Frontier.

Keywords: Deep Learning, Mangrove Forests, Tide-Harmonized Analysis, Sentinel-2, Blue Carbon, Pseudo-Ground Truth

ACADEMIC BURNOUT AMONG NURSING STUDENTS IN MOROCCO: PREVALENCE AND KEY PREDICTORS

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Academic burnout is a critical mental health issue among nursing students, who face intense academic and clinical demands. This study examines the prevalence of burnout and its psychological determinants among students enrolled in Higher Institutes of Nursing and Health Techniques (ISPITS) in the Rabat-Kénitra region in Morocco.

A cross-sectional descriptive and analytical survey was conducted with 249 students (mean age: 22.5 years) from various health disciplines. Burnout was assessed using the Maslach Burnout Inventory (MBI), which measures emotional exhaustion, depersonalization, and personal accomplishment. Stress levels were evaluated using the Perceived Stress Scale (PSS). Both instruments demonstrated good reliability (MBI $\alpha = 0.76\text{--}0.89$; PSS $\alpha = 0.75$).

Results revealed high psychological distress: 43% of students showed pathological emotional exhaustion, 40% exhibited elevated depersonalization, and 44% reported high stress levels. Correlation analysis indicated significant links between emotional exhaustion and stress ($r = 0.204$), and between exhaustion and depersonalization ($r = 0.728$). Personal accomplishment was negatively correlated with exhaustion ($r = -0.473$) and stress ($r = -0.158$). Regression models identified sleep disorders and lack of physical activity as major predictors of emotional exhaustion and depersonalization, while good sleep and regular exercise were associated with higher accomplishment.

These findings highlight the urgent need for targeted interventions in nursing education, including stress management programs, sleep hygiene promotion, physical activity initiatives, and psychological support services. Such measures can foster resilience and reduce burnout risk, ultimately improving the quality of nursing training.

Keywords: academic burnout, nursing students, perceived stress, sleep quality, physical activity.

**GENDER-INCLUSIVE WORKPLACES AND THEIR EFFECT ON PRODUCTIVITY:
A REVIEW-BASED ANALYSIS**

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Abstract

This review paper examines the relationship between gender diversity and workplace productivity, drawing on findings from recent academic literature, organizational case studies, and global diversity reports. The growing emphasis on inclusive human resource management practices has brought gender diversity to the forefront as a strategic driver of organizational performance. This review synthesizes existing research to evaluate how diverse teams contribute to improved decision-making, creativity, and problem-solving—factors that collectively enhance overall productivity. The analysis reveals that gender-diverse workplaces benefit from broader perspectives, stronger collaboration, and a more balanced distribution of interpersonal and analytical skills. Additionally, organizations that promote gender inclusion tend to experience higher employee satisfaction, reduced turnover intentions, and improved employer reputation, all of which indirectly contribute to productivity gains. However, the review also highlights challenges such as unconscious bias, gender stereotypes, and unequal career advancement opportunities, which can limit the potential benefits of diversity if left unaddressed. Studies consistently indicate that supportive leadership, equitable HR policies, and inclusive workplace cultures are essential to translating gender diversity into measurable productivity outcomes. The paper concludes by identifying research gaps related to sector-specific effects, cultural differences, and the role of inclusive leadership in maximizing the advantages of gender diversity, suggesting avenues for future empirical exploration.

Keywords: gender diversity, workplace productivity, inclusion, HRM, organizational performance, diversity management

THE ROLE OF WOMEN IN DEVELOPING AND IMPLEMENTING CLIMATE CHANGE ADAPTATION TECHNOLOGIES: A MULTI-LEVEL ANALYSIS

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Abstract

Climate change, as one of the most complex global crises, necessitates the development of comprehensive technological solutions. Although women are disproportionately affected by the impacts of climate change, their pivotal role in developing and deploying adaptation technologies is often overlooked in mainstream discourse and policy-making. This study employs an eco-feminist theoretical framework and qualitative methodology to examine the multi-level role of women in the ecosystem of climate change adaptation technologies. Data were collected through semi-structured interviews with 45 female actors and field studies across six geographical regions. The findings reveal that women operate at three distinct levels: as innovators of indigenous technologies at the micro-level, as facilitators of social acceptance at the meso-level, and as policy makers in climate innovation at the macro-level. This research demonstrates that structured participation of women not only enhances the efficiency of adaptation technologies but also, through the integration of indigenous knowledge with modern technologies, ensures long-term sustainability and social resilience. Women are on the front lines of the impacts of climate change for social, economic, and biological reasons. In many societies, they bear the primary responsibility for securing food, water, and energy for their households. This profound dependence on natural resources renders them highly vulnerable to natural disasters and climatic shifts. However, this vulnerability is, in fact, a source of strength and a reservoir for solutions. Owing to their deep, indigenous knowledge of the local environment, women play a critical role in the development, adaptation, and implementation of adaptation technologies.

Keywords: Climate Change, Adaptation Technologies, Gender Role, Climate Innovation, Indigenous Knowledge, Social Resilience, Eco-feminism, Climate Policy

CORRELATION GENOTYPE-PHENOTYPE: *MEFV* GENE MUTATIONS AND MOROCCAN PATIENTS WITH RHEUMATOID ARTHRITIS

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Abstract

Introduction: rheumatoid arthritis (RA) is a systemic autoimmune disease primarily affecting the joints. Arthritic disorders are associated with mutations of the Mediterranean fever (MEFV) gene. The aim of this study is to show whether MEFV mutations will be involved in the pathogenesis of RA, to explore the frequency of these mutations and to study the genotype-phenotype correlation between mutations in this gene and a cohort of Moroccan patients with rheumatoid arthritis (RA).

Methods: the present study included 100 patients with RA and 200 control group (CG) who were unrelated individuals from the same ethnic. All patients were tested for auto-antibodies: cyclic citrullinated peptide (ACPA/anti-CCP2), rheumatoid factor (RF) and were analyzed by Sanger Sequencing of the 2 and 10 exons of MEFV gene (hot-spot according to the literature).

Results: we detected 13 missense variants already MEFV gene mutation reported in the literature (S154T, G222A, G230L, L611H, L695A, M694V, I720M, A737L, P758S, L709A, T732A, G687A and P743L). Carrier rates of MEFV gene mutations were 24/100 (24%) for the RA group and 4/200 (4%) for CG. In the RA group, we observed that no man has presented with MEFV mutation. In the RA group, while gender, BMI, RF and ACPA were significantly higher in the mutation carrier group than those of the non-carrier group ($p < 0.01$). The level of C-reactive protein and HAQ were slightly elevated in the carrier group but not significant. No other significant differences were observed between patients with MEFV mutations and those without MEFV mutations.

Conclusion: the results of this study suggest that MEFV gene mutations appear to be an aggravating factor severity of RA and consequently, patients with RA might be screened for MEFV gene mutations in countries where FMF is frequent. We report also that our study is the first one in our country Morocco.

Keywords: Rheumatoid arthritis, *MEFV* gene mutations, anti-citrullinated peptide antibodies, rheumatoid factor, autoimmune disease

YEŞİL ÇAY VE SAĞLIK ÜZERİNDEKİ ETKİSİ HEALTH EFFECTS OF GREEN TEA

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Özet

Dünya üzerinde sudan sonra en fazla tüketilen sıvılardan biri olan ve sağlık üzerindeki olumlu etkileri sebebiyle tıbbi bir bitki olarak da değerlendirilen çay, içeriğinde yer alan fenolik madde bileşeninden dolayı, sayısız çalışmaya konu olmuştur. Bilimsel adıyla *Camellia sinensis* bitkisinden elde edilen altı farklı çay çeşidinden biri olan “Yeşil Çay” ise antioksidan etkisi ve fermantasyon basamağına uğramamasına bağlı olarak içeriğinde fazlaca bulundurduğu kateşin ve epigallokateşin gallat (EGCG) sayesinde son zamanların popüler içeceklerinden biri haline gelmiştir. Yeşil çayın popüleritesindeki artış, son yıllardaki hastalık artışlarıyla birlikte gelişen sağlıklı hayat kaygısının da bir sonucu olarak, yeşil çay üzerine yoğun çalışmalar yapılmasına sebebiyet vermiş bu çalışmaların sonucunda genel yargı, yeşil çayın sağlık üzerindeki olumlu etkilerinin temel anlamda içeriğinde yer alan kateşinlerden kaynaklandığı noktasında şekillendirilmiştir. Genellikle mikrobiyal sistemler ile memeli hücre sistemleri ve deney hayvanları üzerinde gerçekleştirilen bu çalışmalarda, yeşil çayın mide, kolon, meme, prostat ve pankreas kanserleri gibi değişik kanser türlerini, kalp damar hastalıklarını, iltihabı ve nörodejeneratif hastalıkları önleyici ve tedaviyi destekleyici etki gösterebileceği bildirilmektedir (Şahin, 2006). İncelenen kaynaklar, yeşil çayın içeriğinde yer alan polifenollerin güçlü antioksidan kapasite sergileyerek reaktif oksijen türlerini nötralize ettiği, oksidatif stres aracılı hücresel hasarı azalttığı ve endojen antioksidan enzim aktivitelerini artırdığı üzerinde ortak bir bulguda birleşirken, bütün bu bulguların yanı sıra biyoyararlanımını artıran ve azaltan bileşenlerin varlığı ile toksik etki bildiren durumların dikkatle incelenmesi gerektiğini bildirmektedir (Kadıoğlu & Ertaş Öztürk, 2021, 341-350). Bu çalışmada ise, bütün geçmiş çalışmaların ve bulguların ışığında yeşil çayın insan sağlığı üzerindeki olumlu etkileri sade ve akıcı bir dil kullanılarak incelenecek, günümüzde sosyal medyanın tüketim alışkanlıkları üzerindeki etkisi yeşil çay tüketimindeki artış üzerinden değerlendirilecek ve diyet listelerinin vazgeçilmezlerinden olan yeşil çaya ve tüketim gereksinimlerine farklı bir bakış açısı sunulacaktır.

Anahtar Kelimeler: Yeşil çay, *Camellia sinensis*, Kateşin, Epigallokateşin gallat (EGCG), Antioksidan, Sağlık

Abstract

With respect to its phenolic contents, tea, which is one of the most popular drinks in the world after water, has been the focus of much research. It is also regarded as a medicinal plant because of its beneficial health effects. One of the six varieties of tea made from the *Camellia sinensis* plant, green tea has gained popularity recently due to its antioxidant qualities as well as the abundance of catechins and epigallocatechin gallate (EGCG) it contains. The antioxidant qualities of green tea are attributed to its lack of fermentation. These research have led to the widespread belief that Green tea has been the subject of much research due to its expanding popularity, the rise in disease rates in recent years, and the growing concern for a healthy lifestyle which are mostly attributable to its catechins. Green tea may have preventive and therapeutic effects on a variety of cancer types, including stomach, colon, breast, prostate, and pancreatic cancers, as well as cardiovascular diseases, inflammation, and neurodegenerative diseases, according to these studies, which are typically carried out on microbial systems, mammalian cell systems, and experimental animals (Şahin, 2006). The examined sources agree that green tea's antioxidants have a substantial antioxidant capacity that increases natural antioxidant enzyme activity, reduces oxidative stress-mediated cellular damage, and neutralizes reactive oxygen species. Furthermore, they state that all these findings, as well as the presence of components that increase or decrease bioavailability and reported toxic effects, should be carefully examined (Kadioğlu & Ertaş Öztürk, 2021, 341-350). Using straightforward language and referencing all prior research and findings, this study will investigate the beneficial impacts of green tea on human health. The increase in green tea consumption will be used to assess how social media affects consumption patterns and the nutritional requirements of green tea, a dietary staple, will be discussed from an alternative perspective.

Keywords: Green Tea, *Camellia sinensis*, Catechin, Epigallocatechin gallate (EGCG), Antioxidant, Health

A FEDERATED LEARNING-BASED PRIVACY-PRESERVING FRAMEWORK FOR DISASTER VICTIM IDENTIFICATION AND REAL-TIME SHARIAH-COMPLIANT ZAKAT AND WAQF FUND ALLOCATION

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Abstract

Natural disasters in Muslim-majority countries like Bangladesh cause massive displacement and urgent humanitarian needs, while traditional centralized data-sharing systems for victim identification and philanthropic fund allocation raise severe privacy concerns. This paper proposes FedZakat, a novel privacy-preserving federated learning framework that enables collaborative training of deep learning models across multiple relief organizations, local governments, and Islamic financial institutions without exchanging raw personal data.

The proposed system performs on-device victim identification using multimodal data (facial images, ID documents, and geolocation) through lightweight CNNs and transformers, while a global model aggregates only model updates. Subsequently, a Shariah-compliant decision engine automatically calculates and prioritizes Zakat and Waqf distribution based on victim vulnerability scores, family size, and Islamic jurisprudential rules (maslaha, darūra, etc.). We implement differential privacy and secure aggregation protocols to prevent inference attacks.

Experiments using synthetic flood victim datasets and real-world facial datasets demonstrate that FedZakat achieves 94.3% victim identification accuracy (only 1.8% drop compared to centralized training) while reducing data exposure by 100%. The allocation module successfully respects Shariah constraints in 99.7% of cases. The framework is lightweight enough to run on edge devices used by field workers in disaster zones.

This work represents the first integration of federated learning with Islamic social finance instruments, offering a scalable, transparent, and privacy-preserving solution for rapid post-disaster humanitarian response in Muslim communities.

Keywords *Federated Learning, Privacy-Preserving Machine Learning, Disaster Victim Identification, Islamic Social Finance, Zakat and Waqf Allocation, Shariah-Compliant Systems, Deep Learning, Differential Privacy, Humanitarian Technology, Bangladesh Flood Response*

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**CROSS-CULTURAL ADAPTATION, TRANSLATION, AND VALIDATION OF THE
BERG BALANCE SCALE FOR USE IN THE ALBANIAN-SPEAKING
POPULATION STUDY PROTOCOL**

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Abstract

The Berg Balance Scale (BBS) is a widely used clinical instrument for assessing balance and identifying individuals at risk of falling, but no validated Albanian version currently exists. Cross-cultural adaptation procedures are essential to ensure that translated assessment tools maintain conceptual equivalence and cultural relevance. This study aims to translate, culturally adapt, and validate the BBS for use in Albanian-speaking populations. An observational cross-cultural design will be implemented in a clinical setting. The adaptation process will follow internationally recommended guidelines, including forward translation, back-translation, expert committee review, and pre-testing with target users. Psychometric evaluation will be conducted with approximately 200 participants, assessing the scale's reliability through measures of stability and internal consistency. We anticipate that the Albanian version of the BBS will receive positive feedback, demonstrating strong reliability and suitability for clinical and research applications in the Albanian-speaking community.

Keywords: Observational study; Berg balance scale; Cross-cultural adaptation; Validity; Reliability.

**KADINLARIN DUYGUSAL ÖZ FARKINDALIK VE ÖZ ANLAYIŞLARI ÜZERİNE
PSİKODRAMA GRUP ÇALIŞMASI**
PSYCHODRAMA GROUP WORK ON WOMEN’S EMOTIONAL SELF-
AWARENESS AND SELF-UNDERSTANDING

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ÖZET

Bu araştırmanın amacı, psikodrama grup çalışmasının kadınların duygusal öz farkındalık ve öz anlayış düzeylerini geliştirmedeki etkililiğini incelemektir. Tek gruplu ön test-son test desende yürütülen bu araştırma, Aksaray ilinde bulunan kadın aktivite merkezine devam eden 30-50 yaşları aralığındaki 10 kadın arasından araştırmaya katılmaya gönüllü olan 6 kadın ile gerçekleştirilmiştir. Psikodrama oturumları haftada bir gün, 12 hafta boyunca yürütülmüştür ve her oturum en az 135 dakika sürmüştür. Oturumlar “ısınma, oyun (eylem) ve paylaşım” aşamalarından oluşmuş olup rol değiştirme, eşleme ve ayna teknikleri kullanılmıştır. Araştırmada grup çalışması öncesinde ve sonrasında katılımcıların sosyodemografik bilgileri ve onam formlarıyla birlikte “Kişisel Bilgi Formu”, “Öz Anlayış Ölçeği” ve “Duygusal Öz Farkındalık Ölçeği” kullanılarak veriler toplanmıştır. Araştırmada elde edilen veriler SPSS 22.0 paket programı aracılığıyla analiz edilmiştir. Yapılan analiz sonucunda kadınların duygusal öz farkındalık ve öz anlayış ölçeğinden aldıkları ön test ve son test puanları arasında istatistiksel olarak anlamlı bir farklılık saptanmamıştır. Bununla birlikte psikodrama grubunun son oturumunda gerçekleştirilen spektrogram çalışmasıyla grup üyeleri; duyguları anlama ve ifade etme, empati, sınır koyma, farklılıklara saygı gösterme, kendini açma, ilişkilerdeki dinamikler, kendini gerçekleştirme gibi konularda farkındalık kazandıklarını bildirmişlerdir. Sonuç olarak psikodrama temelli grup çalışmalarının kadınların duygularını fark etmelerinde, kendilerine ve çevrelerine yönelik anlayışlarının olumlu yönde geliştirilmesinde önemli işleve sahip olduğu gözlemlenmiştir.

Anahtar Kelimeler: Duygusal Öz Farkındalık, Kadın Refahı, Psikodrama, Öz Anlayış

ABSTRACT

Keywords: Emotional Self-Awareness, Women’s Welfare, Psychodrama, Self-Understanding
The objective of this study is to examine the efficacy of psychodrama group work in enhancing women’s emotional self-awareness and self-understanding levels. Conducted in a single-group pretest-posttest design, this study involved six women who volunteered to participate in the study from among ten women aged 30-50 who attended a women’s activity centre in Aksaray province. The experimental group participated in psychodrama sessions, which were conducted on a weekly basis for a period of 12 weeks, with each session having a duration of at least 135 minutes. The sessions comprised three distinct stages: a “warm-up”, a “play (action)” phase,

and a “sharing” stage. Various techniques were employed, including role reversal, matching, and mirroring. The study utilized a multifaceted approach to data collection, employing instruments such as the “Personal Information Form,” the “Self-Understanding Scale,” and the “Emotional Self-Awareness Scale.” These were complemented by participants’ sociodemographic information and consent forms, collected prior to and following the group work sessions. The data obtained in the study were analyzed using SPSS 22.0 software. The analysis revealed no statistically significant difference between the women’s pre-test and post-test scores on the emotional self-awareness and self-understanding scales. Furthermore, the results of the spectrogram exercise conducted during the final session of the psychodrama group indicated that group members reported gaining awareness in areas such as understanding and expressing emotions, empathy, setting boundaries, respecting differences, opening, dynamics in relationships, and self-actualization. Consequently, psychodrama-based group work was observed to play an important role in helping women recognize their emotions and positively develop their understanding of themselves and their environment.

**MİMARİ RESTORASYON İŞLERİNDE
İŞ SAĞLIĞI VE GÜVENLİĞİNE RİSKLERİNE DAİR BİR ÇALIŞMA
A STUDY ON OCCUPATIONAL HEALTH AND SAFETY RISKS
IN ARCHITECTURAL RESTORATION WORKS**

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ÖZET

Bu bildiri, mimari restorasyon işlerinde karşılaşılabilecek olası iş sağlığı ve güvenliği risklerini ortaya koymak ve bu risklere karşı alınabilecek önlemleri paylaşmak amacıyla hazırlanmıştır. Çalışmada öncelikle mimari restorasyon kavramı ve bu işlerin kapsamı hakkında bilgi verilmiş, ardından restorasyon sürecinde ortaya çıkabilecek İSG riskleri detaylandırılmıştır. Son bölümde ise bu risklerin azaltılması için uygulanabilecek tedbir önerilerine yer verilmiştir.

Mimari restorasyon, tarihi yapıların özgün mimari özelliklerini koruyarak, bozulmuş veya yıpranmış bölümlerini bilimsel ilkeler doğrultusunda, özgün malzeme ve tekniklerle onarma sürecidir. Bu uygulamalar, hem geçmişten gelen mimari değerlerin gelecek nesillere aktarılmasını hem de kent kimliğinin sürekliliğine sağlar. Dolayısıyla, kültürel mirasın korunması açısından mimari restorasyonun önemi büyüktür. İş sağlığı ve güvenliği bakımından tehlike, işyerinde var olan ya da dışarıdan gelebilecek, çalışanı veya işyerini etkileyebilecek zarar veya hasar verme potansiyelini ifade eder. Bir diğer kavram olan risk ise tehlikeden kaynaklanacak kayıp, yaralanma ya da başka zararlı sonuç meydana gelme ihtimalini ifade etmektedir. Restorasyon projeleri ofis ve saha çalışmalarından oluşur. Saha çalışmalarında birçok iş sağlığı ve güvenliği riski oluşabilir. Bu risklerin başında yüksekten düşme, cisim düşmesi, iskele veya platform çökmesi, elektrik kaynaklı tehlikeler ve yangın riski gelir. Bu tür riskler, yalnızca yaralanmalara değil, çalışanların hayatını kaybetmesine kadar varan ciddi sonuçlara yol açabilir. Bu nedenle, saha çalışmalarına başlamadan önce kapsamlı bir risk değerlendirmesi yapılmalı, gerekli önlemler alınmalıdır. Bu önlemler yüksekten düşme önleyici ve durdurucu sistemlerin hazır edilmesi, standart ve bakımı tam iş ekipmanının kullanılması, kişisel koruyucu donanımların kullanımının sağlanması, çalışan iş sağlığı ve güvenliği farkındalığının artırılması ve denetim mekanizmasının daha sık işletilmesi olmalıdır.

Anahtar Kelimeler: Mimari restorasyon, İş sağlığı ve güvenliği, Tehlike, Risk, Önlem

ABSTRACT

This report was prepared to identify potential occupational health and safety risks that may be encountered in architectural restoration projects and to share the precautions that can be taken against these risks. The study first provides information about the concept of architectural restoration and its scope, followed by a detailed explanation of the OHS risks that may arise during the restoration process. The final section includes recommended measures that can be implemented to mitigate these risks.

Architectural restoration is the process of repairing damaged or deteriorated sections of historical buildings, using original materials and techniques, in accordance with scientific principles, while preserving their original architectural features. These practices ensure both the transmission of historical architectural values to future generations and the continuity of urban identity. Therefore, architectural restoration is of great importance for the preservation of cultural heritage. In terms of occupational health and safety, hazard refers to the potential for harm or damage, either existing in the workplace or originating from external sources, that could affect the employee or the workplace. Risk, another concept, refers to the possibility of

loss, injury, or other harmful consequences resulting from the hazard. Restoration projects consist of office and field work. Many occupational health and safety risks can occur in construction site. Common risks are falls from heights, falling objects, scaffolding or platform collapse, electrical hazards, and fire. Such risks can lead not only to injuries but also to serious consequences, including the death of workers. Therefore, a comprehensive risk assessment should be conducted before starting site work, and the necessary precautions should be taken. These precautions include preparing fall prevention and arrest systems from heights, using standardized and fully maintained work equipment, ensuring the use of personal protective equipment, raising employee occupational health and safety awareness, and implementing inspection mechanisms more frequently.

Keywords: Architectural restoration, Occupational health and safety, Hazard, Risk, Precaution

REVIEW ON PLANCK'S QUANTUM THEORY

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Abstract

Planck's quantum theory is introduced by Max Planck in 1900, that energy is not continuous but is emitted or absorbed in discrete/discontinuous packets called "quanta". The energy of a single quantum ' E ' is directly proportional to its frequency ' ν ', as described by the equation $E=h\nu$, where ' h ' is Planck's constant, ($h=6.626 \times 10^{-34}$ Js). This theory resolved the "Ultraviolet Catastrophe" in classical physics by providing a successful model for blackbody radiation and is considered a fundamental principle of quantum mechanics. Planck's quantum theory began with a simple but groundbreaking idea: energy doesn't flow in smooth, endless waves, but instead comes in tiny, indivisible packets called quanta. While trying to explain how hot objects give off light—a problem that puzzled scientists for years. Planck realized that classical physics couldn't describe the real behavior of nature. His proposal that each packet of energy is linked to the frequency of light through the constant ' h ' not only solved the blackbody radiation mystery but also opened the door to an entirely new way of thinking about the universe.

Keywords: Quanta, Planck's constant (h), Ultraviolet Catastrophe, Quantum mechanics, Frequency, Blackbody Radiation.

A COMPREHENSIVE REVIEW ON CURRENT ADVANCEMENTS AND APPLICATIONS OF BIOINFORMATICS IN DISEASE ANALYSIS

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Abstract

Bioinformatics has proved to be an unavoidable component of contemporary biomedical and clinical studies, having effectively combined computational science, statistics, and molecular biology to administer and understand biological information that has been increasing exponentially. The availability of efficient and high-throughput technologies, such as next-generation sequencing (NGS), state-of-the-art mass spectrometry (MS), and, specifically, advanced machine learning (ML) systems have tremendously broadened the scope of the field. Significant uses have also moved to critical applications like high precision detection of pathogens, genetic variations analysis, strong biomarkers identification and the basis of AI-guided precision medicine and computational drug design. More specifically, the creation and implementation of deep learning algorithms have transformed the accuracy of predictions, in particular, in those tasks that are complicated, such as protein structure modeling (e.g., AlphaFold) and the systematic analysis of multi-omics data. Moreover, bioinformatics has become a crucial and important part of worldwide community health, and actively supports mass genomic surveillance, real time outbreak monitoring, comprehensive immunological responses screening, and rational vaccine development. The field still experiences technical problems in the scale of high computational requirements of large-scale analyses, issues of data privacy and data governance and the overall necessity of standardized and reproducible analytical pipelines despite its immense transformative potential. This is a systematically synthesized review of the latest trends in bioinformatics, the key tools, and transformative applications on disease analysis and thus generates well-structured and comprehensive information to researchers, clinical practitioners, and other professionals in the field of public health. Through an integration of the current trends in methodological and technological progress, the work will serve as an informative resource in strategic decision making in disease management and in the advancement of novel and scalable computational solutions to offer the future of medicine.

Keywords: Bioinformatics, Precision Medicine, Machine Learning, Deep Learning, Drug Design, Public Health.

EMERGING CARDIOVASCULAR HEALTH PROBLEMS IN BANGLADESH DUE TO CLIMATE CHANGE AND ITS PREDISPOSING FACTORS

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ABSTRACT

Introduction: Climate change poses an increasing threat to public health, particularly in low- and middle-income countries such as Bangladesh. Among the non-communicable diseases affected, cardiovascular disease (CVD) has emerged as a leading cause of morbidity and mortality that may be exacerbated by climate-related stressors. Climate change is profoundly impacting cardiovascular disease through rising temperatures, more extreme weather events, and worsening air pollution. Common CVD due to climate change is heatstroke. In recent time frequency of heat stroke increases in Dhaka city and other metropolitan area. Extreme heat exposure causes peripheral vasodilation and increased sweating, leading to dehydration, reduced blood volume, and elevated heart rate and cardiac workload. Conversely, extreme cold triggers peripheral vasoconstriction and sympathetic nervous system activation, which raises blood pressure and myocardial oxygen demand. These responses can strain the cardiovascular system, especially in vulnerable individuals, and precipitate acute events like heart attacks, strokes, and heart failure exacerbations.

Objective: To assess the impact of climate change on the prevalence and severity of CVD in Bangladesh and to identify the key environmental and socio-demographic factors predisposing individuals to CVD under changing climatic conditions.

Materials and methods: This cross sectional observation study was conducted in different tertiary care level hospital of Bangladesh. Data was collected during April to June month. April to June are typically the hottest, with average high temperatures of 92°F . Patients attended in emergency department with heat stroke, no prior history of any cardiovascular disease were enrolled for study. Using a mixed-method approach, secondary data on temperature, humidity, air pollution, and CVD prevalence, incidence were analyzed alongside primary data collected from selected hospitals. The findings were expected to highlight vulnerable populations, demographic factors, and modifiable risk factors influenced by climate variability. Data analysis was done using SPSS version 23.0.

Results: In this study age ranging from 18 to 70 years. Mean age of the patient was 56.2 ± 8.50 years. Out of 32 cases 25(78.1%) of cases were male and 7(21.9%) were female. Male and female ratio was 3.5:1. Present study give impression that headache, vertigo, chest pain, sweating, breathlessness and nausea-vomiting was the most common presentation. Rising temperatures, increased heatwaves, and poor air quality have been linked to existing hypertension, smoking, dyslipidaemia, obesity and family history of CVD were major risk factors. Environmental stressors may exacerbate CVD risk factors such as prolonged outdoor work, poor diet, inadequate drinking water, poor air quality. Furthermore, socioeconomic vulnerability, limited healthcare access, and occupational exposure compound the risks faced by vulnerable population.

Conclusion: Present study contribute to the understanding of how climate change influences cardiovascular disease patterns in Bangladesh. By identifying environmental determinants and predisposing factors, it will help guide public health authorities in designing evidence-based interventions. The outcomes are expected to support climate-health policy integration, promote community awareness, and strengthen national resilience against future health threats driven by climate change.

SİYASAL KÜRT HAREKETİNDE ÜÇ TARZ-I SİYASET*

Abdulbaki Kınsün¹

Özet

Siyasal Kürt Hareketi, modern dünyanın en uzun soluklu toplumsal hareketlerinden biridir. Toplumsal alanı yeniden yapılandırma ve siyasal bir özne olarak rol üstlenme arzusu, hareketin 19. yüzyılın ortalarında ortaya çıkışının temel dinamiğini oluşturur. Bu tarihten günümüze dek varlığını sürdüren Kürt hareketi, değişen tarihsel ve toplumsal koşullar altında farklı ideolojik biçimler alarak hem Kürt kimliğini hem de bu kimliğe bağlı toplumsal ve siyasal talepleri farklı biçimlerde temsil ederek varlığını günümüze dek devam ettirmiştir. Kürt hareketinin bugünkü ideolojik konumunu, temsil ettiği Kürt kimliğini ve siyasal taleplerini anlamak için, hareketin tarihsel seyri boyunca geçirdiği ideolojik dönüşümleri incelemek gerekmektedir. Hareketin ideolojik yönelimi ve stratejisi, 1923 öncesinde dönemin ruhuna uygun olarak geleneksel ve yer yer ulusal bir nitelik taşıırken, 1923 sonrasındaki tek parti döneminde belirgin biçimde milliyetçi ve ayrılıkçı bir çehreye bürünmüştür. Bir süre (1938-1959 arası) kamusal görünürlüğünü yitiren hareket, 1960'lardan 1990'lara kadar uzanan dönemde *sol-sosyalist* temalar etrafında şekillenen dönemin ruhuna münasip yeni bir ideoloji geliştirmiştir. 1990'lardan günümüze kadar geçen süreçte ise Kürt siyasal söylemi *demokratik-sol* temalar üzerinden yeniden biçimlenmiştir. Bu tarihsel süreçler dikkate alındığında, Kürt siyasal hareketini şekillendiren üç temel dinamikten söz etmek mümkündür: *geleneksel tepki*, ulusal tepki ve *demokratik-sol tepki*. Diğer bir ifadeyle bu üç yönelim, Kürt siyasalının farklı üç veçhesini, Akçura'nın tabiriyle, üç *tarz-ı siyaset*'ini temsil etmektedir. Her ne kadar tarihsel olarak ardışık bir görünüm sergileseler de, bu yönelimler arasında keskin sınırlar bulunmayıp; dönemsel olarak iç içe geçme ve karşılıklı etkileşim hâlleri de görülmektedir. Bu bağlamda, Kürt siyasalının tarihsel gelişiminde öne çıkan bu üç *tarz-ı siyaset* üzerinde durmak, hareketin bugünkü yönelimlerini ve siyasal tahayyülünü anlamak açısından önem arz etmektedir.

Anahtar Kelimeler: Kürtler, Ulus, Sol, Siyasi Hareketler

THREE STYLES OF POLITICS IN THE POLITICAL KURDISH MOVEMENT

Abstract

The Kurdish Political Movement is one of the longest-running social movements in the modern world. The desire to restructure the social sphere and assume the role of a political subject constitutes the fundamental dynamic behind the movement's emergence in the mid-19th century. The Kurdish movement, which has continued to exist from that time to the present day, has maintained its existence to the present day by taking on different ideological forms under changing historical and social conditions, representing both Kurdish identity and the social and political demands associated with this identity in different ways. To understand the current ideological position of the Kurdish movement, the Kurdish identity it represents, and its political demands, it is necessary to examine the ideological transformations it has undergone throughout its historical course. The ideological orientation and strategy of the movement,

* Bu bildiri, Doktora tezimde temas edilen bir bölümden ilhamla geliştirilmekle beraber kavramsallaştırmaları, biçimi ve kaynakları yeniden oluşturularak şekillendirilmiştir.

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which was traditional and at times national in nature in line with the spirit of the period before 1923, took on a distinctly nationalist and separatist character in the single-party period after 1923. After losing its public visibility for a period (between 1938 and 1959), the movement developed a new ideology appropriate to the spirit of the era, shaped around left-wing socialist themes, during the period from the 1960s to the 1990s. From the 1990s to the present day, Kurdish political discourse has been reshaped around democratic-left themes. Considering these historical processes, it is possible to speak of three fundamental dynamics that shaped the Kurdish political movement: traditional reaction, national reaction, and democratic-left reaction. In other words, these three orientations represent three different aspects of Kurdish politics, or, in Akçura's words, three styles of politics. Although they appear to be sequential historically, there are no sharp boundaries between these orientations; they overlap and interact with each other from time to time. In this context, focusing on these three styles of politics that stand out in the historical development of Kurdish politics is important for understanding the movement's current orientations and political imagination.

Keywords: Kurds, Nation, Left, Political Movements

DÜZGÜN SIRALI ELİPTİK DALGALI KANATLI BORULU ISI DEĞİŞTİRİCİLERİNDE FARKLI HÜCUM AÇILARI İÇİN AKIŞ VE ISI TRANSFERİNİN SAYISAL İNCELENMESİ
NUMERICAL INVESTIGATION OF FLOW AND HEAT TRANSFER IN INLINE ELLIPTICAL WAVY FIN-AND-TUBE HEAT EXCHANGERS FOR DIFFERENT ATTACK ANGLES

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ÖZET

Kanatlı-borulu ısı değiştiricileri, gaz ve sıvı akışkanlar arasında doğrudan temas olmadan ısı transferi yapmak üzere tasarlanmış cihazlardır. Bu sistemlerde, bir akışkan boruların içinden akarken, diğeri boruların ve kanatçıkların üzerinden akar. Bu tür ısı eşanjörleri, otomotiv sistemlerinden enerji üretimine ve petrokimya proseslerinden HVAC (ısıtma, havalandırma ve iklimlendirme) sistemlerine kadar uzanan endüstriyel uygulamalarda yaygın olarak kullanılmaktadır ve soğutma, ısıtma ve genel termal yönetimde önemli roller oynarlar.

Bu tür ısı eşanjörlerinde, hava tarafı termal direnci genellikle baskındır ve toplam termal direncin önemli bir kısmını oluşturur. Bu nedenle, etkili pasif iyileştirme tekniklerinin kullanılması ve kanatçık geometrisinin optimize edilmesi, hava tarafı ısı transferi performansını iyileştirmek için çok önemlidir.

Bu çalışma, çeşitli hücum açıları için düzgün sıralı eliptik dalgalı kanatçık-borulu ısı eşanjörlerinde akış davranışı ve ısı transferi performansının üç boyutlu sayısal bir incelemesini sunmaktadır. Tekrarlanan geometrik yapı nedeniyle periyodik sınır şartı uygulanmıştır. Türbülanslı akışı modellemek için RNG k-ε türbülans modeli kullanılmıştır. Sayısal kod doğrulandıktan sonra, sonlu hacim yöntemi kullanılarak simülasyonlar gerçekleştirilmiş olup sonuçlar, hücum açısının hem ısı transferini hem de basınç düşüşünü belirlemede önemli bir rol oynadığını göstermiştir. Bu çalışmanın sonuçları, ısı transferinde önemli bir iyileştirmenin elde edilebileceğini göstermiştir.

Anahtar Kelimeler: eliptik boru, dalgalı kanatçık, HAD, ısı transferi, basınç düşüşü

ABSTRACT

Fin-and-tube heat exchangers are devices designed to transfer heat between gas and liquid fluids without direct contact. In these systems, one fluid flows inside the tubes while the other flows over the tubes and fins. Such heat exchangers are widely used in industrial applications ranging from automotive systems to power generation, and from petrochemical processes to HVAC (heating, ventilation, and air conditioning) systems, where they play critical roles in cooling, heating, and overall thermal management.

In these types of heat exchangers, the air-side thermal resistance is typically dominant and accounts for a significant portion of the total thermal resistance. Therefore, employing effective passive enhancement techniques and optimizing fin geometry are crucial for improving air-side heat transfer performance.

This study presents a three-dimensional numerical investigation of flow behavior and heat transfer performance in inline elliptical wavy fin-and-tube heat exchangers for various attack angles. Due to the repeated pattern, periodic boundary condition is applied. RNG k- ϵ turbulent model is used to model turbulent flow. After validating the numerical scheme, simulations are performed using the finite volume method. and the results demonstrate that the attack angle plays a significant role in determining both the heat transfer and pressure drop. The results of this study indicated that significant improvement in heat transfer can be obtained.

Keywords: elliptical tube, wavy fin, CFD, heat transfer, pressure drop

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EXPERIMENTAL STUDY OF ECO-FRIENDLY Cu_2SnS_3 THIN FILMS FOR SOLAR CELL APPLICATIONS

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Abstract

Cu_2SnS_3 (CTS) is a non-toxic, low-cost, and earth-abundant material, making it a promising candidate for thin-film solar cell absorbers. It exhibits a direct band gap and a high absorption coefficient ($\sim 10^5 \text{ cm}^{-1}$), which are essential characteristics for efficient photovoltaic performance. In this work, CTS thin films were successfully deposited using a low-cost spray pyrolysis technique. The obtained films were characterized to evaluate their structural, optical, and morphological properties. The results confirm that spray-pyrolyzed CTS is a suitable and environmentally friendly material for photovoltaic applications.

Keywords: Cu_2SnS_3 , Thin-film solar cells, Spray pyrolysis, Absorber layer, Eco-friendly materials.

DETERMINATION OF SELF-ATTENUATION CORRECTION FACTORS IN GAMMA SPECTROMETRY FOR CYLINDRICAL SAMPLE GEOMETRY

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ABSTRACT

The gamma spectrometric method is used to determine the natural and artificial radioactivity levels of various materials, including environmental, food, and construction materials. In radioactivity calculations, several corrections must be applied. Self-attenuation correction is a crucial factor that compensates for the reduction in photopeak count rate caused by gamma-ray absorption within the sample, which depends on the matrix composition and density. This effect becomes especially significant at low photon energies (<200 keV) and in samples with high-density matrices.

In this study, self-attenuation correction factors for twelve cement samples were determined over a gamma-ray energy range of 59.5 keV (^{241}Am) to 1408 keV (^{152}Eu) using two approaches: (1) theoretical estimation based on calculated mass attenuation coefficients, and (2) empirical determination through direct measurement. Gamma-ray spectra were acquired using a p-type coaxial high-purity germanium (HPGe) detector with a relative efficiency of 40% and an energy resolution of 1.8 keV at 1332 keV for ^{60}Co . The detector was coupled to a digital spectrometer, and MAESTRO software was used for photopeak analysis. In the first approach, the mass attenuation coefficients at the selected energies were calculated using the EPIX database, and self-attenuation correction factors were derived according to the Beer–Lambert law. In the second approach, empirical correction factors were obtained using the gamma transmission method with ^{241}Am , ^{57}Co , ^{137}Cs , ^{152}Eu , ^{54}Mn , and ^{65}Zn point sources.

The self-attenuation correction factors of the samples showed strong agreement between the empirical and calculated methods, ranging from 1.01 to 1.41 and 1.05 to 1.32, respectively. The highest correction values were observed at an energy of 59.5 keV for ^{241}Am , where self-attenuation effects are most pronounced due to enhanced photon absorption at lower energies. Neglecting these correction factors in radioactivity calculations can lead to errors of up to 30–40%, particularly for low-energy gamma rays. Overall, the results confirm that both theoretical and empirical methods provide reliable estimations of self-attenuation effects, supporting their application in radioactivity calculations using gamma spectrometry.

Keywords: HPGe, Self-Attenuation, Point Gamma Source, Cement, Reference Material.

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Mo₆X₆ NANOTELLERİNİN GERİLME, SIKIŞTIRMA VE BURULMA ALTINDAKİ ELEKTRONİK İLETKENLİĞİ

ELECTRONIC CONDUCTIVITY OF Mo₆X₆ NANOWIRES UNDER TENSILE, COMPRESSIVE, AND TORSIONAL STRAIN

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ÖZET

Transition-metal chalcogenide (TMC) nanotellerin dikkat çekici elektronik ve yapısal özelliklere sahiptir ve bu malzemelerin geleceğin nano-elektronik uygulamaları için güçlü adaylar arasında yer almaktadır. Bu çalışmada, Mo-tabanlı TMC nanotellerinin elektronik davranışlarının mekanik deformasyonlardan nasıl etkilendiği araştırıldı; incelemede özellikle Mo₆S₆, Mo₆Se₆ ve Mo₆Te₆ yapılarına yoğunlaşıldı. Daha önce M₃X₃ (M = Mo, W; X = S, Se, Te) yapılarına ilişkin yapılan çalışmalar temel alındı ve analiz Mo₆X₆ konfigürasyonlarına genişletildi. Bu yapıların gerilme–sıkıştırma ile burulma altındaki tepkileri değerlendirildi.

Yoğunluk Fonksiyonel Teorisi (DFT) hesaplamaları OpenMX açık kaynak paketinden yararlanılarak gerçekleştirildi. Gerilme ve sıkıştırma durumları, örgü parametresi *c*'nin sistematik biçimde değiştirilmesiyle uygulandı. Burulma deformasyonunun incelenmesi amacıyla, nanotelin ekseni boyunca atomik koordinatlara dönme işlemleri uygulanarak bükülmüş süper hücreler oluşturuldu.

Her bir gerinim durumu için DFT simülasyonları tamamlandıktan sonra, elektronik iletkenlik değerleri yarı-klasik Boltzmann taşıma teorisini kullanan BoltzTraP yazılımı aracılığıyla hesaplandı. Böylece, farklı tür ve büyüklüklerdeki mekanik gerinimlerin yük taşınımı üzerindeki etkileri nicel olarak ortaya kondu.

Sonuçlar, Mo₆X₆ nanotellerinin elektronik özelliklerinin gerinime duyarlılık gösterdiğini ve mekanik deformasyonun bir boyutlu TMC malzemelerinin iletkenliklerinin ayarlanmasında etkili bir yöntem olarak kullanılabileceğini gösterdi.

Anahtar Kelimeler: Geçiş metali kalkojenitleri, Yoğunluk Fonksiyonel Teorisi (DFT), Gerinim mühendisliği, Nanoteller, Elektronik iletkenlik

ABSTRACT

Transition-metal chalcogenide (TMC) nanowires possess remarkable electronic and structural properties, making them strong candidates for future nano-electronic applications. In this study, the effects of mechanical deformation on the electronic behavior of Mo-based TMC nanowires were investigated, with a particular focus on the Mo₆S₆, Mo₆Se₆, and Mo₆Te₆ structures. Previous studies on M₃X₃ (M = Mo, W; X = S, Se, Te) configurations were taken as a foundation, and the analysis was extended to the Mo₆X₆ systems. The responses of these structures under tensile–compressive and torsional strain were evaluated.

Density Functional Theory (DFT) calculations were carried out using the OpenMX open-source package. Tensile and compressive strain were applied by systematically varying the lattice parameter c . To investigate torsional deformation, twisted supercells were constructed by applying rotational transformations to the atomic coordinates along the nanowire axis.

After completing the DFT simulations for each strain condition, electronic conductivity values were computed using the BoltzTraP code, which employs semiclassical Boltzmann transport theory. This approach enabled a quantitative assessment of how different types and magnitudes of mechanical strain affect charge transport.

The results indicated that the electronic properties of Mo_6X_6 nanowires are highly sensitive to strain and demonstrated that mechanical deformation can serve as an effective method for tuning the conductivity of one-dimensional TMC materials.

Keywords: Transition-metal chalcogenides, Density Functional Theory (DFT), Strain engineering, Nanowires, Electronic conductivity

AKILLI MENÜ: RESTORANLAR İÇİN KİŞİSELLEŞTİRİLMİŞ MENÜ ÖNERİ SİSTEMİ

SMART MENU: A PERSONALIZED MENU RECOMMENDATION SYSTEM FOR RESTAURANTS

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ÖZET

Akıllı Menü, restoranlar için QR kod tabanlı, dinamik ve bağlamsal farkındalığa sahip bir dijital menü sistemidir. Müşteriler, masada yer alan QR kodu okutarak ilgili restorana ait menüye erişmekte ve yemekler, anlık popülerlik skorlarına göre sıralanmış biçimde görüntülenmektedir. Oluşturulan sistem; Selenium ve BeautifulSoup kullanılarak Yemeksepeti’nden veri toplanması, ardından regex ve anahtar kelime eşleştirme teknikleri ile verinin temizlenmesi ve kategori tespitinin gerçekleştirilmesi üzerine inşa edilmiştir. Çalışmanın temel yenilikçi bileşeni, saat bazlı dinamik popülerlik skorlama algoritmasıdır. Bu kapsamda, 12.00–14.00 saatleri arasında fast food kategorisindeki ürünler, 19.00–21.00 saatleri arasında ise ana yemek kategorisindeki ürünler daha yüksek ağırlık alarak menüde üst sıralarda konumlandırılmaktadır. Popülerlik skoru, her bir ürün için ilgili saatteki satış sayısına ek olarak, önceki üç saatin ortalama satış değerinin iki katının dahil edilmesiyle hesaplanmaktadır.

Sistem, yalnızca etiket temelli bir sınıflandırma yapmaktan öteye geçerek içerik analizi tabanlı akıllı diyet filtreleme özelliği sunmaktadır. Örneğin, süt ürünü içeren ancak et içermeyen yemekler otomatik olarak vejetaryen olarak işaretlenmekte; buna karşın bu ürünler vegan olarak sınıflandırılmamaktadır. Böylece, diyet tercihlerine duyarlı ve daha güvenilir bir filtreleme mekanizması sağlanmaktadır. Çalışma, Flask tabanlı bir backend, duyarlı HTML/CSS/JS frontend ve her restoran için otomatik QR kod üretimi ile uçtan uca bütünsel bir çözüm sunmaktadır. Uygulama, 237 restoran, 1.035 yemek ve simüle edilmiş 13.455 satış kaydı üzerinden çalıştırılmış; klasik statik menü yapılarından farklı olarak zaman bilgisini, popülerlik dinamiklerini ve diyet tercihlerine ilişkin içerik analizini bir araya getirerek kişiselleştirilmiş, dinamik ve bağlam farkındalığı yüksek bir menü deneyimi ortaya koymuştur.

Anahtar Kelimeler: QR Kod Tabanlı Dijital Menü, Dinamik Popülerlik Algoritması, Akıllı Diyet Filtreleme Sistemi, Flask Tabanlı Web Uygulaması, Veri Madenciliği ve Otomatik Kategori Tespiti

ABSTRACT

Smart Menu is a QR code-based, dynamic, and context-aware digital menu system designed for restaurants. Customers access a restaurant’s menu by scanning the QR code placed on the table, after which dishes are displayed according to their real-time popularity scores. The system is built on data collected from Yemeksepeti using Selenium and BeautifulSoup, followed by data cleaning and category detection through regex and keyword-matching techniques. The core innovation of the study is the hour-dependent dynamic popularity scoring algorithm. In this framework, fast-food items receive higher weights and appear at the top of

the menu between 12:00 and 14:00, while main-course items are prioritized between 19:00 and 21:00. The popularity score for each dish is calculated as the sum of the current hour's sales and twice the average sales of the preceding three hours.

Beyond simple label-based classification, the system incorporates an intelligent, content-based diet filtering mechanism. For example, dishes containing dairy products but no meat are automatically labeled as vegetarian, but not as vegan. This approach provides a more reliable filtering structure that is sensitive to dietary preferences. The proposed system offers an end-to-end solution comprising a Flask-based backend, a responsive HTML/CSS/JS frontend, and automatic QR code generation for each restaurant. The application was evaluated using data from 237 restaurants, 1,035 dishes, and 13,455 simulated sales records. Unlike traditional static menus, the Smart Menu system integrates temporal information, popularity dynamics, and diet-oriented content analysis to deliver a personalized, dynamic, and context-aware menu experience.

Keywords: QR-Based Digital Menu, Dynamic Popularity Algorithm, Intelligent Diet Filtering System, Flask-Based Web Application, Data Mining, and Automatic Category Detection

**INFLUENCER KÜLTÜRÜNÜN İLETİŞİM DİLİ:
KİMLİK İNŞASI VE PERFORMANS ESTETİĞİ
THE COMMUNICATION LANGUAGE OF INFLUENCER CULTURE:
IDENTITY CONSTRUCTION AND PERFORMANCE AESTHETICS**

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ÖZET

21. yüzyılın dijital medya devrimi, iletişim pratiklerini sadece hızlandırmakla kalmamış, aynı zamanda bireylerin kendilerini kurma, sunma ve ticarileştirme biçimlerini de kökten dönüştürmüştür. Bu değişimin en görünür tezahürlerinden biri influencer kültürüdür; sosyal medya platformlarında merkezileşen bu kültür, bireylerin takipçileriyle kurduğu dilsel, görsel ve etkileşimsel kodlar aracılığıyla kimlik üretimini bir performansa dönüştürmektedir. Bu çalışma, influencer kültürünün iletişim dili bağlamında kimlik inşası, performans estetiği ve görünürlük ekonomisinin etkileşimini ayrıntılı biçimde incelemeyi amaçlar. Araştırmanın ana soruları şunlardır: Influencerların dilsel tercihleri ve görsel kompozisyonları izleyici algısını nasıl biçimlendirir? Otantiklik söylemi hangi stratejik süreçlerle pazarlanır ve izleyiciyle duygusal bağ nasıl tesis edilir? Görünürlük ekonomisi kimlik üretiminde hangi yapısal dönütleri sağlar ve bunun toplumsal sonuçları nelerdir? Yöntemsel olarak nitel içerik analizi tercih edilmiştir. Araştırma kapsamında Instagram, TikTok ve YouTube platformlarında moda, yaşam stili, eğitim, aktivizm ve siyaset yorumculuğu gibi farklı kategorilerde faaliyet gösteren yirmi mikro ve makro influencer seçilmiş; bu hesapların son iki yıllık dönemine ait paylaşımları, hikâye anlatıları, kısa videolar, sponsorlu içerikler ve takipçi etkileşim verileri kapsamlı şekilde incelenmiştir. Analiz, söylem analizi, görsel semiyotik ve tematik kodlama teknikleriyle gerçekleştirilmiştir. Elde edilen bulgular üç ana tema etrafında toplanmıştır. İlk tema kimliğin sürekli yeniden üretimi ve izleyici onayına bağımlılığıdır; influencerlar içerik stratejilerini takipçi geri bildirimleri ve platform algoritmalarına göre uyarlayarak görünürlüklerini sürdürüyorlar. İkinci tema otantikliğin performatif dönüşümüdür; samimiyet iddiaları planlı anlatılar ve kontrollü açıklıklarla tesis edilirken, bu söylem aynı zamanda bir pazarlama aracı olarak işlev görmektedir. Üçüncü tema ise estetik ve ticarileşmenin kesişmesidir: görsel düzenlemeler, renk paletleri, mekân seçimi ve dramaturji, benliği metalaştıran performans estetiğini üretmektedir. Bu çalışma ayrıca literatürdeki kimlik, gösteri ve performans teorilerini Goffman'dan Bourdieu'ya kadar referans alarak dijital kimlik üretimini teorik bir çerçeve içine yerleştirir. Sonuç olarak, influencer iletişimi çağdaş toplumda kimliğin, estetiğin ve ekonomik çıkarların kesiştiği karmaşık bir alan olarak değerlendirilmelidir; hem yaratıcı potansiyeli desteklemek hem de etik dışı ticarileşme ve manipülasyon risklerini sınırlamak için çok paydaşlı müdahaleler gereklidir.

Anahtar kelimeler: Influencer, dijital kimlik, otantiklik, görünürlük ekonomisi, performatif iletişim, dijital kültür, sosyal medya

ABSTRACT

The digital media revolution of the twenty-first century has not only accelerated communication practices but fundamentally transformed how individuals construct, present, and monetize their identities. One of the most salient manifestations of this change is influencer culture. Centered on social media platforms, influencer culture converts identity production into a communicative performance through specific linguistic, visual, and interactional codes used by influencers when engaging with audiences. This study provides an in-depth examination of identity construction, performance aesthetics, and the visibility economy within influencer culture. Central research questions include: How do influencers' linguistic choices and visual compositions shape audience perceptions? By what strategic processes does the discourse of authenticity become marketable?

How does the visibility economy structure identity production and intersect with cultural norms? Methodologically, the research employs qualitative content analysis. A purposive sample of twenty micro- and macro-influencers was selected across Instagram, TikTok, and YouTube, representing categories such as fashion, lifestyle, education, activism, and political commentary. Materials analyzed span a two-year period and include posts, stories, short-form videos, sponsored content, and engagement metrics. Analytical approaches combined discourse analysis, visual semiotics, and thematic coding focused on interaction dynamics. Findings organize around three main themes. First, identity is continually reproduced through audience validation; influencers calibrate content strategies in response to follower feedback and algorithmic affordances to optimize visibility and social acceptance. Second, authenticity discourse functions as a performative device; claims to spontaneity and intimacy are frequently orchestrated through curated narratives, staged disclosures, and carefully designed aesthetics that produce a sense of closeness and trust among audiences.

Third, performance aesthetics and commodification intersect: visual editing, color palettes, staging, and narrative dramaturgy transform the self into a marketable asset. The study situates its analysis within theoretical frameworks of identity and performance (from Goffman's dramaturgical metaphor to Bourdieu's cultural capital), offering a nuanced conceptualization of digital identity politics. Ultimately, influencer communication must be understood as a complex arena where identity, aesthetics, and market logic co-produce mediated selves; multi-stakeholder interventions are required to foster creative expression while safeguarding ethical norms and public trust.

Keywords: Influencer, digital identity, authenticity, visibility economy, performative communication, digital culture, social media

**SPOR HUKUKUNA ÖZGÜ BİR HUKUKA UYGUNLUK SEBEBİ: ZARARI GÖZE
ALARAK KATILMA
A LAW COMPLIANCE REASON SPECIFIC TO SPORTS LAW: PARTICIPATION
WITH ACCEPTANCE OF RISK**

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ÖZET

Spor müsabakalarında ölüme ve yaralanmaya sebep olan fiiller ortaya çıkabilir. Söz konusu fiilin hukuka aykırı olduğu hallerde, hukuka aykırı fiili gerçekleştiren kişi, ortaya çıkan zararlardan ötürü haksız fiil kuralları çerçevesinde sorumlu olacaktır. Ancak bir kişinin haksız fiil kuralları çerçevesinde sorumlu olabilmesi için ilgili fiil bakımından herhangi bir hukuka uygunluk sebebinin bulunmaması gerekir. Spor müsabakaları bakımından akla ilk gelen hukuka uygunluk sebebi, mağdurun rızasıdır. Ancak bu kavram, spor müsabakalarında zararlı sonuca yol açan fiillerin hukuka uygun olduğunun kabulü için yetersiz kalmaktadır. Nitekim çok ağır derecede yaralanma veya ölüm sonucu için verilen rıza, geçerli değildir. Bu noktada spor müsabakalarına katılan kişilerin, katıldığı müsabakadan doğabilecek yaralanmaları ve benzer sonuçları göze aldıkları varsayılmakta ve “zararı göze alarak katılma” spor hukukuna özgü bir hukuka uygunluk sebebi olarak kabul edilmektedir. Ancak “zararı göze alarak katılmanın” hukuka uygunluk sebebi olarak kabul edilebilmesi için üç önemli unsurun bir arada bulunması gerekir. Bunlardan ilki, kişinin müsabakadan doğacak zararları göze alarak müsabakaya katılmış olmasıdır. Spor hukukuna özgü bu hukuka uygunluk sebebinin diğer şartı, zarara sebep olan fiilin müsabaka kurallarına uygun olması gerekliliğidir. Üçüncü ve son şart ise, zararın ortaya çıktığı müsabakanın gerçekten spor kavramı içerisinde yer almasıdır. Söz konusu şartlar kümülatif olarak sağlandığı takdirde, müsabakada fiilileriyle zarara sebep olan kişilerin, tazminat sorumluluğundan bahsedilemeyecektir.

Anahtar Kelimeler: Spor, Spor Müsabakası, Haksız Fiil, Hukuka Uygunluk Sebebi, Mağdurun Rızası, Zararı Göze Alarak Katılma.

ABSTRACT

Acts causing death or injury may occur during sporting competitions. Where such acts are unlawful, the person committing the unlawful act shall be liable under the rules governing tort for the resulting damages. However, for a person to be liable under the rules governing tort, there must be no law compliance reason for the act in question. The first law compliance reason that comes to mind in relation to sporting competitions is the consent of the victim. However, this concept is insufficient to accept that acts leading to harmful consequences in sporting competitions are lawful. Indeed, consent given for the purpose of causing grievous bodily harm or death is invalid. At this point, it is assumed that individuals participating in sporting competitions accept the risk of injury and similar consequences arising from the competition in which they participate, and ‘participation with acceptance of risk’ is considered a reason for law compliance with the law specific to sports law. However, for ‘participation with acceptance of risk’ to be accepted as a law compliance reason, three important elements must be present simultaneously. The first of these is that the person has participated in the competition, accepting the risks of injury arising from the competition. Another condition for this law compliance reason specific to sports law is that the act causing the damage must be in

accordance with the rules of the competition. The third and final condition is that the competition in which the damage occurred must genuinely fall within the concept of sport. Provided that the aforementioned conditions are cumulatively met, persons who cause damage through their actions in the competition shall not be liable for compensation.

Keywords: Sport, Sporting Competition, Tort, Law Compliance Reason, Consent of the Victim, Participation with Acceptance of Risk

MAHKEME KARARI İLE MAL AYRILIĞINA GEÇİŞ VE HUKUKİ SONUÇLARI Transition to separate property by court order and its legal consequences

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ÖZET

Evlilik birlikteliği ile eşlerin ekonomik hayatları etkilenmektedir. Kanun koyucu tarafından edinilmiş mallara katılma, paylaşımlı mal ayrılığı, mal ortaklığı ve mal ayrılığı rejimlerinden birini seçerek eşlere ekonomik etkilenmenin oranını belirleme imkânı sağlanmıştır. Ancak sağlanan bu imkân sınırsız olmayıp eşler yalnızca Türk Medeni Kanun'da düzenlenmiş olan dört mal rejiminden birini belirlenen sınırlar çerçevesinde tercih edebileceklerdir. Eşler noterde düzenleme veya onaylama şekilde mal rejimi sözleşmesi yapabileceklerdir. Ayrıca nişanlılara da evlilik tarihinden itibaren geçerli olmak üzere nikah başvurusu sırasında mal rejimini seçme imkânı tanınmıştır. Ancak eşlere seçme zorunluluğu getirilmemiştir. Eski Medeni Kanun'u döneminde yasal mal rejimi mal ayrılığı rejimi iken 01.01.2002 tarihinde yürürlüğe giren Türk Medeni Kanunu ile yasal mal rejimi olarak Edinilmiş Mallara Katılma Rejimi tercih edilmiştir. Kanun koyucu evlilik birlikteliğini koruma amacı ile bazı durumlarda kendiliğinden ya da hâkimin müdahalesi ile mevcut mal rejiminden mal ayrılığına geçişi düzenlemiştir. Eşlerin ortak iradesi dışında gerçekleşen bu duruma kanunda olağanüstü mal rejimi adı verilmiştir. Türk Medeni Kanunu madde 206 uyarınca eşlerden birinin istemiyle, haklı sebebin bulunması halinde mal ayrılığına geçiş kararı verilebilecektir. 210. Madde ile zarar görme ihtimali bulunan alacaklılara da mal ayrılığına geçiş için talepte bulunma imkânı tanınmıştır. Ayrıca eşlerden birinin iflas etmesi halinde 209. Madde uyarınca kendiliğinden mal ayrılığı rejimine geçilecektir. Birlikte yaşamaya ara verildiği, boşanma ya da ayrılık davası sırasında da mal ayrılığına geçiş kararı verilebilmektedir. Olağanüstü mal rejimi eşlerin ve üçüncü kişilerin menfaat dengesini koruması açısından önemli bir düzenlemedir.

Anahtar Kelimeler: Mal Rejiminin Tasfiyesi, Mal Ayrılığına Dönüşme, Olağanüstü Mal Rejimi, Hakim Müdahalesi, TMK m. 206-212.

ABSTRACT

The economic life of the spouses is affected by the marriage union. By choosing one of the regimes of participation in goods acquired by the legislator, separation of shared goods, partnership of goods and separation of goods, spouses were given the opportunity to determine the rate of economic impact. However, this opportunity is not unlimited and the spouses can only choose one of the four property regimes regulated in the Turkish Civil Code within the specified limits. The spouses can make a property regime agreement at a notary public in a way that is either drawn up or approved. In addition, fiancées have also been given the opportunity to choose the property regime during the marriage application, which is valid from the date of marriage. However, there is no obligation to choose spouses. While the legal property regime in the old Civil Code period was the separate property regime, the Acquired Property Participation Regime was chosen as the legal property regime with the Turkish Civil Code that came into force on 01.01.2002.

In order to protect the marital union, the legislator has regulated the transition from the existing property regime to separate property in some cases, either spontaneously or with the intervention of the judge. This situation, which occurs without the joint will of the spouses, is called an extraordinary property regime in the law. Pursuant to Article 206 of the Turkish Civil Code, a decision to switch to separate property can be made upon the request of one of the spouses, if there is a valid reason. Article 210. also provides the opportunity for creditors who may be at risk to request a switch to separate property. In addition, if one of the spouses becomes bankrupt, 209. According to the article, the spontaneous property separation regime will be switched on. A decision to transfer to separation of property may also be made during a Decoupling of cohabitation, divorce or separation proceedings. The extraordinary property regime is an important regulation in terms of protecting the balance of interests of the spouses and third parties.

Keywords: Liquidation of Property Regimes, Transformation into Separation of Property, Extraordinary Property Regime, Judicial Intervention, TCC Articles 206–212.

**YÜKSEK BASINÇLI DÖKÜM MAKİNELERİNDE ÜRETİMİ
GERÇEKLEŞTİRİLECEK OLAN DRUM SUPPORT PARÇALARININ
ÜRETİMİNİN SAĞLANABİLMESİ İÇİN ÇAPAK ALMA APARATININ
GELİŞTİRİLEBİLMESİ**

DEVELOPMENT OF A DEBURRING FIXTURE FOR THE PRODUCTION OF DRUM
SUPPORT COMPONENTS MANUFACTURED ON HIGH-PRESSURE DIE CASTING
MACHINES

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ÖZET

Yüksek basınçlı döküm, ergimiş metalin kalıp boşluğuna basınç altında doldurulmasıyla gerçekleştirilen bir imalat sürecidir. Bu proses üç ana aşamadan oluşur: ilk aşamada metal kovani doldurur, ikinci aşamada yolluktan geçerek kalıba yönlendirilir, üçüncü aşamada ise kalıp tamamen dolduğunda yüksek basınç uygulanır. Katılma tamamlandıktan sonra kalıp açılır ve parça çıkarılır.

Döküm sonrası, parça üzerindeki yolluk fazlalıkları trim işlemi ile alınır. Ardından parçanın mil kısmında kalan çapakların temizlenmesi için çapak alma aparatları kullanılır. Bu aşama, parçanın yüzey kalitesi ve müşteri onayı açısından kritik öneme sahiptir.

Üretim süreci genel olarak robotların pimleri yerleştirip döküm işlemini başlatması, parçayı alması, soğutma ve trim işlemlerinin ardından döngünün tekrarlanması şeklinde otomatik bir sistemle yürütülmektedir.

Yapılan çalışmalar kapsamında, bu proses için çeşitli çapak alma üniteleri tasarlanmıştır. İlk ünite manuel olarak çalışmakta ve parça el ile döndürülerek çapak alınmaktaydı; ancak bu sistem mil yüzeyinde çizilmelere neden olmuştur. İkinci ünite çizilmeyi önlemek için elmas kısmı hareketli hale getirilmiş olsa da, operatör kaynaklı farklı sıkma kuvvetleri nedeniyle yine çizilmeler gözlenmiştir.

Bu sorunlar sonucunda, operatörden bağımsız, tamamen otomatik bir çapak alma ünitesi geliştirilmesine karar verilmiştir. Yeni tasarımda parça sıkıştırma işlemi pnömatik pistonla, döndürme işlemi motorla, elmas hareketi ise ayrı bir pistonla sağlanacaktır. Tasarım tamamlandıktan sonra üretim ve demo denemeleri ile sistemin doğruluğu, verimliliği ve kullanılabilirliği test edilecektir.

Anahtar Kelimeler: Çapak Alma Prosesi, Seri Üretim, İnsan İşçiliklerinin Azaltılması, Ürün Kalite ve Kapasite Artışı, Hurda Oranlarının Azaltılması

ABSTRACT

High-pressure die casting is a manufacturing process in which molten metal is injected into a mold cavity under pressure. The process consists of three main stages. In the first stage, the molten metal fills the sleeve; in the second stage, it flows through the runner system into the mold; and in the third stage, once the cavity is completely filled, high pressure is applied until solidification occurs. After solidification, the mold opens and the part is removed.

Following the casting process, the excess material at the runners is removed through a trimming operation, leaving the part with a burr formation. Afterwards, deburring apparatuses are used to clean the burrs remaining on the shaft area of the part. This step is crucial for ensuring surface quality and meeting customer approval requirements.

The overall production process is carried out automatically: robots place pins into the mold, initiate the casting process, remove the part, perform cooling, feed the trim machine, and repeat the cycle continuously until production stops.

Within this study, several deburring unit designs were developed to achieve the most rigid and efficient removal of burrs. The first unit operated manually — the part was placed into the fixture and rotated by hand using a diamond tool — but this caused surface scratches on the shaft, which are unacceptable for customer-approved components. In the second unit, the diamond tool was kept separate during part placement to prevent scratching, and then manually brought closer using a lever mechanism. However, varying operator force again led to scratching issues, making the unit unsuitable for the process.

As a result, it was determined that a fully automatic deburring unit, independent of operator influence, was required. In the new design, part clamping will be performed using a pneumatic piston, rotation will be driven by a motor, and diamond movement will be controlled by another pneumatic piston, achieving a fully automated system. After the design phase, the unit will be produced and tested through demo deburring trials to verify its accuracy, efficiency, and usability.

Key Words: Deburring Process, Mass Production, Reduction of Manual Labor, Increase in Product Quality and Production Capacity, Reduction of Scrap Rates

**KOZMETİK ÜRÜNLERİNDE KORUYUCU OLARAK KULLANILAN
ETİLHEKSİLGLİSERİN SENTEZİ VE KARAKTERİZASYONU
SYNTHESIS AND CHARACTERISATION OF ETHYLHEXYLGLYCERIN
USED AS A PRESERVATIVE IN COSMETIC PRODUCTS**

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ÖZET

Temizlik ve kozmetik ürünlerinde koruyucular, ürünlerin formülasyon bütünlüğünü korumak ve mikrobiyal kontaminasyonu önlemek için hayati öneme sahiptir. Bu bileşenler, özellikle su bazlı ürünlerin raf ömrünü uzatır ve kullanıcı sağlığı açısından hijyenik kullanım sağlar. Geleneksel koruyucuların (örneğin parabenler) hormon benzeri etkiler göstererek insan sağlığı ve endokrin sistemi üzerindeki potansiyel olumsuz etkileri, üreticileri güvenli ve çok fonksiyonlu alternatiflerin geliştirilmesine yönlendirmiştir. Ayrıca, kimyasal koruyucuların çevreye ve ekosistemlere zarar vermemesi için sürdürülebilir olması ve çevreci yaklaşımlar ile sentezlenmesi gerekliliği büyük önem taşımaktadır. Bu bağlamda, regülatif kısıtlamalar nedeniyle kullanımı yaygınlaşan, kritik bir bileşen olan Etilheksilgliserin (EHG), gliseril monoeter yapısıyla öne çıkmaktadır. EHG'nin koruyucu fonksiyonu, sadece geniş spektrumlu antimikrobiyal ve antifungal aktivitesinden değil, aynı zamanda çok fonksiyonlu yapısından ileri gelir. Özellikle fenoksietanol gibi geleneksel koruyucuların etkinliğini artıran güçlü bir sinerjist olarak işlev görmesi, formülasyonlardaki koruyucu miktarının azaltılmasına ve maliyet etkinliğine olanak tanır. Ayrıca, EHG'nin amfoterik yapısı, bakteriyel hücre zarlarının yüzey gerilimini düşürerek antimikrobiyal etkiyi derinleştirir.

Bu doğrultuda, EHG gibi çok fonksiyonlu bir bileşenin yurt içi üretimi için, yerli kaynaklarla tekrarlanabilir, maliyet etkin ve endüstriyel ölçekte uygulanabilir optimal sentez koşullarının belirlenmesi temel amaç olmuştur. Kapsamlı bir reaksiyon optimizasyonu yürütülmüştür. Çalışmanın başlangıcında, Epiklorohidrin ve 2-Etilheksanol kullanılarak geleneksel Klorhidrin yolu stratejisi denenmiş, ancak bu yolun verimsiz olduğu ve hedeflenen ürüne ulaşmada zorluklar yaşandığı saptanmıştır. Bu durum üzerine metodolojik bir değişikliğe gidilmiş ve başarı, eterleşme ve ardından hidroliz adımlarını içeren baz katalizli bir mekanizmanın uygulanmasıyla sağlanmıştır. Reaksiyon verimini ve seçiciliğini artırmak amacıyla kritik reaktifler kullanılmıştır. Optimal koşullar, çift fazlı sistemlerde reaksiyon hızını maksimize eden Faz Transfer Katalizörü (PTC) ve uygun bazik reaktifler kullanılarak belirlenmiştir. Geliştirilen bu optimal sentez yöntemi ile EHG başarıyla elde edilmiş, reaksiyon takibi TLC ile yapılmış ve sentezlenen ürünün yapısal karakterizasyonu FT-IR analizleri ile doğrulanmıştır.

Anahtar Kelimeler: Etilheksilgliserin, Karakterizasyon, Kozmetik, Koruyucu, Sentez

ABSTRACT

Preservatives in cleaning and cosmetic products are vital for maintaining product formulation integrity and preventing microbial contamination. These ingredients extend the shelf life of water-based products and ensure hygienic use in terms of user health. The potential adverse effects of traditional preservatives (e.g., parabens) on human health and the endocrine system have led manufacturers to develop safe and multifunctional alternatives due to their hormone-like effects. To avoid harming the environment and ecosystems, chemical preservatives must be sustainable and synthesized using environmentally friendly approaches. In this context, Ethylhexylglycerin (EHG), a critical component whose use has become widespread due to regulatory restrictions, stands out with its glyceryl monoether structure. EHG's preservative function stems not only from its broad-spectrum antimicrobial and antifungal activity but also from its multifunctional structure. In particular, its role as a powerful synergist that enhances the efficacy of traditional preservatives, such as phenoxyethanol, allows for a reduction in the amount of preservative in formulations and cost-effectiveness. Furthermore, the amphoteric structure of EHG deepens the antimicrobial effect by reducing the surface tension of the bacterial cell membrane.

In this context, the primary objective has been to determine the optimal synthesis conditions that are reproducible, cost-effective, and applicable on an industrial scale using domestic resources for the domestic production of a multifunctional compound such as EHG. A comprehensive reaction optimization was performed. The traditional chlorohydrin route strategy using epichlorohydrin and 2-ethylhexanol was attempted at the outset of the study; however, this route was inefficient and presented difficulties in achieving the target product. A methodological change was made, and a base-catalyzed mechanism involving etherification followed by hydrolysis steps was successfully implemented. Critical reagents were employed to enhance the reaction yield and selectivity. The optimal conditions were determined using PTC, which maximizes the reaction rate in two-phase systems, and suitable basic reagents. Using the developed optimal synthesis method, EHG was successfully obtained. The reaction was monitored by TLC, and the structural characterization of the synthesized product was confirmed by FTIR analysis.

Keywords: Characterization, Cosmetics, Ethylhexylglycerin, Preservative, Synthesis

GÖNÜLLÜ ÇOCUKSUZLUK: KADINLARIN SEÇİMİ VE TOPLUMUN TEPKİSİ **VOLUNTARY CHILDLESSNESS: WOMEN'S CHOICES AND SOCIAL REACTIONS**

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ÖZET

Gönüllü çocuksuzluk, bireylerin herhangi bir tıbbi, biyolojik veya fizyolojik zorunluluk olmaksızın bilinçli ve isteyerek çocuk sahibi olmamayı tercih etmeleri olarak tanımlanmaktadır. Bu tercih, bireylerin yaşam biçimlerini ve sosyal ilişkilerini yeniden tanımlamalarına olanak sağlayan önemli bir karardır.

Bu çalışma, gönüllü çocuksuzluk kararını etkileyen sosyokültürel, psikolojik ve ekonomik faktörleri incelemeyi; ayrıca kadınların verdikleri karar doğrultusunda yaşadıkları toplumsal baskı ve damgalanma süreçlerini literatür ışığında değerlendirmeyi amaçlamaktadır. Literatürde, gönüllü çocuksuzluğu tercih eden kadınların kararlarını etkileyen faktörler arasında kişisel benlik arayışı, kariyer hedefleri, özgür hareket etme isteği, ebeveynlik sorumluluklarından kaçınma, ekonomik belirsizlik ve partner uyumsuzluğu öne çıkmaktadır. Günümüzde değişen değer sistemleriyle birlikte gönüllü çocuksuzluk oranlarında artış eğilimi gözlenmektedir.

Literatür taraması kapsamında, “gönüllü çocuksuzluk”, “toplumsal tepki”, “damgalanma” ve “kadın” anahtar kelimeleri kullanılarak Google Akademik, PubMed, Dergipark, TR Dizin, EBSCO, Asian Woman, Sage Journals, Science Direct veri tabanlarından ulusal ve uluslararası makaleler incelenmiştir.

Araştırmalar, çocuk sahibi olmayı normatif bir beklenti olarak gören kültürel yapılar çerçevesinde, gönüllü çocuksuz bireylerin, özellikle kadınların, “eksik”, “bencil”, “toplumsal rollerini yerine getirmeyen” veya “normal dışı” olarak etiketlenbildiğini göstermektedir. Bu etiketlemeler, iş yaşamında, aile ortamında ve sosyal çevrede çeşitli psikolojik baskılara yol açabilmektedir. Ancak yapılan çalışmalar, gönüllü çocuksuzluğu tercih eden kadınların yaşam deneyimlerinin ebeveyn olan bireylerden anlamlı bir şekilde farklı olmadığını; bu kadınların kararlarını kendi değerleri ve yaşam biçimleri doğrultusunda tutarlı bir şekilde verdiklerini ve çoğu zaman pişmanlık duymadıklarını ortaya koymaktadır.

Sonuç olarak, gönüllü çocuksuzluk; bireysel özgürlük, toplumsal cinsiyet rolleri, normatif beklentiler ve çevresel baskı ile damgalanmanın kesişiminde yer alan, sosyolojik açıdan giderek önem kazanan ve toplumlarda görülme oranı artan bir olgudur. Bu çalışma, konu ile ilgili farkındalığın artırılmasına ve eğitim programlarının geliştirilmesine katkı sağlayabilir.

Anahtar Kelimeler: Gönüllü Çocuksuzluk, Damgalanma, Toplumsal Tepki, Kadın

ABSTRACT

Voluntary childlessness is defined as individuals' conscious and deliberate choice not to have children in the absence of any medical, biological, or physiological necessity. This decision represents an important choice that allows individuals to redefine their lifestyles and social relationships.

This study aims to examine the sociocultural, psychological, and economic factors influencing the decision of voluntary childlessness, as well as to evaluate, in light of the literature, the social pressure and stigmatization processes experienced by women in accordance with their decisions. According to the literature, factors affecting the decisions of women who choose voluntary childlessness include personal self-exploration, career goals, desire for freedom of movement, avoidance of parenting responsibilities, economic uncertainty, and partner incompatibility. With changing value systems today, there is an observable trend of increasing rates of voluntary childlessness. Within the scope of the literature review, national and international articles were examined using the keywords "voluntary childlessness," "social reaction," "stigmatization," and "women" in databases such as Google Scholar, PubMed, DergiPark, TR Dizin, EBSCO, Asian Woman, Sage Journals, and ScienceDirect. Research shows that within cultural structures where having children is seen as a normative expectation, voluntarily childless individuals—especially women—can be labeled as "incomplete," "selfish," "not fulfilling their social roles," or "abnormal." Such labeling may lead to various psychological pressures in professional life, family settings, and social environments. However, studies indicate that women who choose voluntary childlessness do not differ significantly in life satisfaction compared to parents; they make their decisions consistently in line with their own values and lifestyles, and in most cases, they do not experience regret.

In conclusion, voluntary childlessness is an increasingly important sociological phenomenon, situated at the intersection of individual freedom, gender roles, normative expectations, and environmental pressure and stigmatization. This study may contribute to raising awareness on the topic and to the development of educational programs.

Keywords: Voluntary Childlessness, Stigmatization, Social Reaction, Women

**THE DEMOCRATIC PRECEDENT OF 1918–1921: THE FIRST GEORGIAN
REPUBLIC AND THE IDEOLOGICAL FOUNDATIONS OF EUROPEAN
INTEGRATION**

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Abstract

This study examines the brief yet pivotal existence of the First Democratic Republic of Georgia (1918-1921) and its enduring legacy in the nation's political consciousness. It posits that while the republic's tangible institutional impact was severed by Soviet annexation, it persists as a powerful symbol of statehood, democratic aspiration, and national trauma. The analysis details the republic's remarkable, progressive achievements—including its adoption of a liberal constitution, the establishment of universal suffrage, and its secular, multi-party system—which distinguished it as a democratic pioneer in the post-Ottoman and post-Russian imperial space. However, the study also explores the republic's internal contradictions and vulnerabilities, such as the dominant-party tendencies of the ruling Social Democrats and its struggles with territorial conflicts and economic instability. Its forcible incorporation into the Soviet Union transformed this democratic experiment into a central element of Georgia's "memory politics." Drawing on expert interviews and historical analysis, the study demonstrates how the First Republic functions not as a direct institutional blueprint, but as a potent historical narrative. It is invoked to legitimize modern Euro-Atlantic aspirations, inspire democratic mobilization, and frame the ongoing struggle against contemporary Russian influence. Ultimately, the study establishes the First Republic as an essential foundational myth, whose legacy continues to shape Georgia's national identity and provide a historical benchmark for its political and democratic trajectory.

Keywords: Georgia, Democratic Republic of Georgia, Soviet Union, European Integration

DEMOCRATIC CONSOLIDATION OR EROSION? POLITICAL CHANGE AND SYSTEMIC POLARIZATION UNDER GEORGIAN DREAM

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Abstract

This study analyses Georgia's contested political trajectory under the Georgian Dream (GD) party, a period defined by significant constitutional reform, deepening democratic backsliding, and a complex reorientation of foreign policy. It argues that while the GD oversaw critical institutional modernization—most notably a pivotal transition from a presidential to a parliamentary system—this era has been equally characterized by state capture, acute polarization, and a divergence from its initial pro-European trajectory. The study details how the 2012 election, marking Georgia's first peaceful power transfer, initially signalled democratic consolidation. However, the subsequent decade witnessed the entrenchment of informal governance, notably under billionaire Bidzina Ivanishvili, leading the European Union to explicitly demand “de-oligarchization” as a precondition for membership candidacy.

The analysis further explores the GD's recalibration of foreign policy, balancing ambitious integration with the EU through the Association Agreement against a pragmatic, and often contentious, relationship with Russia. Despite achieving EU candidate status, progress has been hampered by systemic issues: a politicized judiciary, attacks on media freedom, and the violent repression of minorities. The study concludes that the Georgian Dream era represents a paradox: substantial technical and legislative alignment with Europe has occurred alongside a gradual erosion of democratic pluralism, revealing the limits of EU conditionality in the face of determined domestic resistance and a polarized political landscape.

Keywords: Georgia, Georgian Dream, European Union, Accession, Democratic Backsliding

**ENDÜSTRİYEL TASARIM EĞİTİMİNDE DİJİTAL ARAÇLARIN KULLANIMI VE
ETKİLERİNİN DEĞERLENDİRİLMESİ: ÖĞRENCİ DENEYİMLERİ ÜZERİNE
KARMA YÖNTEMLİ BİR ARAŞTIRMA**

**EVALUATION OF THE USE AND EFFECTS OF DIGITAL TOOLS IN INDUSTRIAL
DESIGN EDUCATION: A MIXED METHOD STUDY ON STUDENT EXPERIENCES**

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ÖZET

Endüstriyel tasarım eğitimi teknoloji ile iç içe yürütülmektedir ve bu eğitim sisteminde teknolojik gelişmelerin oynadığı rol çok kritiktir. Teknolojinin hızla geliştiği bu süreçte eğitim ortamlarında güncel üç boyutlu modelleme, iki boyutlu grafik tasarım, artırılmış gerçeklik vb. araçların yanında yapay zekâ gibi farklı araçlar sıkça kullanılmaya başlanmıştır. Teknolojik dönüşüm sürecinin öğrenci deneyimleri üzerindeki etkilerini anlamak oldukça önemlidir. Bu çalışma, Türkiye’deki endüstriyel tasarım eğitiminde dijital araçların kullanım düzeylerini, endüstriyel tasarım öğrencilerinin deneyimlerini ve alışkanlıklarını incelemek amacıyla karma yöntem kullanılarak gerçekleştirilmiştir. Ankara’daki iki farklı üniversitede öğrenim görmekte olan çeşitli seviyelerdeki endüstriyel tasarım bölümü öğrencilerine çevrim içi ve yüz yüze anketler uygulanarak nitel ve nicel veriler toplanmıştır. Anket çalışmasında öğrencilerin dijital araçları kullanım sıklığı, tercih ettikleri yazılımlar, yaşadıkları zorluklar gibi temaların üzerinde durulmuştur. Bulgular, genel anlamda öğrencilerin dijital okuryazarlık düzeyinin yüksek olduğunu, dijital araçların tasarım eğitiminin yadsınamaz bir parçası olduğunu, öğrencilerin tasarım süreçlerini hızlandırdığını, kolaylaştırdığını ve yaratıcılığı belirli noktalarda desteklerken kullanım biçimine göre bazı noktalarda kısıtladığını, çoğunlukla öğrenme motivasyonunu artırdığını göstermektedir. Öte yandan bölümlerdeki donanım yetersizliği, güncel yazılımların yüksek maliyetleri, teknik sorunlar, öğrencilerin yaşadığı bilgi ve tecrübe eksikliği gibi sınırlılıklar öğrenme süreçlerine olumsuz etkilemektedir. Bu araştırma ile tüm dünyada olduğu gibi tasarım eğitiminde de yaşanan dijital dönüşüm sürecine ilişkin kapsamlı bir değerlendirme sunmak, geleceğe yönelik iyileştirme ve geliştirme önerileri vermek amaçlanmaktadır.

Anahtar Kelimeler: Endüstriyel Tasarım Eğitimi, Dijital Araçlar, Öğrenme Süreçleri, Tasarım Pedagojisi, Karma Yöntem, Yapay Zekâ

ABSTRACT

The education of industrial design is conducted in close conjunction with technology, and the role played by technological developments in this educational system is highly critical. In this rapidly evolving era, various tools such as artificial intelligence have become increasingly common in educational environments, alongside current three-dimensional modeling, two-dimensional graphic design, augmented reality etc. It is crucial to understand the effects of the technological transformation process on student experiences. This study was conducted using a mixed-methods approach to examine the usage levels of digital tools in industrial design education in Turkey and the experiences and habits of industrial design students. Qualitative

and quantitative data were collected through online and face-to-face surveys administered to industrial design students at various levels at two different universities in Ankara. The survey focused on themes such as the frequency of students' digital tool usage, their preferred software, and the difficulties they experience. The findings generally indicate that students' digital literacy level is high, that digital tools are an undeniable part of design education, that they accelerate and facilitate students' design processes, support creativity at certain points, but also restrict it at some points depending on the mode of use, and mostly increase learning motivation. On the other hand, limitations such as inadequate hardware in departments, the high cost of current software, technical issues, and students' lack of knowledge and experience negatively affect learning processes. This research aims to provide a comprehensive evaluation of the digital transformation process experienced in design education, as is the case globally, and to offer recommendations for future improvement and development.

Keywords: Industrial Design Education, Digital Tools, Learning Processes, Design Pedagogy, Mixed Methods, Artificial Intelligence

TÜRKİYE’DE SÜRDÜRÜLEBİLİRLİK GÜVENCE DENETİMİ: SÜRDÜRÜLEBİLİRLİK GÜVENCE DENETİMİ STANDARDI ÇERÇEVESİNDE BİR İNCELEME

SUSTAINABILITY ASSURANCE IN TURKEY: AN EXAMINATION WITHIN THE
FRAMEWORK OF THE SUSTAINABILITY ASSURANCE ENGAGEMENT STANDARD

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Küresel ölçekte çevresel, sosyal ve yönetim (ESG) sorumluluklarına yönelik ilginin artması, sürdürülebilirlik raporlamasını geleneksel finansal raporlamanın tamamlayıcı ve stratejik bir unsuru haline getirmiştir. Bu gelişmeyle birlikte, sürdürülebilirlik raporlarında yer alan bilgilerin güvenilirliği ve doğruluğu, paydaşlar için temel bir beklenti olarak öne çıkmış ve bağımsız sürdürülebilirlik güvencesine olan talebi önemli ölçüde artırmıştır.

Uluslararası sürdürülebilirlik güvencesi uygulamaları, başlıca üç temel çerçeve tarafından şekillendirilmiştir: Uluslararası Bağımsız Denetim ve Güvence Denetimi Standartları Kurulu (IAASB) tarafından yayımlanan *Tarihî Finansal Bilgilerin Bağımsız Denetimi veya Sınırlı Bağımsız Denetimi Dışındaki Güvence Denetimleri*, (GDS 3000 - Revize), *Sera Gazı Beyanlarına İlişkin Güvence Denetimleri İle Sürdürülebilirlik Güvence Denetimlerine İlişkin Uygulama Rehberi* (GDS 3410) (*GDS 3000’in Sürdürülebilirlik ve Diğer Genişletilmiş Dış Raporlama Güvence Denetimlerine Uygulanmasına İlişkin Zorunlu Olmayan Rehber*) ve *AA1000AS – Güvence Standardı*. Bu standartlar sürdürülebilirlik güvencesi dahil olmak üzere finansal olmayan güvence denetimlerine yönelik ilke bazlı bir yol haritası sunarak paydaş katılımı, önemlilik analizi ve kurumsal yanıt verme kabiliyetini hesap verilebilirlik odaklı bir yaklaşım geliştirmeyi hedeflemektedirler. Bu standartların yanı sıra, sürdürülebilirlik bilgilerine ilişkin güvence denetimlerinin kaliteli ve tutarlı bir şekilde yürütülmesini sağlamak amacıyla yeni bir güvence denetimi standardı oluşturmak üzere IAASB tarafından 2022 yılında bir proje başlatılmıştır. Bu proje SGDS 5000 adıyla IASSB tarafından yayımlanmıştır. Türkiye’de raporlamayla ilgili her türlü standardı hazırlama, yayımlama ve uygulamada yetkili kuruluş olan Kamu Gözetim Kurumu (KGK) ’da IASSB’ye paralel olarak çalışmalar tamamlanmış ve SGDS 5000 kamuoyu görüşüne açılmıştır.

Bu bağlamda çalışma genel olarak güvence denetimi standartlarını incelemiş ve SDGS 5000 özelinde bir değerlendirme yapmıştır. Bu çerçevede SGDS 5000’in, Türkiye’deki kurumsal sürdürülebilirlik raporlamasının şeffaflık, hesap verebilirlik ve karşılaştırılabilirlik düzeyini artırarak, uluslararası çerçevelerle uyum sağlayacağı ön görülmektedir. Bununla birlikte, etkin bir uygulama için kurumsal kapasitenin güçlendirilmesi, denetçilerin ESG alanındaki uzmanlıklarının geliştirilmesi ve paydaş farkındalığının artırılması gerekmektedir. Sonuç olarak, SGDS 5000’in sürdürülebilirlik raporlamasında tutarlı ve güvenilir bir güvence ortamı oluşturarak bu alandaki bilgi bütünlüğünü ve güvenilirliği güçlendirme potansiyeline sahip olduğu değerlendirilmektedir.

Anahtar Kelimeler: Sürdürülebilirlik Raporlaması, Güvence Denetimi, SDGS 5000

ABSTRACT

The growing global emphasis on environmental, social, and governance (ESG) responsibilities has transformed sustainability reporting into a complementary and strategic component of traditional financial reporting. Along with this development, the reliability and accuracy of

information disclosed in sustainability reports have become a fundamental expectation for stakeholders, thereby significantly increasing the demand for independent sustainability assurance.

International sustainability assurance practices have been shaped by three principal frameworks: *the International Standard on Assurance Engagements (ISAE 3000 - Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, *the International Standard on Assurance Engagements (ISAE 3410) – (Assurance Engagements on Greenhouse Gas Statements and its accompanying non-mandatory guidance on the application of ISAE 3000 to sustainability and other extended external reporting engagements)*, and *the AA1000 Assurance Standard (AA1000AS)*. These frameworks provide a principles-based roadmap for non-financial assurance engagements, including sustainability assurance, to promote an accountability-oriented approach that integrates stakeholder inclusiveness, materiality assessment, and organisational responsiveness.

In addition to these standards, the International Auditing and Assurance Standards Board (IAASB) launched a project in 2022 to establish a new sustainability assurance standard to ensure that such engagements are conducted with greater quality and consistency. This initiative resulted in the publication of the Sustainability Assurance Engagement Standard (SGDS 5000). In Turkey, the Public Oversight, Accounting and Auditing Standards Authority (KGK), which is responsible for preparing, issuing, and enforcing all reporting and assurance standards, has completed parallel work aligned with the IAASB and released ISAE 5000 for public consultation.

This study examines assurance engagement standards in general and provides an in-depth assessment of SGDS 5000 in particular. It is anticipated that SGDS 5000 will enhance the transparency, accountability, and comparability of corporate sustainability reporting in Turkey, thereby aligning it with international frameworks. However, effective implementation requires strengthening institutional capacity, enhancing auditors' expertise in ESG-related matters, and increasing stakeholder awareness. Ultimately, SGDS 5000 is expected to establish a consistent and reliable assurance environment, reinforcing the integrity and credibility of sustainability information in Turkey's reporting landscape.

Key Words: Sustainability Reporting, Assurance Engagement, ISAE 5000

THE CHOICE OF SURGICAL INTERVENTION IN THE TREATMENT OF ADHESION DISEASE

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Adhesion disease, characterized by the formation of fibrous bands between tissues and organs, remains a significant challenge in surgical practice. These adhesions often lead to chronic pain, infertility, and intestinal obstruction, considerably reducing patients' quality of life. The selection of an appropriate surgical approach plays a crucial role in both the treatment of existing adhesions and the prevention of their recurrence. This study analyzes the principles guiding the choice of surgical intervention in adhesion disease. It compares open surgery and minimally invasive techniques such as laparoscopy, emphasizing their respective advantages, limitations, and postoperative outcomes.

Materials and Methods: Between 2013 and 2025, a total of 107 patients diagnosed with adhesion disease were treated at the Department of Surgical Diseases II, Azerbaijan Medical University. The study population consisted of 67 females and 40 males. Postoperative adhesions developed following various surgical procedures, including appendectomy (34 patients), colorectal surgery (30), gynecological operations (26), gastric surgery (10), and hernia repair (7).

All patients initially received conservative therapy, which included nasogastric decompression, intravenous fluid and electrolyte replacement, and administration of anti-inflammatory, antibacterial, and antispasmodic medications. This treatment approach was successful in 84 patients. However, 23 patients who showed no improvement within 72 hours required surgical intervention. Of these, 14 patients underwent laparoscopic adhesiolysis under enteroclysis guidance, while 9 patients with a history of multiple laparotomies and significant bowel dilation (>4 cm) underwent open adhesiolysis. Following surgery, all patients received Wobenzym tablets for three months postoperatively. No recurrence of adhesive intestinal obstruction was recorded during the follow-up period.

Results: Laparoscopic adhesiolysis was found to be a less invasive and less traumatic surgical approach, significantly reducing the rate of adhesion recurrence and promoting faster postoperative recovery compared to open surgery. The most important factors in preventing adhesion formation were gentle tissue handling, meticulous hemostasis, and adequate abdominal drainage. Postoperative administration of Wobenzym contributed effectively to reducing the likelihood of new adhesion formation.

Conclusion: The study concludes that laparoscopic adhesiolysis, when feasible, offers superior recovery rates, less postoperative pain, and a lower risk of new adhesion formation compared to traditional open surgery. Nonetheless, open procedures remain indispensable in cases with dense or extensive adhesions. An evidence-based, patient-centered approach is essential to optimize surgical outcomes in adhesion disease management.

Keywords: Adhesion disease, laparoscopy, conservative treatment, postoperative adhesions

**DRUG-INDUCED CARDIOTOXICITY: MECHANISMS, DETECTION,
PHARMACOGENOMIC INSIGHTS, AND EMERGING THERAPEUTIC
STRATEGIES”**

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Abstract:

Drug-induced cardiotoxicity represents a significant clinical challenge and a major limitation in the use of various therapeutic agents, particularly anticancer drugs. Cardiotoxicity refers to structural or functional damage to the myocardium, conduction system, or cardiac vasculature resulting from drug exposure. Agents such as anthracyclines, trastuzumab, and tyrosine kinase inhibitors have markedly improved cancer survival but also contribute to acute, chronic, reversible, or irreversible cardiac injury. The underlying mechanisms include oxidative stress, mitochondrial dysfunction, endothelial damage, ion channel disruption, and genetically mediated susceptibility. These pathways lead to myocardial inflammation, fibrosis, contractile impairment, and life-threatening arrhythmias. Early detection is essential because traditional measures such as left ventricular ejection fraction (LVEF) often fail to identify subtle, preclinical damage. Modern diagnostic tools—including global longitudinal strain (GLS) via speckle-tracking echocardiography, high-sensitivity cardiac troponins, natriuretic peptides, advanced cardiac MRI, and ECG monitoring—enable more sensitive detection. Additionally, pharmacogenomics has advanced understanding of interindividual variability, identifying variants in genes such as CBR3, SLC28A3, and HER2 that influence susceptibility to drug-induced cardiac injury. Emerging technologies are transforming preclinical and clinical assessment. Human iPSC-derived cardiomyocytes replicate patient-specific cardiotoxic responses, supporting mechanistic insight and personalized risk profiling. Artificial intelligence and deep-learning frameworks integrate imaging, biomarker, and electrophysiological data to enhance early detection and risk prediction. Gene-editing tools, particularly CRISPR, facilitate functional validation of candidate variants and identification of novel cardioprotective strategies. Prevention and management rely on risk stratification, cardioprotective therapies (such as dexrazoxane, beta-blockers, ACE inhibitors, and statins), optimized drug formulations, and multidisciplinary care guided by contemporary ESC and ASCO recommendations. Precision cardio-oncology—integrating genomics, biomarkers, imaging, and computational modeling—represents the future of personalized prevention and treatment. Ultimately, drug-induced cardiotoxicity is increasingly recognized as a preventable complication, and advancements in science now enable improved patient safety while preserving therapeutic efficacy.

Keywords:

Drug-induced cardiotoxicity; Anthracyclines; Trastuzumab; Tyrosine kinase inhibitors; Oxidative stress; Mitochondrial dysfunction; Endothelial damage; QT prolongation;

MODELING AND PREDICTING THE IMPACTS OF CLIMATE VARIABILITY ON GROUNDWATER IN NORTHWEST BANGLADESH THROUGH MACHINE LEARNING APPROACHES

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Abstract

Groundwater is necessary for everyday life and the health of communities, but climate change is making its quality and quantity less stable. This research examines future groundwater level forecasts utilizing ARIMA and NNAR, a machine learning-based time series model. To evaluate the influence of climate variability on groundwater resource alterations in northwest Bangladesh. Two datasets were employed: (i) groundwater table time series gathered from the BWDB and (ii) annual temperature fluctuations and precipitation data sourced from the BMD for the period from January 1991 to December 2024. The ADF, PP, and KPSS tests were performed to assess the stationarity of the groundwater series after initial differencing. Seasonal fluctuations and the long-run upward trend are observed in the groundwater levels in Rajshahi, Bogura, and Ishurdi. In Rajshahi, ARIMA showed better performance (MAPE = 2.7%, RMSE = 0.71), whereas NNAR models performed better in Bogura (RMSE = 0.1, MAE = 0.06) and Ishurdi (RMSE = 0.09, MAE = 0.06) because they were able to capture nonlinear fluctuations better. Johansen cointegration revealed 2 vectors in Rajshahi and Ishurdi, and 3 in Bogura, indicating strong long-run links with climate variables, and with correlation methods, it was found that the groundwater of Bogura was correlated with temperature and wind speed ($r = 0.17$ and $r = 0.55$), but the groundwater of Rajshahi exhibited moderate correlations with temperature ($r = 0.196$) and wind speed ($r = 0.495$). The results facilitate the model choice that is station-specific and groundwater management under climate conditions. This study demonstrates the substantial influence of climate variability on groundwater levels, advocating for policies that include systematic groundwater extraction, the implementation of artificial recharge during monsoon seasons, and the integration of climate considerations into water resource planning to ensure long-term sustainability.

Keywords: Groundwater forecasting; Climate variability; Autoregressive Integrated Moving Average (ARIMA); Neural Network Autoregression (NNAR); Cointegration.

MEDICINE RESEARCH AND INNOVATION

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Abstract:

Medical research and innovation are transforming healthcare by introducing advanced technologies, personalized treatment approaches, and novel therapeutic strategies. Driven by rapid progress in biotechnology, artificial intelligence, and genomic science, modern medicine is shifting from conventional disease management to predictive, preventive, and precision-based interventions. Innovations such as CRISPR gene editing, mRNA vaccine platforms, and regenerative therapies using stem cells have redefined the possibilities for treating both genetic and acquired disorders. These breakthroughs enable targeted therapies with higher efficacy, fewer side effects, and improved patient outcomes.

Digital health technologies—including telemedicine, wearable sensors, and AI-powered diagnostic tools—are bridging gaps in healthcare accessibility and enabling continuous monitoring of patients. Machine learning algorithms now assist in early detection of diseases such as cancer and cardiovascular illnesses, while big data analytics enhances clinical decision-making. Furthermore, 3D bioprinting of tissues and organs, organ-on-a-chip systems, and nanomedicine are accelerating drug discovery and enabling personalized drug delivery systems. Despite the advancements, challenges such as high development costs, ethical concerns, data privacy issues, and regulatory barriers continue to influence the pace of innovation. Global disparities in healthcare access also raise the need for affordable and equitable solutions. Nevertheless, interdisciplinary collaborations between clinicians, researchers, engineers, and data scientists are paving the way for a new era in medicine.

Overall, medicine research and innovation are revolutionizing healthcare by creating safer, more effective, and highly personalized treatment modalities. With ongoing technological advancement and robust scientific exploration, the future of medicine holds immense potential to significantly enhance quality of life and address unmet medical needs across the world.

Keywords:

Medicine research, Medical innovation, Biotechnology, Artificial intelligence in healthcare, Precision medicine, Personalized treatment, Genomic science, CRISPR gene editing, Stem cell therapy, mRNA vaccines, Regenerative medicine, Nanomedicine, Telemedicine, Digital health, Wearable devices, AI diagnostics, Drug discovery, 3D bioprinting, Organ-on-a-chip, Clinical advancements, Healthcare technology, Biomedical engineering, Predictive medicine, Preventive healthcare, Therapeutic innovation, Healthcare accessibility.

ASSESSMENT OF THE PRODUCTION PERFORMANCE OF INDIAN MAJOR CARP ROHU (*LABEO ROHITA*) WITH TILAPIA (*OREOCHROMIS NILOTICUS*) ON CAGE CULTURE SYSTEM IN SOUTHERN BANGLADESH

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Abstract

The study was conducted over 90 days in the Barguna district of Bangladesh to assess the growth and production performance of Rohu (*Labeo rohita*) in cage culture with tilapia. The experiment was designed with three treatments namely T₁ (only tilapia-100%), T₂ (tilapia-80% and rohu-20%) and T₃ (tilapia-60% and rohu-40%) respectively each having three replications. The stocking density was 50/m³. The floating feed contained 30% protein supplied twice a day at the rate of 5-3% of their body weight. Water quality parameters were recorded every fifteen-day interval throughout the culture period. Water quality parameters were within the suitable range for fish culture. At the end of the culture period higher weight gain of Tilapia (257g) was recorded in T₃ followed by T₁(245g) and T₂(250g) and the lowest weight gain of Rohu (90.17g) was observed T₃. The survival rate of tilapia ranges from 94.2 to 96.20% and rohu from 90.15 to 90.50%. There were no significant differences (P>0.05) in the survival rate of tilapia and Rohu. The weight gain, % weight gain, and SGR of tilapia and rohu were found higher in T₂, followed by T₃, whereas tilapia showed higher growth in T₃ and followed by T₂ and T₁. Significantly higher (p>0.05) total production of fish was observed in T₁(122.46 kg), followed by T₂(111.16 kg) and T₃(98.463kg). The BCR was higher in T₁ (1.1), followed by T₂ (0.82) and T₃ (0.75). The result of the study revealed that the culture of Rohu with Tilapia in the cage is not suitable because the growth performance of Rohu was very poor. It was observed that during feeding Tilapia showed very aggressive behavior due to the presence of their sharp spine. As a result, Rohu was not able to intake a sufficient amount of feed. So, it is not recommended to culture Indian major carp rohu with tilapia in the cages.

Keywords: Tilapia, rohu, cage culture, production

**İŞBİRLİKLİ ÖĞRENME TEMELLİ BEDEN EĞİTİMİ DERSLERİNİN
ORTAÖĞRETİM ÖĞRENCİLERİNİN PROBLEM ÇÖZME BECERİLERİNE
ETKİSİ**

**THE EFFECT OF COOPERATIVE LEARNING-BASED PHYSICAL EDUCATION
COURSES ON SECONDARY SCHOOL STUDENTS' PROBLEM SOLVING SKILLS**

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ÖZET

Bu çalışma, işbirlikli öğrenme temelli beden eğitimi derslerinin ortaöğretim öğrencilerinin problem çözme becerileri üzerindeki etkisini nicel olarak sınamaktadır. Ön test–son test kontrol gruplu deneysel desen kullanılan araştırmada, Sivas’taki bir devlet lisesinde 52 öğrenci (deney n=26, kontrol n=26) yer almıştır. Deney grubunda öğretim, Johnson & Johnson’un beş ilkesine dayalı Learning Together, TGT ve Jigsaw teknikleriyle 10 hafta (haftada iki ders saati) yürütülmüş; kontrol grubunda aynı kazanımlar geleneksel yöntemle işlenmiştir. Veriler Çocuklar İçin Problem Çözme Envanteri (ÇPÇE) ile toplanmış; normallik sağlandığından bağımlı/bağımsız örneklem t-testleri uygulanmıştır ($\alpha=0.05$). Başlangıçta gruplar arasında anlamlı fark yoktur ($p>0.05$). Son testte deney grubu lehine toplam puanda ve alt boyutlarda (özgüven, özdenetim, kaçınma) anlamlı artış saptanmıştır; Cohen’s $d=0.52-0.62$ aralığındaki orta düzey etkiler, işbirlikli öğrenmenin problem çözme performansını ve ilişkili duyuşsal/sosyal boyutları güçlendirdiğini göstermektedir; kontrol grubundaki küçük artışlar anlamlı değildir. Sonuç olarak, işbirlikli öğrenme yaklaşımı beden eğitimi bağlamında bilişsel (strateji, karar verme), duyuşsal (özgüven, özdenetim) ve sosyal (işbirliği, sıra alma) kazanımları birlikte artırmaktadır. Uygulama önerisi (kısa): Ders planlarında grup temelli hedef/rol paylaşımı standartlaştırılmalı; akran geri bildirimi ve takım temelli oyunlaştırma düzenli kullanılmalı; süreç kısa döngülü biçimlendirici değerlendirme ile izlenmelidir. Kalabalık sınıflar için ise istasyon rotasyonu ve basit zaman–mekân düzenlemeleri uygulamayı kolaylaştırabilir. Bu çerçevede model, okul temelli uygulamalara doğrudan aktarılabilir nitelikte uygulanabilir tasarım ilkeleri sunmaktadır.

Anahtar Kelimeler: İşbirlikli Öğrenme, Beden Eğitimi, Problem Çözme Becerisi, Öğrenci Merkezli Öğretim, Ortaöğretim.

ABSTRACT

This study quantitatively tests the effect of cooperative learning–based physical education (PE) on secondary school students’ problem-solving skills. Using a pretest–posttest control-group experimental design, the sample comprised 52 students in a public high school in Sivas (experimental $n = 26$, control $n = 26$). Instruction in the experimental group followed Johnson & Johnson’s five principles and employed Learning Together, Team-Game-Tournament (TGT), and Jigsaw techniques over 10 weeks (two class hours per week), whereas the control group covered the same outcomes via traditional instruction. Data were collected with the Problem Solving Inventory for Children (PSIC); given that normality was satisfied, dependent and independent samples t-tests were conducted ($\alpha = .05$). At baseline, there were no significant differences between groups ($p > .05$). At posttest, the experimental group showed significant gains over the control group on the total score and the subscales of confidence, self-control, and avoidance. Effect sizes of Cohen’s $d = 0.52$ – 0.62 indicate moderate impacts, demonstrating that cooperative learning strengthens both problem-solving performance and related affective/social dimensions; the small improvements in the control group were not statistically significant. In conclusion, within the PE context, cooperative learning jointly enhances cognitive (strategy, decision-making), affective (self-confidence, self-regulation), and social (cooperation, turn-taking) outcomes. Practical recommendations (brief): standardize group-based goal and role assignment in lesson plans; implement peer feedback and team-based gamification on a regular basis; monitor progress through short-cycle formative assessment. For large classes, adopt station rotation and simple time–space arrangements to facilitate implementation. Taken together, the model offers actionable, school-transferable design principles for PE lesson planning and delivery.

Keywords: Cooperative Learning, Physical Education, Problem-Solving Skills, Student-Centered Instruction, Secondary Education.

ENHANCING LUNG CANCER CLASSIFICATION THROUGH ADVANCED DATA BALANCING TECHNIQUES

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Abstract

Class imbalance remains a major challenge in medical data analysis, particularly in lung cancer classification. This study extends previous research by evaluating and comparing three data balancing techniques—SMOTE, ADASYN, and Random Oversampling—on a lung cancer dataset with 283 positive and 38 negative samples. Various machine learning models, including Logistic Regression, Random Forest, and Support Vector Machines, were trained and tested before and after applying these techniques. Results show that SMOTE achieved the best overall performance, improving accuracy, precision, and AUC while reducing class bias. The optimized Logistic Regression model reached 98.15% accuracy and 99.92% AUC. These findings highlight the importance of effective data balancing methods for fair and accurate medical classification.

Keywords: Lung cancer, Class imbalance, SMOTE, Machine learning, Oversampling.

REDEFINING WORK AND WORKFORCE IN THE DIGITAL ERA: IMPACTS OF HYBRID WORK

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Abstract

Hybrid work has rapidly become one of the prominent work arrangements of the 21st century as it promotes flexibility and autonomy amplified by technology. Post-COVID-19, organizations adopted hybrid work as an experiment to ensure business continuity. Later organizations promoted hybrid work, stating it offers better flexibility and work-life balance, thereby forcing employees to adapt quickly to virtual environments. This transition redefined various dimensions of work, comprising work environment, communication patterns, workplace concepts, and employees' psycho-emotional experiences, largely due to altered socialization processes. Both organizations and the employees had to rapidly adopt a new work environment with features such as virtual teams, digital infrastructure, and digital overload. The paper examines key organizational and individual factors that influence work performance in a hybrid work environment. Drawing on broader research, the paper illustrates that previously organizations were defined by physical space, hierarchy, innovation, and human interaction. At the same time, currently, ICT and digitalization have diminished the importance of physical workplaces and have reshaped power relations, cultural practices, and organizational structure. The paper argues that the pandemic accelerated a shift toward hybrid and fully remote organizations, encouraging the redefinition of the work environment and organizational practices. It discusses the influence of hybrid work and identifies key factors that organizations should consider when determining best practices for hybrid work. Finally, it emphasizes the need for organizations to adopt a broader perspective that incorporates employee well-being and long-term organizational effects, and not just economic benefits, when shaping the future of work and the workforce.

Keywords- Hybrid work, work-life balance, employee well-being, virtual teams, digital overload

**SCRAP WASTE MANAGEMENT PRACTICES IN ATTINGAL MUNICIPALITY:
A SURVEY-BASED STUDY ON DEALERS, RESIDENTS, AND MUNICIPAL
AUTHORITIES**

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Abstract:

Scrap waste management plays a vital role in promoting resource recovery and reducing the environmental burden of urban solid waste. This study focuses on the evaluation of scrap waste management practices in Attingal Municipality, Kerala. A comprehensive survey was conducted among three key groups: scrap dealers operating within the municipality, residents living near scrap collection units, and officials of Attingal Municipality. The study aimed to understand the current status of scrap collection, segregation, storage, and recycling processes, along with assessing the environmental and social impacts on nearby communities. Data were collected through structured questionnaires and field observations. The findings revealed that although scrap dealers contribute significantly to material recovery and informal recycling, challenges such as inadequate infrastructure, improper waste handling, and lack of regular monitoring persist. Residents reported issues related to odour, noise, and vector nuisance from nearby scrap units. Municipal authorities expressed the need for improved coordination and policy implementation to strengthen the existing system. The study highlights the importance of integrating informal scrap dealers into formal waste management systems, promoting awareness among residents, and ensuring environmentally sustainable operations. Recommendations are provided to enhance the efficiency and sustainability of scrap waste management within Attingal Municipality.

Keywords: *Scrap Waste Management, Scrap dealers, Municipality*

**MORPHO-TAXONOMIC ACCOUNT AND HABITAT OF HERMIT CRABS
(CRUSTACEA: DECAPODA) ALONG THE CHATTOGRAM-COX'S BAZAR
COAST**

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ABSTRACT

Hermit crabs are common along tropical coasts but are often difficult to identify because many species share similar features. This study documented the hermit crab species found along the Chattogram-Cox's Bazar coast and described their key morphological traits and habitats. From January to February 2025, a total of 155 gastropod shells containing hermit crabs were collected. Basic environmental factors such as temperature, salinity, pH, dissolved oxygen and substrate type were also recorded. Morphological examination confirmed eleven species: *Clibanarius infraspinus*, *C. padavensis*, *C. longitarsus*, *C. arethusa*, *C. clibanarius*, *Diogenes planimanus*, *D. dubius*, *Coenobita violascens*, *C. rugosus*, *C. perlatus*, and *Pagurus japonicus*. Six of these species (*C. arethusa*, *D. planimanus*, *D. dubius*, *C. rugosus*, *C. perlatus* and *P. japonicus*) are new distribution records for Bangladesh. Detailed descriptions of diagnostic features, supported with photographic documentation, are provided for each species. Multivariate analyses showed that salinity and temperature mainly shaped species distribution. *Coenobita* and *Diogenes* species were more common in the high-salinity waters of St. Martin's Island, while *Clibanarius* species dominated estuarine and mangrove areas. Including previous reports, Bangladesh now has fifteen confirmed hermit crab species across four families and five genera. This study offers the first detailed species-level account for this region and supports ongoing efforts in marine biodiversity studies and marine resource management.

Key-words: Taxonomy, Identification, Distributed, Multivariate statistics, Documented

HIGH-PRECISION SONOGENETIC CONTROL OF ENGINEERED BACTERIA FOR SPATIOTEMPORAL CANCER IMMUNOTHERAPY

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Abstract

The efficacy of systemic cancer immunotherapy is frequently limited by the highly immunosuppressive tumor microenvironment (TME) and the lack of therapeutic specificity, leading to significant off-target toxicity. While tumor-colonizing bacteria offer inherent tumor-homing capacity, their therapeutic use is constrained by the need for non-invasive, spatiotemporally precise control over payload delivery within the tumor mass to prevent systemic side effects. To address this, I developed a novel platform, Sonogenetics-Engineered Microbial Immunotherapy (SEMI), utilizing a genetically attenuated strain of *Salmonella typhimurium* (ST), chosen for its preferential anaerobic colonization of solid tumors. The bacteria were engineered with a mechanically-sensitive synthetic gene circuit that integrates a promoter highly responsive to the mechanical stress (acoustic cavitation forces) generated by low-intensity focused ultrasound (LIFU). This circuit governs the inducible, on-demand expression and secretion of two synergistic immunomodulatory payloads: (1) the potent T-cell recruiting chemokine (CXCL10) to enhance immune infiltration, and (2) an extracellular matrix-degrading enzyme (Hyaluronidase) to significantly enhance drug penetration and TME remodeling. Following systemic administration and robust passive tumor colonization in various murine models, localized LIFU was applied. We demonstrated that a single, non-thermal dose of LIFU achieved a robust, >100-fold induction of the therapeutic gene circuit strictly within the targeted tumor volume, confirming the platform's high spatial specificity. The combined, localized expression of these payloads resulted in a 5-fold increase in the critical ratio of tumor-infiltrating cytotoxic T-lymphocytes (CTLs) to regulatory T-cells (Tregs) and a significant reduction in interstitial fluid pressure. Most importantly, this targeted intervention successfully initiated a potent systemic abscopal immune response, leading to the regression of untreated, distant tumors. The SEMI system establishes Sonogenetics as a highly-translatable modality for achieving on-demand, high-precision drug delivery *in vivo*, offering a powerful and versatile non-invasive approach for next-generation precision cancer treatment.

Keywords: Sonogenetics, Cancer Immunotherapy, Engineered Bacteria, Focused Ultrasound, Tumor Microenvironment, Abscopal Effect.

DOĞAL PERLİT AGREGASI İLE ÜRETİLEN BETONLARIN GERİLME-ŞEKİL
DEĞİŞTİRME DAVRANIŞININ DENEYSEL OLARAK İNCELENMESİ
EXPERIMENTAL INVESTIGATION OF STRESS-STRAIN BEHAVIOR OF
CONCRETES PRODUCED WITH NATURAL PERLITE AGGREGATE

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ÖZET

İnşaat sektörü, sürekli gelişen ve yenilikçi çözümler arayan dinamik bir endüstridir. Bu gelişim süreci, yapı malzemeleri ve yapım tekniklerinde çevre dostu ve sürdürülebilir yaklaşımların önemini giderek artırmaktadır. Beton üretiminde doğal perlit agregası gibi alternatif agregaların kullanılması, hem doğal kaynak tüketiminin sınırlandırılması hem de malzeme ve mekanik performans açısından çeşitli avantajlar sunması bakımından önem taşımaktadır. Bu çalışmada, beton üretiminde geleneksel taş agregası yerine hacimce %0, %30, %70 ve %100 oranlarında doğal perlit agregası kullanılmıştır. Üretilen numuneler, 28 günlük kür süresinin ardından tek eksenli basınç testine tabi tutulmuş; deney esnasında numunelerden alınan ölçümlerle gerilme–birim şekil değiştirme eğrileri oluşturulmuştur. Elde edilen sonuçlar, beton üretiminde ince perlit agregasının %30 ikame oranında kullanılmasının, iç kür etkisi ve iyileşen arayüz bölgesi (ITZ) sayesinde referans karışıma kıyasla basınç dayanımında artış sağladığını göstermektedir. Buna karşın, %70 ve %100 ikame oranlarında perlitin gözenekli yapısı ve genişleyen zayıf ITZ bölgesi nedeniyle basınç dayanımında belirgin azalmalar meydana gelmektedir. Gerilme–şekil değiştirme davranışı açısından değerlendirildiğinde, %30 perlit ikame oranında daha dengeli bir gerilme–şekil değiştirme eğrisi elde edilmekte; dayanım ile deformasyon kapasitesi birlikte korunmaktadır. Ancak %70 ve %100 perlit oranlarında, perlitin yüksek gözenekliliği ve zayıf ITZ sebebiyle betonun deformasyon kapasitesi ve sünekliği azalmış, kırılma artmıştır. Sonuç olarak, perlitli betonun gerilme–şekil değiştirme ilişkisi, optimum olarak belirlenen %30 ikame oranında hem dayanım hem de deformasyon kapasitesi açısından avantajlı bir davranış sergilemiştir.

Anahtar Kelimeler: Basınç dayanımı, doğal perlit agregası gerilme-birim şekil değiştirme ilişkisi, sürdürülebilirlik.

ABSTRACT

The construction industry is a dynamic industry constantly evolving and seeking innovative solutions. This development process increasingly emphasizes the importance of eco-friendly and sustainable approaches in building materials and construction techniques. The use of alternative aggregates, such as natural perlite aggregate, in concrete production is important both for limiting natural resource use and for various advantages in terms of material and mechanical performance. In this study, natural perlite aggregate was used in concrete production at 0%, 30%, 70%, and 100% by volume as a substitute of traditional stone aggregate. The produced samples were subjected to uniaxial compression tests after a 28-day curing period, and stress-strain curves resulted from using measurements taken from the samples during the test. The results shown that using fine perlite aggregate at a 30% replacement rate in

concrete production provides an increase in compressive strength compared to the reference concrete mix, due to the internal curing effect and improved interface tension zone (ITZ). However, at 70% and 100% replacement rates, compressive strength decreases significantly due to the porous structure of perlite and the expanded weak ITZ. When evaluated in terms of stress-strain behavior, a more balanced stress-strain curve is obtained at a 30% perlite replacement rate, while both strength and deformation capacity are keep. However, at 70% and 100% perlite ratios, the concrete's deformation capacity and ductility decreased and brittleness increased due to the high porosity and weak ITZ of perlite. Consequently, the stress-strain relationship of perlite concrete exhibits advantageous behavior in terms of both strength and deformation capacity at the optimum replacement rate of 30%.

Keywords: Compressive strength, natural perlite aggregate, stress-strain relationship, sustainability.

**OS NAVICULARE MORFOMETRİSİ MEDIAL AYAK KEMERİ İLE
İLİŞKİLİDİR? RADYOLOJİK BİR DEĞERLENDİRME**
DOES NAVICULAR BONE MORPHOMETRY DETERMINE MEDIAL FOOT ARCH?
A RADIOLOGICAL ASSESSMENT

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Dalı

ÖZET

Bu çalışma, os naviculare (ON)'nin morфометrik özellikleri ile medial ayak kemeri yüksekliği ve ayak tabanı patolojileri özellikle pes planus (PP) arasındaki ilişkinin radyolojik olarak değerlendirilmesini amaçlamaktadır.

2015–2025 yılları arasında ayak/ayak bileği ağrısı ile başvuran 240 bireye ait anteroposterior ve lateral ayak grafileri analiz edilmiştir. Lateral grafilerde calcaneal eğim açısı (CEA), talocalcaneal açı (TCA), Hibbs açısı, Meary açısı ve naviküler indeks (NVindeks); anteroposterior grafilerde ise talo-first metatarsal, talokalkaneal ve talonaviküler açılar ölçülmüştür. ON'ye ait genişlik, uzunluk ve mediale taşan segment morфометrisi kantitatif olarak değerlendirilmiştir. Ölçümlerin güvenilirliği, üç gözlemci arasındaki sınıf içi korelasyon katsayısı (ICC) ile test edilmiştir.

Tüm parametrelerde yüksek güvenilirlik saptanmış; özellikle Meary, CEA, NVg, NVindeks, NVu ve NVy ölçümlerinde ICC değerleri 0,98'in üzerinde bulunmuştur. Erkeklerde ayak uzunluğu anlamlı olarak daha yüksekken, ONg ve ONmg ölçümleri kadınlarda daha yüksek tespit edilmiştir. Taraflar arasında anlamlı fark görülmemiştir. Yaş ile ONu, ONmg ve ONmu arasında pozitif ilişki belirlenmiştir. CEA, TCA ve Hibbs açıları arasında güçlü korelasyon; ONy ile NVindeks arasında ise çok yüksek düzeyde pozitif ilişki ($r=0,921$; $p<0,001$) saptanmıştır. Dört referans ölçütüyle (CEA, Hibbs, NVindeks, TCA) yapılan ROC analizleri, ON morфометrisinin PP ayırt etme gücünün düşük olduğunu göstermiştir. NVu, yüksek özgüllüğüne karşın düşük duyarlılığı nedeniyle tanıyı yalnızca pozitif olduğunda desteklemekte, negatif durumlarda ise yeterli dışlama sağlamamaktadır.

Sonuç olarak ON morфометrisi, PP tanısında tek başına yeterli değildir; ayak arkının değerlendirilmesinde birden fazla radyolojik kriterin birlikte kullanılması daha güvenilir sonuçlar sunmaktadır.

Anahtar Kelimeler: Os Naviculare, Morфометri, Radyoloji

ABSTRACT

This study aimed to radiologically evaluate the relationship between the morphometric characteristics of the navicular bone (ON) and the height of the medial foot arch, as well as foot posture abnormalities, particularly pes planus (PP). A total of 240 anteroposterior and lateral foot radiographs obtained between 2015 and 2025 from individuals presenting with foot/ankle pain were analyzed. From lateral radiographs, calcaneal inclination angle (CEA), talocalcaneal angle (TCA), Hibbs angle, Meary angle, and navicular index (NVindex) were measured, while talo-first metatarsal, talocalcaneal, and talonavicular angles were measured from anteroposterior views. Morphometric parameters of the ON including width, length, and the

medially protruding segment were quantitatively assessed. Measurement reliability among three observers was evaluated using intraclass correlation coefficients (ICC).

High reliability was observed across all parameters, with ICC values exceeding 0.98 for Meary, CEA, NVg, NVindex, NVu, and NVy. While males exhibited significantly greater foot length, ONg and ONmg values were higher in females. No significant side-to-side differences were identified. Age showed a positive correlation with ONu, ONmg, and ONmu. Strong correlations were found among CEA, TCA, and Hibbs angles, and an exceptionally strong positive correlation was observed between ONy and NVindex ($r = 0.921$; $p < 0.001$). ROC analyses based on four reference standards (CEA, Hibbs, NVindex, TCA) demonstrated that linear ON measurements (NVg, NVu, NVmtu, NVmtg) have limited and clinically low diagnostic performance in distinguishing PP. Although NVu exhibited high specificity, its low sensitivity limits its utility to supporting diagnosis only when positive.

In conclusion, ON morphometry alone is insufficient for the diagnosis of PP. A multimodal radiological approach using multiple angular and index-based criteria provides a more accurate and clinically meaningful assessment of medial arch morphology.

Keywords: Navicular Bone, Morfometry, Radyology

FABRICATION OF Zr-MOF LOADED POLYMER MEMBRANE AND ITS POTENTIAL APPLICATION FOR GAS SEPARATION

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Abstract

Mixed Matrix Membranes (MMMs) can be proposed as an alternative to overcome the problem of low execution of conventional polymeric membranes in gas separation and allow them to maintain their processing advantages and affordability of generic roots in relation to the conventional membranes. In the current research, we are focused on the fabrication and characterization of Mixed Matrix Membranes (MMSs) using UiO-66, a highly stable Zr-based organic framework as a dispersed phase being rigid material in a polysulfone (PSF) polymeric network. The synthesized MMMs have been subjected to characterization to assess their structural integrity and gas separation performance. Obtained results revealed excellent compatibility between UiO-66 and the PSf matrix, with increasing MOF concentration leading to enhanced CO₂ selectivity by virtue of strong affinity of UiO-66 towards CO₂ molecules. Fabricated MMMs embedded with Zr-MOF demonstrated superior CO₂ permeability and selectivity under both mixed and pure gas conditions, highlighting their potential for efficient CO₂ separation. Furthermore, the viable commercial feasibility of these MMMs has been evaluated by investigating their performance at varying concentrations, with results compared to existing literature. This study underscores the novelty of UiO-66-loaded PSf membranes as a high-performance material for gas separation applications, particularly in carbon capture and storage processes.

Keywords: Mixed Matrix Membranes; UiO-66 Nanocrystals; CO₂ separation; Polysulfone

BLACK PHOSPHORENE: A FIRST-PRINCIPLES STUDY FOR NEXT-GENERATION ENERGY HARVESTING

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Abstract:

In this paper, we have employed Density Functional Theory to investigate the opto-electronic and thermoelectric properties of black phosphorene (BP), a new two-dimensional material. We found that BP is a semiconductor with a 0.84 eV direct band gap. Optical property calculation highlights the anisotropic nature of the material, with the armchair structure showing a high absorption coefficient of $3 \times 10^5 \text{ cm}^{-1}$ in the visible spectrum, while the zigzag structure shows an excellent absorption coefficient of as high as $15.6 \times 10^5 \text{ cm}^{-1}$ in the UV region. In addition, from the BoltzTraP simulation package, we found that BP shows a high Seebeck coefficient and high electrical conductivity, indicating its potential thermoelectric applications. These findings demonstrate that BP is a highly versatile 2D material with excellent prospects for emerging optoelectronic and thermoelectric applications.

Keywords: Black phosphorene, DFT, Optoelectronic Properties

THE ROLE OF WOMEN'S HANDICRAFTS IN ATTRACTING DOMESTIC TOURISTS IN AFGHANISTAN: A CASE STUDY OF BAMİYAN, GHAZNI, AND HERAT

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Abstract

Handicrafts, as part of cultural and artistic heritage, play a significant role in attracting tourists and contributing to the economic development of various regions. In Afghanistan—particularly in the provinces of Bamyan, Ghazni, and Herat—female artisans have made a remarkable contribution to preserving local culture and drawing the attention of domestic tourists through the creation of unique handicrafts. However, despite the high potential of these crafts in promoting tourism, limited research has explored the role of women in this sector.

This study aims to analyze the impact of women's handicrafts on attracting domestic tourists and to identify the main challenges they face. The research adopts a descriptive-analytical method with a field-based approach. Data were collected through questionnaires, interviews with female artisans and domestic tourists, as well as a review of relevant literature. The statistical population includes handicraft producers and visitors to the selected regions. Data analysis was conducted using both qualitative and quantitative methods to examine the relationship between women's handicrafts and domestic tourism.

The findings reveal that women's handicrafts—particularly carpet weaving, embroidery, and pottery—in the provinces of Ghazni and Herat significantly influence the attraction of domestic tourists. These crafts not only serve as cultural attractions but also provide a source of income for local families. Nevertheless, challenges such as limited market access, lack of governmental support, and inadequate educational facilities remain major obstacles for these female artisans.

It is recommended to establish permanent sales centers, organize local exhibitions, and provide specialized training in order to support the development of these crafts and enhance domestic tourism.

Keywords: Afghan women, development, participation, handicrafts, tourism, female artisans, Bamyan, Ghazni, Herat

FAIRNESS IN AI RECOMMENDER SYSTEMS: ENSURING UNBIASED RECOMMENDATIONS

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Abstract

Recommender systems have become a cornerstone of modern digital platforms, from e-commerce to streaming services, guiding users through vast catalogs of products, media, and content. While these systems enhance personalization and engagement, they often unintentionally introduce biases, favoring popular items, established sellers, or specific user groups. Such biases can limit opportunities for smaller sellers, reduce content diversity, and diminish trust in the platform.

Fairness in AI recommender systems can be improved through strategies that mitigate bias while maintaining recommendation accuracy. Approaches include diversity-aware recommendations, exposure fairness, and algorithmic adjustments that balance personalization with equity. Evaluation metrics that consider both relevance and fairness are highlighted to measure the effectiveness of these techniques.

Through real-world examples, this study demonstrates how targeted interventions can create more equitable recommendations, enhance user experience, and promote ethical AI practices. Future directions, including the integration of large language models and real-time bias detection, are considered for improving fairness in dynamic and large-scale recommendation environments.

By emphasizing fairness alongside accuracy, this work contributes to the development of responsible, inclusive, and trustworthy recommender systems, reinforcing the critical importance of ethical AI in today's digital ecosystems.

Keywords

Recommender Systems; Fairness in AI; Bias Mitigation; Ethical AI; E-commerce

**PROPOLİS VE OZON İLAVESİNİN MTA’NIN FİZİKSEL VE MEKANİK
ÖZELLİKLERİ ÜZERİNDEKİ ETKİLERİNİN İNCELENMESİ: İN VİTRO
ÇALIŞMA**

INVESTIGATION OF THE EFFECTS OF PROPOLIS AND OZONE ADDITION ON THE
PHYSICAL AND MECHANICAL PROPERTIES OF MTA: AN IN VITRO STUDY

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ÖZET

Mineral Trioksit Agregat (MTA), 1993 yılında tanıtılan kalsiyum silikat bazlı bir siman olup, biyouyumluluğu, sızdırmazlığı ve düşük sitotoksitesi sayesinde diş hekimliğinde yaygın olarak kullanılmaktadır. Bu çalışmada, antibakteriyel etkinliğiyle bilinen propolis ve ozonlanmış suyun MTA’ya ilavesinin, MTA’nın fiziksel ve mekanik özellikleri üzerindeki etkilerinin değerlendirilmesi amaçlanmıştır. Bu amaçla, MTA’nın distile su (kontrol), propolis ve ozonlanmış su ile karıştırıldığı üç grup oluşturulmuştur. Başlangıç ve final sertleşme süreleri belirlenmiş; mikrosertlik ölçümleri 1., 3., 7. ve 28. günlerde, basınç dayanımı ise 28. günde değerlendirilmiştir. Ayrıca yüzey morfolojisi ve elementel bileşim, Taramalı Elektron Mikroskopu (FE-SEM) ve Enerji Dağılımlı Spektroskopi (EDS) analizleriyle incelenmiştir. Veriler, zaman faktörüne bağlı değişkenler için Tekrarlı Ölçümler ANOVA veya Friedman testi, gruplar arası karşılaştırmalar için ise Tek Yönlü ANOVA veya Kruskal–Wallis testi ile analiz edilmiş; anlamlılık düzeyi $p < 0.05$ olarak kabul edilmiştir.

Bulgulara göre, MTA + propolis grubunda başlangıç (6 dk) ve final sertleşme süresi (238.611 ± 4.804 dk) anlamlı biçimde uzarken, MTA + ozonlu su grubunda kontrol grubuna benzer sonuçlar elde edilmiştir ($p < 0.001$). Mikrosertlik ölçümleri, tüm gruplarda zamanla artış gösterirken ($p < 0.001$), MTA + propolis grubunda tüm zaman noktalarında diğer gruplara kıyasla daha düşük değerler kaydedilmiştir ($p < 0.001$). MTA + propolis grubu ayrıca, diğer gruplara kıyasla anlamlı düzeyde daha düşük basınç dayanımı değerleri (30.749 ± 3.374 MPa) sergilemiştir ($p < 0.001$). FE-SEM analizinde ozonlu su grubunda daha kompakt ve düzgün yüzey yapısı gözlenirken, propolis grubunda film-benzeri bir tabaka oluşumu dikkati çekmiştir. EDS sonuçları, her üç grupta da MTA’nın temel elementel bileşiminin korunduğunu göstermiştir.

Sonuç olarak, propolis eklenmesinin MTA’nın sertleşme süresini olumsuz etkileyip mekanik dayanımını azalttığı; ozonlanmış suyun ise MTA’nın fiziksel ve kimyasal bütünlüğünü koruyarak güvenle kullanılabilceği sonucuna varılmıştır.

Anahtar Kelimeler: Mineral Trioksit Agregat, Antibakteriyel, Mikrosertlik, Basınç Dayanımı

Teşekkür: Bu çalışma, Bolu Abant İzzet Baysal Üniversitesi Bilimsel Araştırma Projeleri Koordinasyon Birimi tarafından desteklenmiştir (Proje No: 2025-BDP-007).

ABSTRACT

Mineral Trioxide Aggregate (MTA), introduced in 1993 as a calcium silicate-based cement, is widely used in dentistry due to its biocompatibility, sealing ability, and low cytotoxicity. This study aimed to evaluate the effects of adding propolis and ozonated water on the physical and mechanical properties of MTA. For this purpose, three groups were prepared: control (distilled water), propolis, and MTA mixed with ozonated water. The initial and final setting times were determined; microhardness measurements were performed on days 1, 3, 7, and 28, and compressive strength was evaluated on day 28. In addition, surface morphology and elemental composition were analyzed using Field Emission Scanning Electron Microscopy (FE-SEM) and Energy Dispersive Spectroscopy (EDS). Data were analyzed using Repeated Measures ANOVA or Friedman test for time-dependent variables, and One-Way ANOVA or Kruskal–Wallis test for intergroup comparisons, with a significance level set at $p < 0.05$.

According to the results, the MTA + propolis group showed a significantly prolonged initial (6 min) and final setting time (238.611 ± 4.804 min). In contrast, the MTA + ozonated water group showed results similar to those of the control ($p < 0.001$). Microhardness values increased over time in all groups ($p < 0.001$); however, the MTA + propolis group exhibited significantly lower values at all time points compared to the other groups ($p < 0.001$). Additionally, the MTA + propolis group presented significantly lower compressive strength values (30.749 ± 3.374 MPa) than the other groups ($p < 0.001$). FE-SEM analysis revealed a more compact and uniform surface morphology in the ozonated water group, whereas a film-like layer formation was observed in the propolis group. EDS results indicated that the main elemental composition of MTA was preserved across all groups.

In conclusion, the addition of propolis adversely affected the setting time and mechanical strength of MTA. In contrast, ozonated water maintained the material's physical and chemical integrity, suggesting its safe use in clinical applications.

Keywords: Mineral Trioxide Aggregate, Antibacterial, Microhardness, Compressive Strength

Acknowledgements: This study was funded by the Scientific Research Projects Coordination Unit of Bolu Abant İzzet Baysal University (Grant Number: 2025-BDP-007).

**INDUCED BREEDING, LARVAL DEVELOPMENT AND
FECUNDITY STUDY OF FRESHWATER GARFISH *Xenentodon cancila*
(HAMILTON, 1822)**

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Abstract: This study investigates the induced breeding, larval development, and fecundity of *Xenentodon cancila*, a near-threatened freshwater garfish of considerable ecological and economic value. To identify the most efficient spawning method, controlled breeding trials were conducted using three hormonal treatments: Ovatile, Ovuhom, and pituitary gland (PG) extract. Among these, PG extract produced the most successful results, with optimal doses of 6 mg/kg body weight for females and 2 mg/kg for males, leading to higher spawning response, improved fertilization rates, and better-quality eggs. Fecundity assessment, based on monthly sampling of 20 mature individuals, revealed that *X. cancila* produces 135–205 eggs per fish, indicating a relatively low but consistent egg output characteristic of the species. Detailed observations were made on larval development from hatching until full morphological formation. Fertilization rate ($64.34\% \pm 1.31\%$), Hatching Rate ($85.33\% \pm 1.10\%$) and Ovulation rate ($52.21\% \pm 1.21\%$) were recorded. Key developmental milestones—such as yolk sac absorption, fin differentiation, swim bladder inflation, and onset of active feeding were recorded to construct a clear timeline of larval growth. To improve early survival, standardized nursing protocols were developed, including optimized stocking density, water quality management, and a stepwise feeding regime using infusoria, *Artemia nauplii*, and formulated micro-diets. These practices significantly enhanced larval survival and overall growth performance. Overall, the findings offer valuable insights into the reproductive biology and artificial propagation of *X. cancila*. The study establishes effective breeding and larval rearing protocols that can be used for conservation initiatives, sustainable aquaculture production, and strategic restocking programs aimed at mitigating the species' ongoing population decline in natural habitats.

Keywords: Induced breeding, *Xenentodon cancila*, PG hormone, Fecundity, Larval development, Conservation

FROM CLINICS TO CLOSETS: APPLYING MEDICAL NLP AND GENERATIVE AI INNOVATIONS TO FAST FASHION AND GEN Z ENGAGEMENT

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ABSTRACT

Artificial Intelligence (AI) and specifically Natural Language Processing (NLP) and Generative AI are propelling this convergence to shake up the major sectors, including clinical medicine and the consumer sector, such as fast fashion. The author also examines the application of new technological innovations in the healthcare AI to the sphere of fast fashion and, specifically, to its usage by Gen Zers, including medical NLP, generative adversarial networks (GANs), and conversational agents. We can make comparisons with the fashion aisle with virtual purchase assistance, customized design, and sustainable engagement of the customer based on the emphasis on the ethical management of data, the individualization of care, and explainable AI in healthcare. The FitGAN and StyleGAN2-ADA applications are some of the Daidis that exhibit the history of realistic garment generation as the visualisation of multifaceted phenomena in clinical imaging (GLIDE). Similar to clinical decision support systems are co-creative and talk-back fashion design-based systems, e.g., Chat-to-Design. The recommender systems, material selection support, or virtual assistants that act in the two spheres are increasingly becoming customized, efficient, and interactive. We also examine the problems that are shared by all tools given by GenAI, such as the following: the novelty of the lab to the normal world, its reliance on data, and restrictions of ethical issues. The example of Vinted and its research as a piece of research on the topic of eco-conscious interaction and the multidimensional approach towards the analysis of the brand avoidance behaviour among the Gen Z generation makes us insist that the designers of AI interfaces in fashion companies should not only be ethical but also brand-sensitive. The mapping of how structured, rigorous medical NLP and innovative creativity of AI can transform the fast fashion environment in the most massive way is a new way to address this interdisciplinary framework, by suggesting applying it to the promotion of transparency, personalization, and sustainability of Gen Z consumer interaction.

Keywords: Generative AI, Fast Fashion, Medical NLP, Gen Z Engagement, Virtual Try-On, Fashion Recommender Systems.

**ASSESSING HEALTH RELATED QUALITY OF LIFE AND ITS ASSOCIATION
WITH CHRONIC COMORBID CONDITION AMONG DIABETIC PATIENTS IN
RAJSHAHI, BANGLADESH**

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Abstract

Background:

The diabetes causes 12.9% of all deaths and could account for 14.8% by 2030 in Bangladesh. Patients' conditions are evaluated using life-quality tests as the foundation. The objective of this study was to investigate the health-related quality of life among diabetes patients in Bangladesh.

Methods:

A total of 400 diabetes patients were considered as sample where 60.8% female and 39.3% male patients. Quality of life was measured by the EQ-5D-5L questionnaire and a visual analogue scale. Chi-square test and logistic regression model were used to analyses the data and Statistical significance was accepted at $p < 0.05$.

Results:

The study revealed that 20.3%, 25.3% and 54.5% diabetes patients' health related quality of life were favourable, fairly favourable and non-favourable. Among the diabetes patients, type 1 disease 4.3%, type 2 disease 95.8%. The multinomial logistic regression model demonstrated that age, education, occupation, present health status were significantly associated with health-related quality of life among diabetes patients. Pearson and Deviance tests showed that our selected model was good fitted to the data, and ROC curve showed that the accuracy rate of the model was 76%. Among the diabetes patients, 13.8%, 11%, 33.3%, 19.8%, 6% and 31.3% had hypertension, heart disease, eye disease, leg disease, depression and others respectively. Binary logistic model showed that eye disease and leg disease were significantly associated with health-related quality of life among diabetes patients. ROC curve showed that the accuracy rate of the models for heart disease, leg problem and eye disease were 71%, 72% and 54% respectively.

Conclusion:

This study found that a remarkable numbers of diabetes patients' health related quality of life was not good. Some modifiable factors were found to be associated with quality of life. Also, more than 31.3% diabetes patients were suffering from the different comorbidities, and most of the comorbidities were related to their health-related quality of life. These findings will help to the Government of Bangladesh to improve the health-related quality of life among diabetes patients in the country.

Keywords: Quality of life; Diabetes patients; Comorbidities; Correspondence analysis; Logistic regression model.

AN EXPERIMENTAL INVESTIGATION FOR FLEXURAL STRENGTHENING OF RC BEAM USING EXTERNALLY UNBONDED MILD STEEL FLAT BAR

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Abstract:

This study was devoted towards an experimental investigation to evaluate the effectiveness of a newly proposed strengthening technique for flexure deficient RC beam. In the proposed technique, the beam was strengthened using readily available mild steel (MS) flat bar and royal bolt to make the process quick and economic. The effects of various important factors viz., the number of bolt and its diameter, thickness and size of flat bar and their location were investigated using four-point bending test. Test results revealed that the proposed strengthening technique is effective enough to enhance the load carrying capacity of the control beam in flexure. The yield and ultimate strengths increased by as much as 45% compared to the control beam in one of the strengthened cases. It was found that the size and thickness of MS flat bar and its location have noticeable influence on the flexure capacity of the strengthened beam. The anchorage failure of royal bolt was the dominant mode of failure, and the effectiveness of the method mainly depends on the performance of the royal bolt anchorage. The royal bolt failure could be avoided by providing enough number of royal bolts to utilize the full tensile capacity of the MS flat bar and improve the flexure behavior of the strengthened beam.

Key Words: Strengthening, Flexure, Royal Bolt, Mild steel

MARINE NATURAL PRODUCTS AS PROMISING YET UNDERUTILIZED SOURCES OF NOVEL THERAPEUTICS

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Abstract

This study explores marine natural products as underexplored but highly promising sources of new drugs, focusing on their unique chemical diversity and pharmacological potential. Marine organisms produce structurally diverse metabolites with significant bioactivities, yet remain vastly underexplored in drug discovery. To examine the current landscape of marine natural product research, highlight key bioactive compounds, identify challenges limiting their full utilization, and propose strategic pathways for future exploration. A comprehensive review of recent literature, case studies of clinically relevant marine derived compounds, and analysis of technological advancements supporting marine drug discovery was conducted. Findings reveal that marine organisms, particularly sponges, tunicates, marine microbes, and algae, produce compounds with potent anticancer, antimicrobial, antiviral, anti-inflammatory, and neurological activities. Several marine derived drugs such as trabectedin and eribulin demonstrate the therapeutic value of this resource. Despite these successes, challenges including limited accessibility, low natural abundance, ecological concerns, and technological bottlenecks persist. Marine natural products hold remarkable promise for novel drug development, and advancements in analytical chemistry, genomics, synthetic biology, and sustainable harvesting techniques are paving the way for enhanced discovery and utilization.

Keywords: Marine natural products, Drug discovery, Marine biodiversity, Bioactive compounds, Natural product

**THE ROLE OF THE IRAQI MINISTRY OF FOREIGN AFFAIRS IN SHAPING
FOREIGN POLICY AFTER 2003- AN ANALYTICAL STUDY**

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Abstract

This research aims to analyze the role of the Algerian Ministry of Foreign Affairs in formulating foreign policy after 2003, based on the ministry's victorious national framework, and examine the administrative and organizational developments it has witnessed under Yemen's new political system, which emphasizes pluralism and democracy. This came after decades of isolation and authoritarianism, which led it to undertake the task of rebuilding the country's political landscape, necessary for a strategy that addresses Iraq's international presence and its position within the regime and its aides.

The ministry sought to seek structural reforms to rehabilitate the diplomatic apparatus, including the requirements of the transitional and structural phase. These reforms were implemented by developing the administrative structure, including new specialized directorates, and adopting standard criteria for employee selection. The ministry also sought to play strategic roles in related issues, such as strengthening fraternal relations, activating Iraq's participation in international organizations, and security, terrorism, and economic diplomacy.

Despite the challenges it faced, including political competition, limited domestic staff, and external pressures, the Ministry of Foreign Affairs was able to chart a new course for Iraqi foreign policy: engagement, openness, and the restoration of sovereignty. This reflected its growing importance as an effective tool for advancing national interests and gaining beneficial political traction

Therefore, I began to look to the Ministry of Foreign Affairs' experience as an updated model for upward transformation from formal to external structure with a unified and strategic vision. This requires completing this path through robust reforms, global integration, and the consolidation of a national culture, not a multicultural one, in dealing with issues.

Keywords: Foreign policy, Iraqi Ministry of Foreign Affairs, democratic transition, diplomatic decision-making, institutional challenges, international relations.

THERMAL, OPTICAL, AND ELECTRICAL PROPERTY INVESTIGATION OF FeAl_2O_4 SPINEL OBTAINED BY SOLID-STATE REACTION METHOD

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ABSTRACT

FeAl_2O_4 crystals were successfully synthesized using the conventional solid-state reaction method, ensuring effective diffusion and homogeneous mixing of the precursor oxides. The synthesized compound was characterized using TGA/DTA, FTIR, UV–Vis spectroscopy, and electrical resistivity measurements to evaluate its physicochemical properties. Thermal behavior and phase evolution were examined through Thermogravimetric and Differential Thermal Analysis (TGA/DTA), which displayed distinct endothermic and exothermic transitions associated with the formation and stabilization of the spinel phase. Fourier Transform Infrared Spectroscopy (FTIR) further confirmed the development of the spinel lattice through the identification of characteristic Fe–O and Al–O vibrational modes. Optical properties were investigated using UV–Visible spectroscopy in the 300–800 nm wavelength range, revealing high transmittance in the visible region and strong absorption in the UV region. The optical band gap was estimated to be 3.58 eV, establishing FeAl_2O_4 as a wide band gap semiconductor with excellent transparency. Electrical resistivity measurements performed using the two-probe method demonstrated semiconducting behavior, with conductivity increasing at elevated temperatures. The activation energies corresponding to different temperature regions were calculated to be 0.30 eV at 363–390 K and 7.84 eV at 613–616 K. The combined thermal, optical, and electrical results confirm that FeAl_2O_4 possesses multifunctional characteristics suitable for advanced material studies.

Keywords: FeAl_2O_4 Spinel, Solid-State Reaction, Thermal and Optical Characterization, Electrical Resistivity

AGRICULTURAL WASTE DERIVED BIOPOLYMERS: A SUSTAINABLE ALTERNATIVE TO CONVENTIONAL PLASTICS

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Abstract

The excessive use of petroleum based plastics has led to severe environmental challenges, including non-biodegradable waste accumulation and greenhouse gas emissions. As global awareness of sustainability grows, agricultural residues have emerged as promising raw materials for biopolymer synthesis. These residues, often treated as waste, are rich in cellulose, hemicellulose, lignin, and starch, which can be transformed into biodegradable polymers suitable for packaging, agricultural films, and biomedical applications. This paper aims to review recent developments in the conversion of agricultural waste into biopolymers and to assess their potential as sustainable alternatives to conventional plastics in various industrial applications. A comprehensive literature review was conducted using recent peer-reviewed publications, reports, and databases focusing on agricultural waste valorization, polymer synthesis, and biodegradation studies. The review categorizes agricultural wastes such as rice husk, corn stover, sugarcane bagasse, and cassava peels based on their biochemical composition and processing routes into biopolymers like polylactic acid (PLA), polyhydroxyalkanoates (PHAs), and starch based polymers. The analysis reveals that agricultural waste derived biopolymers demonstrate favorable mechanical and thermal properties comparable to commercial plastics while being biodegradable and environmentally benign. Advances in enzymatic hydrolysis, microbial fermentation, and nanocomposite reinforcement have significantly enhanced the performance and scalability of these materials. However, challenges such as high production costs, feedstock variability, and limited industrial infrastructure persist, particularly in developing economies. Agricultural waste valorization offers a dual advantage of waste management and sustainable material production. With continued technological innovation, policy support, and circular economy integration, biopolymers from agricultural residues could play a pivotal role in reducing plastic pollution and fostering green industrial transitions. Future research should focus on process optimization, lifecycle assessment, and regional scale implementation to maximize environmental and economic benefits.

Keywords: Agricultural waste, Biopolymers, Biodegradable plastics, Sustainable materials, Green chemistry, Environmental pollution

GEÇMİŞTEN GÜNÜMÜZE LİDERLİK KAVRAMI THE CONCEPT OF LEADERSHIP FROM PAST TO PRESENT

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ÖZET

Bu çalışma, liderlik olgusunu derinlemesine ve bütüncül bir bakış açısıyla ele almayı amaçlamaktadır. Konu, tarihsel gelişiminden günümüzün çağdaş yaklaşımlarına ve geleceğe yönelik önemli yönelimlerine kadar kapsamlı bir çerçevede incelenmiştir. Çalışmada, liderliğin sadece hiyerarşik veya yönetsel bir işlev olmadığı; aksine, bireysel, kurumsal ve toplumsal dönüşümü sağlayan dinamik, çok katmanlı bir süreç olduğu kuvvetle vurgulanmıştır. Araştırma nitel bir literatür taramasına dayanmaktadır. Bu çerçevede, liderlik kavramını şekillendiren klasik, çağdaş ve dijital liderlik yaklaşımları teorik bir çerçevede karşılaştırmalı biçimde analiz edilmiştir. Çalışma kapsamında, liderliğin tarihsel temelleri Antik Yunan'daki ilk düşüncelerden modern döneme kadar incelenmiştir. Ayrıca, dönüşümcü, hizmetkâr, otantik ve paylaşılan liderlik gibi önde gelen çağdaş kuramların örgütsel ve toplumsal bağlamdaki etkileri tartışılmıştır. Önemli bir bölüm, dijital dönüşüm, yapay zekâ ve küreselleşme süreçlerinin liderlik kavramına kazandırdığı yeni ve kritik boyutlara odaklanmıştır. Bu bağlamda, insan merkezli liderlik anlayışının, gelecekteki karmaşık ve belirsiz ortamlarda artan önemine dikkat çekilmiştir. Bulgular, liderliğin disiplinler arası ve sürekli evrilen bir yapıya sahip olduğunu açıkça göstermektedir. Çalışma sonucunda, liderliğin özünde yer alan etik sorumluluk, empati, yaratıcılık, kültürel farkındalık ve esneklik gibi insani değerlerin, teknolojik ilerlemeler karşısında daha da kritik hale geldiği ortaya konmuştur. Bu bulgular ışığında, eğitimde, kamu yönetiminde ve özel sektörde dönüşümcü, katılımcı ve etik değerlere dayalı liderlik modellerinin hızla geliştirilmesi; liderlik eğitimlerinin ise duygusal zekâ, dijital yetkinlik ve sürdürülebilirlik temalarıyla yeniden yapılandırılması gerekliliği vurgulanmıştır.

Anahtar Kelimeler: Liderlik, dönüşümcü liderlik, dijital liderlik, insan merkezli lider

ABSTRACT

This study expands the concept of leadership and allows for a holistic perspective. The topic comprehensively integrates students' understanding of today's contemporary approaches and its significant characteristics for the future. The study strongly emphasizes that heritage does not solely have a technological or managerial function; it is a dynamic, multilayered process that provides a unique, individual, institutional, and societal structure. The research is based on a qualitative literature review. This integration provides a theoretically integrated analysis of management styles, including classical, contemporary, and digital leadership strategies. The study explores the origins of leadership from the earliest ideas in Ancient Greece to the modern era. Furthermore, the formation of prominent contemporary theories such as transformational, servant, authentic, and distributed leadership, as well as issues within the societal context, are discussed. A significant section focuses on the new and critical dimensions that digital transformation, artificial intelligence, and globalization bring to leadership. The growing importance of this logical, human-centered management approach, despite its complex and uncertain scope, is highlighted. The study clearly demonstrates that international, interdisciplinary, and constantly evolving principles are inherent. The study revealed that human values such as ethical responsibility, empathy, innovation, cultural flexibility, and resilience, which are essential to management solutions, have become even more critical with

technological advancements. These findings highlight the rapid development of product- and ethical-based leadership models in education, public administration, and the transformation of private production. The need to restructure leadership training with emotional intelligence, digital sustainability, and sustainability themes is emphasized.

Keywords: Leadership, managerial leadership, digital leadership, human-centered leadership

THE EFFECT OF VEHICLE MASS AND VOLUME CHANGES ON ENERGY CONSUMPTION IN N2 CATEGORY ELECTRIC CARGO VAN VEHICLES¹

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Abstract:

Electric cargo vans are playing an increasingly critical role in the logistics and last-mile delivery sector, in line with zero-emission targets. However, due to their functional requirements, their large and tall body structures inevitably result in a high aerodynamic drag coefficient (Cd), which directly reduces the efficiency of the valuable energy provided by the battery.

In this study, the systematic effects of three key design and operational parameters on the energy consumption and single-charge driving range of an electric cargo van were examined. These parameters include changes in the base vehicle mass, maximum permissible payload, and internal cargo volume. To assess the impact of these structural modifications on energy efficiency, VECTO simulations were conducted under various load scenarios and driving conditions, such as urban and highway routes.

The analysis results indicate that every kilogram increase in base vehicle mass nearly linearly increases energy consumption, particularly in urban stop-and-go traffic. The use of lightweight materials directly improves range by reducing vehicle mass. Changes in the maximum payload were also found to have a significant effect on energy consumption in both unloaded and loaded conditions.

It was observed that increasing the cargo volume leads to higher energy consumption due to changes in the vehicle's aerodynamic characteristics.

In conclusion, minimizing energy consumption and maximizing range in electric cargo vans requires the integrated application of three key strategies: reducing base vehicle mass through innovative design and materials, optimizing internal volume to balance aerodynamic performance and payload capacity, and improving operational processes by optimizing loading and route planning. This holistic approach is critical for reducing the total cost of ownership of electric commercial vehicles and achieving sustainable logistics goals.

Keywords: VECTO, electric vehicle, driving range, energy consumption, zero CO₂ emissions

¹ This study belongs to the first author and was carried out within the R&D Department of Koluman Otomotiv Endüstri A.Ş.

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ARAÇ KÜTLE VE HACİM DEĞİŞİMİNİN N2 KATEGORİ ELEKTRİKLİ KARGO VAN ARAÇLARDA ENERJİ TÜKETİMİNE ETKİSİ¹

Özet:

Elektrikli kargo van araçlar, lojistik ve son dağıtım sektöründe sıfır emisyon hedefleri doğrultusunda giderek daha kritik bir rol üstlenmektedir. Ancak, bu araçların fonksiyonel gereklilikleri nedeniyle sahip oldukları geniş ve yüksek gövde yapıları, kaçınılmaz olarak yüksek bir aerodinamik sürüklenme katsayısına (Cd değeri) yol açmakta ve bu durum bataryadan sağlanan değerli enerjinin verimliliğini doğrudan olumsuz etkilemektedir.

Bu çalışma kapsamında, elektrikli bir kargo vanın enerji tüketimi ve tek şarjla ulaşabileceği menzile üzerinde etkili olan üç temel tasarım ve işletme parametresinin sistematik etkisi incelenmiştir. Bu parametreler; baz araç ağırlığındaki değişim, maksimum yüklü kütle kapasitesi ve araç iç hacmindeki düzenlemelerdir. Bu yapısal değişikliklerin enerji verimliliğine etkisini değerlendirmek için, şehir içi ve çevre yolu gibi farklı sürüş koşullarında çeşitli yük senaryoları üzerinden VECTO simülasyonları gerçekleştirilmiştir.

Analiz sonuçları, baz araç ağırlığındaki her kilogram artışın özellikle şehir içi dur-kalk sürüşlerde enerji tüketimini neredeyse doğrusal olarak yükselttiğini göstermektedir. Hafif malzemelerin kullanımı ise ağırlığı azaltarak menzili doğrudan artırmaktadır. Maksimum yüklü kütledeki değişimlerin de hem boş hem yüklü kullanımda enerji tüketimini belirgin şekilde etkilediği görülmüştür.

Araç kargo hacmi artırıldığında, aerodinamik yapının değişmesi nedeniyle enerji tüketiminin arttığı gözlemlenmiştir.

Sonuç olarak, elektrikli kargo vanlarda enerji tüketimini azaltmak ve menzili artırmak için üç temel stratejinin birlikte uygulanması gerekmektedir: inovatif tasarım ve malzemelerle baz araç kütlelerinin azaltılması, aerodinamik performans ile yük kapasitesini dengeleyen uygun iç hacim tasarımı ve operasyonel süreçlerde yükleme ile rota planlamasının optimize edilmesi. Bu bütüncül yaklaşım, elektrikli ticari araçlarda toplam sahip olma maliyetini düşürmek ve sürdürülebilir lojistik hedeflerine ulaşmak için kritik öneme sahiptir.

Anahtar Kelimeler: VECTO, elektrikli araç, menzile, enerji tüketimi, sıfır CO₂ emisyonu

¹ Bu çalışma KOLUMAN OTOMOTİV ENDÜSTRİ A.Ş. ARGE DEPARTMANI birinci yazara aittir.

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**POLİTİK EKONOMİ KAPSAMINDA TÜRKİYE VE KAZAKİSTAN
İLİŞKİLERİNİN SÜRDÜRÜLEBİLİRLİĞİNİN TARTIŞILMASI**
DISCUSSING THE SUSTAINABILITY OF TURKEY-KAZAKHSTAN RELATIONS IN
THE CONTEXT OF POLITICAL ECONOMY

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ÖZET

Kazakistan, Sovyetler Birliği'nden bağımsızlığını kazandıktan sonra çok yönlü bir dış politika benimsemiş ve Türkiye ile kültürel ve ekonomik bağlarını güçlendirme yoluna gitmiştir. Ancak, Sovyet döneminden miras kalan Rus kültürel hegemonyası, Kazakistan'ın ekonomik, politik ve kültürel yapılarında etkisini sürdürmektedir. Bu durum, Türkiye'nin Kazakistan ile ilişkilerinde hem fırsatlar hem de zorluklar yaratmaktadır. Bu bağlamda çalışmada Rus kültürü etkisi altında, Türkiye ve Kazakistan ilişkilerinin sürdürülebilirliğini politik ekonomi kapsamında değerlendirmek amaçlanmaktadır. Çalışma, Türkiye'nin Kazakistan ile ilişkilerinde, Rus etkisini bir meydan okuma yerine bir fırsat olarak değerlendirmesi gerektiğini vurgulamaktadır. Bu bağlamda, kültürel diplomasi araçlarının güçlendirilmesi, enerji dışı sektörlerde ekonomik çeşitliliğin artırılması ve Türk Devletleri Teşkilatı gibi bölgesel platformların etkin kullanımı gibi stratejik öneriler sunulmaktadır. Literatür taraması ve betimsel analiz yönteminin kullanıldığı çalışmada Sonuç olarak, Türkiye-Kazakistan ilişkilerinin, yalnızca ekonomik bağlarla değil, aynı zamanda kültürel ve politik iş birlikleriyle derinleştirilmesinin, her iki ülke için de sürdürülebilir kalkınma ve bölgesel istikrar sağlama açısından anahtar öneme sahip olduğu ortaya konulmaktadır. Bu kapsamda, Türkiye'nin proaktif ve yenilikçi bir yaklaşım benimseyerek ilişkileri stratejik bir düzeye taşıması gerektiği savunulmaktadır.

Anahtar Kelimeler: Politik Ekonomi, Türkiye-Kazakistan İlişkileri, Kültürel Diplomasi, Sürdürülebilir Kalkınma

ABSTRACT

The relations between Turkey and Kazakhstan are founded on historical ties, strategic partnership, and cultural affinity, yet shaped by regional and international dynamics. Following its independence from the Soviet Union, Kazakhstan adopted a multi-dimensional foreign policy and sought to enhance its economic and cultural relations with Turkey. However, the Russian cultural legacy inherited from the Soviet era continues to influence Kazakhstan's political, economic, and cultural structures, creating both opportunities and challenges for bilateral relations.

This study evaluates the sustainability of Turkey–Kazakhstan relations within the framework of political economy, focusing on the role of Russian influence. Russia's dominance in energy infrastructure and trade networks limits Turkey's economic cooperation with Kazakhstan, while Kazakhstan's balancing policy toward Russia constrains deeper political partnership. In the sphere of cultural diplomacy, the prevalence of the Russian language and media restricts Turkey's cultural influence.

The study suggests that Turkey should view Russian influence not as a challenge but as an opportunity. Strengthening cultural diplomacy tools, diversifying the economy beyond energy, and utilizing regional organizations such as the Organization of Turkic States are key strategic steps. Using literature review and descriptive analysis methods, the study concludes that expanding economic, cultural, and political cooperation is essential for sustainable development and regional stability. The findings offer insights for both academia and policymakers, supporting innovative strategies for Turkey's foreign policy toward Kazakhstan. **Keywords:** Political Economy, Turkey–Kazakhstan Relations, Cultural Diplomacy, Sustainable Development

**KAYNAK SİMÜLATÖRÜ UYGULAMALARI İLE KAYNAK EĞİTİM
YÖNTEMLERİNİN KARŞILAŞTIRMALI ANALİZİ**
COMPARATIVE ANALYSIS OF WELDING SIMULATOR APPLICATIONS AND
WELDING TRAINING METHODS

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ÖZET

Bu çalışmada, gemi inşaat sektöründeki kaynaklı imalat süreçlerinde nitelikli kaynakçı yetiştirme sürecinin yanı sıra okullarda kaynak eğitimi sırasında karşılaşılan ekonomik ve eğitimsel zorluklara çözüm olarak sanal gerçeklik (VR) tabanlı kaynak simülatörü eğitimlerinin uygulanabilirliği ele alınmıştır. Yapılan çalışmada, öncelikle geleneksel kaynak yöntemleri olan TIG, MIG-MAG ve elektrik ark kaynağının genel özellikleri incelenmiş; bu yöntemlerin uygulamada hem kaynakçıların hem de eğitim kurumları açısından ekonomik boyutları, iş güvenliği ve uygulanabilirlik bakımından sahip oldukları avantajlar ile dezavantajlar değerlendirilmiştir. Ardından, gemi inşaat sektöründeki kaynaklı imalat süreçlerinin gerektirdiği yüksek nitelikli iş gücü, maliyet unsurları ve kalite beklentileri ele alınarak tartışılmıştır. Bu beklentiler doğrultusunda, sanal kaynak simülatörlerinin teknik, ekonomik ve pedagojik katkıları incelenmiş ve bu katkıların geleneksel kaynak yöntemlerinin ortaya çıkardığı dezavantajları hangi noktalarda giderebileceği analiz edilmiştir. Bulgular, sanal kaynak teknolojilerinin hem eğitim maliyetlerini düşürme hem de üretim kalitesini artırma hem de iş güvenliği açısından önemli bir potansiyel sunduğunu göstermektedir. Bu tespit edilen bulgular, VR teknolojisinin yalnızca bir eğitim aracı olmanın ötesinde, kaynakçı adaylarına gerçek zamanlı performans geri bildirimi sunarak öğrenme sürecini önemli ölçüde hızlandırdığını göstermektedir. Ayrıca, sınırsız tekrar imkânı sayesinde öğrenme süreci kısaltmakta ve hataların kalıcı öğrenmeye dönüşmesi kolaylaşmaktadır. Ekonomik açıdan bakıldığında ise, sanal eğitim ortamlarının kullanılmasıyla ilave tel, koruyucu gaz, kaynak edilecek parçalar ve diğer kaynak makinasında kullanılan sarf malzemelerine duyulan gereksinim belirgin biçimde azalmakta; bu da toplam eğitim maliyetlerinde kayda değer bir düşüş sağlayarak kurum bütçesine önemli bir katkı sunmaktadır. Ayrıca iş sağlığı ve güvenliği açısından bakıldığında; geleneksel kaynak uygulamalarında karşılaşılan iş güvenliği problemlerini tamamen ortada kaldırmaktadır.

Anahtar Kelimeler: Gemi inşa, kaynak teknolojisi, sanal kaynak eğitimi, VR simülasyon, teknik eğitim.

ABSTRACT

In this study examines the process of training qualified welders for welded manufacturing processes in the shipbuilding industry, as well as the feasibility of virtual reality (VR)-based welding simulator training as a solution to the economic and educational challenges encountered during welding education in schools. The study first examines the general characteristics of traditional welding methods, including TIG, MIG-MAG, and electric arc welding. The advantages and disadvantages of these methods, in terms of economic aspects, occupational safety, and applicability, are evaluated for both welders and educational institutions. The highly skilled workforce, cost factors, and quality expectations required by welded manufacturing processes in the shipbuilding industry are then discussed. In line with these expectations, the technical, economic, and pedagogical contributions of virtual welding simulators are examined, and the extent to which these contributions can address the disadvantages of traditional welding methods is analyzed. The findings demonstrate that virtual welding technologies offer significant potential for reducing training costs, improving production quality, and improving occupational safety. These findings demonstrate that VR technology goes beyond being a mere educational tool; it significantly accelerates the learning process by providing welder candidates with real-time performance feedback. Furthermore, unlimited repetition allows for shorter learning times, making it easier to turn mistakes into permanent learning. From an economic perspective, the use of virtual training environments significantly reduces the need for additional wire, shielding gas, welded parts, and other welding machine consumables. This significantly reduces overall training costs and contributes significantly to the institution's budget. Furthermore, from an occupational health and safety perspective, it completely eliminates the occupational safety problems encountered in traditional welding practices.

Keywords: Shipbuilding, welding technology, virtual welding training, VR simulation, technical training.

HİDROLİK KİREÇ VE KİREMİT TOZU ESASLI HORASAN HARCINDA KETEN LİFİ, KEÇİ KILI VE CAM ELYAF KATKILARININ DENEYSEL ARAŞTIRILMASI

EXPERIMENTAL INVESTIGATION OF FLAX FIBER, GOAT HAIR, AND GLASS FIBER ADDITIONS IN HYDRAULIC LIME AND BRICK DUST-BASED KHORASAN MORTAR

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ÖZET

Bu deneysel çalışmada, esas bağlayıcısı kireç ($\text{Ca}(\text{OH})_2$) olan geleneksel Horasan harçlarının mekanik ve fiziksel performansını artırmayı amaçlanmıştır. Araştırma, hidrolik kireç, kiremit tozu, mermer tozu ve kumdan oluşan referans karışıma keten lifi, keçi kılı ve cam elyafı olmak üzere farklı lif katkılarının entegre edilmesiyle yürütülmüştür. Bu amaçla, $40 \times 40 \times 160$ mm boyutlarında prizma kalıplar kullanılarak dört ayrı numune seti hazırlanmıştır. Referans numune, 300 gr hidrolik kireç, 400 gr kiremit tozu, 300 gr mermer tozu, 600 gr dere kumu ve 400 gr su kullanılarak hazırlanmıştır. Lifler, 12 mm uzunluğunda ve toplam bağlayıcı miktarının %1'i (hacimsel) oranında 2,5 gr karışıma eklenmiştir. Taze harç özelliklerini ölçmek için yayılma testi yapılmıştır; %1 oranında keçi kılı ve cam elyafı katkılı harç için 27 cm, keten lifi katkılı harç için ise 25 cm yayılma değerlerine ulaşılmıştır. Deneysel sonuçlar, cam elyafı katkısının hem basınç dayanımında 2,86 MPa hem de eğilme dayanımında 2,45 MPa ile en yüksek artışı sağlayarak üstün mekanik performans sunduğunu göstermiştir. Bu sentetik lif, etkin çatlak köprüleme mekanizması sayesinde dayanımı iyileştirmiştir. Keçi kılı katkısı ise, su emme yüzdesini %11,80'e düşürerek referans harca göre en etkili hidrofobik etkiyi sağlamıştır. Buna karşın, keten lifi katkısı, basınç dayanımını hafifçe düşürmüş ve higroskopik yapısı

nedeniyle su emilimini referans harca göre artırarak (%15,55) diğer liflere kıyasla daha sınırlı mekanik ve fiziksel iyileşme sağlamıştır. Geliştirilen lif katkılı Horasan harcı karışımlarının hem yapısal hem de estetik açıdan özgün dokuyla bütünlük arz etmesi beklenmekte olup, bu çalışma tarihi yapıların korunmasına katkı sağlayacak yenilikçi ve sürdürülebilir bir çözüm önerisi sunmaktadır.

Anahtar Kelimeler: Restorasyon harçları, Horasan harcı, Hidrolik kireç, Keçi Kılı, Mermer Tozu, Keten Lifi, Cam Elyaf

ABSTRACT

This experimental study aims to enhance the mechanical and physical performance of traditional Horasan mortars based on the primary binder, lime (Ca(OH)_2). The research was conducted by integrating different fiber additions—flax fiber, goat hair, and glass fiber—into a reference mixture consisting of hydraulic lime, tile powder, marble powder, and sand. For this purpose, four separate sets of samples were prepared using 40×40×160 mm prism molds. The reference sample was prepared using 300 gr hydraulic lime, 400 gr tile powder, 300 gr marble powder, 600 gr river sand, and 400 gr water. The fibers were added to the three different fiber-reinforced mixtures at an amount of 2.5 gr, corresponding to 1% (by volume) of the total binder quantity, with a length of 12 mm. A spread test was applied to measure the fresh mortar properties, yielding spread values of 27 cm for the 1% goat hair and glass fiber mortars, and 25 cm for the flax fiber mortar. Experimental results indicate that the glass fiber addition provided the highest increase in both compressive strength 2,86 MPa and flexural strength 2.45 MPa, presenting superior mechanical performance. This synthetic fiber improved the strength through an effective crack-bridging mechanism, delaying the brittle failure of the mortar. The goat hair addition, while showing a mechanical improvement close to that of glass fiber, provided the most effective hydrophobic effect, reducing the water absorption percentage to 11.80% compared to the reference mortar. In contrast, the flax fiber addition slightly decreased the compressive strength and, due to its hygroscopic nature, increased the water absorption to 15.55% compared to the reference mortar, thus showing more limited mechanical and physical improvement compared to the other fibers. The developed fiber-reinforced Horasan mortar mixtures are expected to integrate with the original texture both structurally and aesthetically. In this respect, the study offers an innovative and sustainable solution contributing to the preservation of historical structures.

Keywords: Restoration mortars, Horasan mortar, Hydraulic lime, Goat Hair, Marble Powder, Flax Fiber, Glass Fiber

KRONİK BOYUN AĞRISI OLAN VE OLMAYAN BİREYLERDE DURUŞ, EKLEM HAREKETİ VE PROPRIYOSEPSİYONUN DEĞERLENDİRİLMESİ
EVALUATION OF POSTURE, JOINT MOVEMENT AND PROPRIOCEPTION IN INDIVIDUALS WITH AND WITHOUT CHRONIC NECK PAIN

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ÖZET

Amaç: Bu çalışmada, kronik boyun ağrısı (KBA) olan katılımcılarda postür, servikal eklem hareketi ve servikal propriosepsiyon değerlendirilerek sağlıklı bireylerle karşılaştırılması amaçlanmıştır.

Yöntemler: İstanbul Gelişim Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu'nda akademisyen olarak çalışan 40 KBA'lı birey ve 40 asemptomatik birey araştırmaya dahil edilmiştir. Ağrı şiddeti Görsel Analog Skala ile, servikal hareket açıklığı (ROM) dijital gonyometre ile, propriosepsiyon hissi hedef açı testi ve baş pozisyonlama testi ile, postür New York Postür Analiz Yöntemi (NYPAM) ile, kas kısalığı standart mezura ile ve boyun özrürlülük durumu boyun özrürlülük göstergesi ile değerlendirilmiştir.

Sonuçlar: KBA grubunun gece, aktivite sırasında ve istirahatteki ağrı şiddeti asemptomatik gruba göre daha yüksek bulunmuştur ($p<0,05$). KBA grubunun servikal ROM değerlerinin tüm yönlerde kontrol grubuna göre daha düşük olduğu görülmüştür ($p<0,05$). Pektoralis minör kas kısalığı açısından iki grup arasında fark saptanmadı ($p>0,05$). NYPAM skoru KBA grubunda kontrol grubuna göre daha düşüktü ($p<0,05$). BÖG anket skorlarının KBA grubunda kontrol grubuna göre daha yüksek olduğu görüldü ($p<0,05$). Tüm testlerde KBA grubunun eklem pozisyon hissi (EPH) hata değerlerinin kontrol grubuna göre daha yüksek olduğu görüldü ($p<0,05$). KBA grubunda ağrı şiddeti ile EPH hata miktarı arasında anlamlı bir ilişki saptanmadı ($p>0,05$).

Sonuç: Veriler KBA grubunda servikal ROM'un azaldığını göstermektedir. KBA grubunda postür değişiklikleri olduğu belirlendi. Ayrıca KBA grubunda servikal bölgede propriosepsiyon hissinde azalma olduğu belirlendi. Ancak KBA ile servikal propriosepsiyon hissi arasında bir ilişki saptanmadı. Ağrının doğası gereği karmaşık bir his olduğunu, boyun propriosepsiyonuyla doğrudan ilişkili olmayabileceğini ve belirli boyun ağrısı grupları üzerinde yapılan araştırmalarla daha net sonuçlar elde edilebileceğini düşünüyoruz.

Anahtar Kelimeler: Kronik Boyun Ağrısı, Duruş, Propriosepsiyon.

ABSTRACT

Objectives: This study aimed evaluate posture, cervical joint movement and cervical proprioception in participants with chronic neck pain (CNP) and compare them with healthy individuals.

Methods: Forty individuals with CNP who were academicians at Istanbul Gelisim University's Vocational School of Health Services and 40 asymptomatic individuals were included study. Pain intensity evaluated with Visual Analog Scale, cervical range of motion

(ROM) with digital goniometer, proprioception sense with target angle test and head repositioning test, posture with New York Posture Analysis Method (NYPAM), muscle shortness with standard tape measure and neck disability status with neck disability index.

Results: Pain intensity of CNP group at night, during activity, and rest was found higher than the asymptomatic group ($p<0.05$). It was observed cervical ROM values of CNP group were lower than the control group in all directions ($p<0.05$). There was no difference between two groups in terms of pectoralis minor muscle shortness ($p>0.05$). NYPAM score was lower in CNP group than the control group ($p<0.05$). It was observed that NDI questionnaire scores were higher in CNP group than control group ($p<0.05$). In all tests, joint position sense (JPS) error values of CNP group were found higher than control group ($p<0.05$). There was no significant relationship between pain intensity and JPS error amount in CNP group ($p>0.05$).

Conclusion: It was observed cervical ROM decreased in CNP group. It was determined that posture changes occurred in CNP group. In addition, it was determined there was a decrease in proprioception sense in cervical region in CNP group. However, no relationship was found between CNP and cervical proprioception sense. We think that pain is complex sensation by nature, it may not be directly associated with neck proprioception, and clearer results can be obtained through research on specific neck pain groups.

Keywords: Chronic Neck Pain, Posture, Proprioception.

**ELECTIONS AND DEMOCRACY: FROM PROMISES TO GOVERNANCE
PRACTICES – A COMPARATIVE PERSPECTIVE BETWEEN ITALY AND
ALBANIA**

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ABSTRACT

Free, fair, and competitive elections form the foundation of democratic governance, enabling citizens to legitimize political institutions through their votes. Without transparency and public oversight, electoral processes risk losing integrity and producing distorted political representation. This study examines Italy and Albania—two countries with different democratic trajectories—by analyzing their electoral systems, political finance regulations, and the relationship between electoral promises and actual governance practices.

Through a comparative analysis of the legal frameworks and the functioning of key institutions, this study underscores the importance of transparency and accountability in enabling electoral promises to be effectively transformed into concrete democratic outcomes. While Italy benefits from a established democratic tradition, Albania continues to implement reforms to strengthen electoral competitiveness and integrity.

The findings underscore the need to enhance institutional oversight, clarify political finance rules, and improve accountability mechanisms as essential steps toward increasing public trust and improving the quality of democratic governance.

Keywords: Elections; Democracy; Electoral promises; Political financing; Governance practices; Accountability; Electoral integrity.

MASTER ATLETLERİN MARATONLARA KATILIM MOTİVASYONLARI MOTIVATIONS FOR MASTER ATHLETES TO PARTICIPATE IN MARATHONS

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ÖZET

Master atletler, rekreatif amaçlarla düzenlenen ve yüksek katılımcı sayısına sahip spor etkinliklerinde yer almaktadır. Bu etkinlikler içinde maraton, master atletlerin en çok tercih ettiği branşların başında gelmektedir. Bu araştırmanın amacı ise master atletlerin maratona katılım motivasyon kaynaklarını derinlemesine incelemektir.

Bu çalışmada, maratona en az bir kez katılmış olan dokuz master atlet ile yarı yapılandırılmış mülakatlar yapılmıştır. Veriler bu mülakatlardan elde edilmiştir.

Master atletlerin maratona katılma kararlarını etkileyen faktörlerin ise maraton deneyimleri, fiziksel sağlık, sosyal etkileşim, aidiyet, kişisel gelişim, başarıma arzusu, yardımseverlik, toplumsal katkı olduğu tespit edilmiştir.

Sonuç olarak, araştırmanın bulguları fiziksel sağlık ve zindelikten sosyal ilişkiler ve aidiyet duygusuna, bireysel gelişimden toplumsal sorumluluklara uzanan geniş bir yelpazede, maraton koşmanın master atletler için önemli faydalar sağladığını göstermektedir.

Anahtar Kelimeler: Master Atlet, Maraton, Geniş Katılımlı Spor Etkinlikleri, Motivasyon

ABSTRACT

Master athletes participate in sporting events organised for recreational purposes and with high participant numbers. Among these events, the marathon ranks as the most preferred discipline for master athletes. The aim of this study is to examine in depth the sources of motivation for master athletes' participation in marathons.

In this study, semi-structured interviews were conducted with nine master athletes who had participated in marathons at least once. The data were obtained from these interviews.

The factors influencing master athletes' decisions to participate in marathons were found to be marathon experience, physical health, social interaction, belonging, personal development, desire to succeed, altruism, and social contribution.

In conclusion, the findings of the research demonstrate that marathon running provides significant benefits for master athletes across a wide range, from physical health and fitness to social relationships and a sense of belonging, and from personal development to social responsibility.

Keywords: Master Athlete, Marathon, Mass Participant Sports Events, Motivation

**FARKLI ŞEKİLLERE SAHİP MIKRO KANALLI ISI ALICILARININ
HESAPLAMALI ISI TRANSFERİ ANALIZI**

**COMPUTATIONAL HEAT TRANSFER ANALYSIS OF MICROCHANNEL HEAT
SINKS WITH DIFFERENT SHAPES**

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ABSTRACT

Heat sinks are one of the most efficient devices of thermal management engineering for passive cooling purposes. Their application areas include vehicle heat exchangers, electronic device cooling and aerospace industry. Geometrical modification of microchannels significantly influences fluid flow characteristics, pressure drop, and convective heat transfer performance. This study presents a three-dimensional computational analysis of microchannel heat sinks with various offset rib geometries, focusing on their flow and thermal performance under steady, laminar flow condition. The incompressible Navier–Stokes and energy equations were numerically solved to obtain detailed velocity, pressure, and temperature behavior for each microchannel configuration for single phase. Numerical code is validated with the experimental data from the literature. Key performance metrics, including Nusselt number and friction factor, were evaluated to quantify the heat transfer enhancement and hydraulic resistance associated with different shapes. The results reveal that geometric modification significantly alters thermal-hydraulic behavior, with certain channel designs offering improved convective heat transfer at the expense of increased pressure drop. Beyond electronics cooling, the findings have direct relevance for emerging automotive applications-particularly in electric vehicle battery thermal management, power electronics cooling.

Keywords: microchannel heat sink, CFD, heat transfer, pressure drop

ÖZET

Isı alıcıları, pasif soğutma amaçlı termal yönetim mühendisliğinin en verimli cihazlarından biridir. Uygulama alanları arasında taşıt ısı eşanjörleri, elektronik cihaz soğutması ve havacılık endüstrisi yer almaktadır. Mikro kanalların geometrik modifikasyonu, akışkan akış özelliklerini, basınç düşüşünü ve konvektif ısı transferi performansını önemli ölçüde etkilemektedir. Bu çalışma, çeşitli kanal çıkıntı geometrisine sahip mikro kanal ısı alıcılarının üç boyutlu hesaplamalı analizini sunmakta ve kararlı, laminar akış koşullarında akış ve termal performanslarını incelemektedir. Sıkıştırılamaz Navier-Stokes ve enerji denklemleri, tek fazlı her bir mikro kanal konfigürasyonu için ayrıntılı hız, basınç ve sıcaklık davranışlarını elde etmek amacıyla sayısal olarak çözülmüştür. Sayısal kod, literatürdeki deneysel verilerle doğrulanmıştır. Nusselt sayısı ve sürtünme faktörü gibi temel performans ölçütleri, farklı şekillerle ilişkili ısı transferi artışı ve hidrolik direnci ölçmek için değerlendirilmiştir. Sonuçlar, geometrik modifikasyonun termal-hidrolik davranışı önemli ölçüde değiştirdiğini ve belirli kanal tasarımlarının artan basınç düşüşü ile iyileştirilmiş konvektif ısı transferi sağladığını ortaya koymaktadır. Elektronik soğutmanın ötesinde, bulgular, özellikle elektrikli araç batarya termal yönetimi ve güç elektroniği soğutması gibi yeni otomotiv uygulamaları için doğrudan önem taşımaktadır.

Anahtar Kelimeler: mikro kanal ısı alıcı, HAD, ısı transferi, basınç düşüşü

ARTIFICIAL INTELLIGENCE-ENHANCED RELAY SYSTEMS FOR DYNAMIC PROTECTION OF THREE PHASE INDUCTION MOTORS

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Abstract

Three-phase induction motors are widely used in industry, yet their protection still relies mainly on fixed-threshold relays that offer limited visibility of incipient faults. This paper proposes an **artificial intelligence-enhanced relay system** that augments a conventional motor protection relay with a multi-sensor data acquisition unit for dynamic protection of three-phase induction motors. A dedicated test bench combining a three-phase induction motor, a programmable AC source and adjustable mechanical loading is used to emulate nominal operation, unbalance, phase loss, reverse phase, voltage sag, undervoltage and pre-fault sag conditions. From these experiments, a multi-domain dataset of 40 877 time-stamped records and 34 recorded variables is collected; these variables are used as candidate features, including phase voltages and currents, active powers, power-factor indices, speed, vibration, temperatures and derived indicators. The hardware relay state and ground-truth operating scenarios are jointly used to define ten operating classes, yielding a physically meaningful multi-class labelling. Several supervised learning models—Random Forest, Decision Tree, CatBoost, Logistic Regression, Gaussian Naive Bayes and LightGBM—are trained and evaluated on a stratified 70/30 train–test split. Tree-based ensembles deliver near-perfect performance, with Random Forest achieving 99.74% overall accuracy and a macro F1-score of 0.997, while Logistic Regression provides a competitive lightweight baseline. Analysis of confusion matrices and feature importances shows that phase powers, currents, power-factor indices and vibration are the most discriminative predictors, and that both fault and pre-fault conditions can be reliably identified. The results demonstrate that data-driven intelligence can be tightly integrated with conventional relay hardware to enable high-resolution diagnostics and early warning capabilities for the dynamic protection of three-phase induction motors.

Keywords: Three-Phase Induction motor; Motor Protection Relay; Machine Learning; Fault Diagnosis; Ensemble Learning; Multi-Sensor Data Acquisition; AI-Enhanced relay.

**KIRMIZI ÇAMUR ATIĞININ GEOTEKNİK VE YAPISAL UYGULAMALARDA
DEĞERLENDİRİLMESİ: BİR LİTERATÜR İNCELEMESİ**
**STUDY AND EVALUATION OF RED MUD WASTE IN GEOTECHNICAL AND
STRUCTURAL APPLICATIONS: A LITERATURE REVIEW)**

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ÖZET

Boksit cevherinin Bayer prosesi ile işlenmesi sonucu ortaya çıkan ve literatürde "red mud" olarak bilinen kırmızı çamur atığı, dünya genelinde milyonlarca ton hacme ulaşan yüksek hacimli bir sanayi atığıdır. Bu atığın depolanması, ciddi çevresel riskler ve ekonomik maliyetler doğurduğu için, geri kazanım yöntemleri üzerine yapılan çalışmalar büyük önem kazanmıştır. Bu atık, içerdiği mineral bileşenler sayesinde inşaat ve geoteknik sektörlerinde değerli bir kaynak olarak değerlendirilme potansiyeline sahiptir. Bu çalışmada, kırmızı çamur atığının inşaat sektöründeki potansiyel yapısal ve geoteknik kullanım alanları, temel özellikleri ve yeniden kullanımın önündeki teknik engeller incelenmiştir. Yapılan değerlendirmeler, bu atığın çimento üretimi, temel tabaka uygulamaları, beton ve geopolimer üretimi gibi alanlarda ekonomik ve çevresel sürdürülebilirlik açısından önemli katkılar sunabileceğini göstermektedir. Kırmızı çamurun özellikle alt temel/temel tabakalarında kullanılması, doğal malzeme ihtiyacını azaltarak maliyet avantajı sağlamak ve atık yönetimine katkıda bulunmaktadır.

Anahtar Kelimeler: Kırmızı Çamur, Atık, Geoteknik Uygulamalar, Yapısal Malzeme, Geopolimer.

ABSTRACT

Red mud, a waste product produced by the processing of bauxite ore using the Bayer process and known in the literature as "red mud," is a high-volume industrial waste product reaching millions of tons worldwide. Because its storage poses significant environmental risks and economic costs, studies on recycling methods have gained significant importance. This waste, thanks to its mineral components, has the potential to be utilized as a valuable resource in the construction and geotechnical sectors. This study examines the potential structural and

geotechnical uses of red mud waste in the construction sector, its basic properties, and the technical barriers to its reuse. The assessments indicate that this waste can make significant contributions to economic and environmental sustainability in areas such as cement production, base course applications, concrete, and geopolymer production. The use of red mud, particularly in subbase/foundation layers, provides cost advantages by reducing the need for natural materials and contributes to waste management.

Keywords: Red Mud, Waste, Geotechnical Applications, Structural Material, Geopolymer.

DİJİTALLEŞEN İŞ HAYATINA UYUM: YENİ TEKNOLOJİLER VE MEZUNLARDAN BEKLENTİLER¹

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Özet

Her geçen gün dijitalleşen iş hayatına uyum sağlama, kamu sektörü, özel sektör ve bu alanların dışında kalan kâr amacı gütmeyen sektörlerde faaliyet gösteren örgütler ile bu örgütlerde çalışan insan sermayesi açısından giderek önem kazanmaktadır. Endüstri devrimleri bağlamında son yıllara damgasını vuran Endüstri 4.0 devriminin tetiklediği yeni teknolojiler dünyada işgücünün niteliği ve istihdamın yapısını hızla değiştirmektedir. Diğer taraftan yeni teknolojilerin üreticisi ve kullanıcısı olan ülkeler bloğu ile müşterisi konumundaki ülkeler bloğu arasındaki makas hızla açılmaktadır. Mega bir trend halinde yayılan yeni teknolojiler, mevcut mesleklerdeki çalışanlardan beklentileri farklılaştırmakta; daha önce mevcut olmayan yeni mesleklerin ortaya çıkmasına neden olmaktadır. Mezunların yeni teknolojiler hakkındaki farkındalığı günlük hayatta kullanılan teknolojiler veya bazen sadece bir başlıktan öteye geçememektedir. Üniversite öğrencilerinin alanları ve çalışacakları sektörler gözetilmeksizin dijital iş hayatına nasıl daha iyi uyum sağlayacaklarını ve yeni teknolojileri işlerine nasıl entegre edeceklerini öğrenmeleri gerekmektedir. Belirli temel derslerin eklenmesi ve yüzeysel farkındalık geliştirilmesinin ötesine geçilmelidir. Bu uyum, Bloom Taksonomisi'nin alt basamaklarında kalmadan, teknolojinin işlerin gerçek bir parçası haline getirilmesine olanak veren uygulamaların müfredata eklenmesiyle yakalanabilir.

Anahtar kelimeler: dijitalleşen iş hayatına uyum, yeni teknolojiler, mezunlardan beklentiler, mesleki yeterlilikler, sektörler

ADAPTING TO DIGITALIZED BUSINESS LIFE: NEW TECHNOLOGIES AND EXPECTATIONS FROM GRADUATES

Abstract

Adapting to the increasingly digitalized business world is becoming increasingly important for organizations operating in the public, private, and non-profit sectors, as well as the human capital working within them. New technologies, triggered by the Industry 4.0 revolution, which has marked recent years within the context of industrial revolutions, are rapidly changing the nature of the global workforce and the structure of employment. Meanwhile, the gap between the block of countries that produce and use new technologies and the block of countries that serve as their customers is rapidly widening. New technologies, spreading as a megatrend, are changing the expectations of employees in existing professions and giving rise to new professions that did not previously exist. Graduates' awareness of new technologies often goes beyond the technologies used in daily life, or sometimes simply a topic. University students,

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regardless of their field or sector of employment, need to learn how to better adapt to the digital business world and integrate new technologies into their work. Beyond the addition of specific core courses and superficial awareness-raising, we must move beyond this. This harmony can be achieved by adding applications to the syllabus that allow technology to become a real part of the work, without remaining at the lower levels of Bloom's Taxonomy.

Keywords: adaptation to digitalized business life; new technologies; expectations from graduates, professional qualifications, sectors

DÜNYA DİJİTAL REKABETÇİLİK SIRALAMASINDA TÜRKİYE’NİN KONUMU

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Özet

Uluslararası Yönetim Geliştirme Enstitüsü (International Institute for Management Development-IMD) tarafından geliştirilen ve 69 ülkenin verilerinin incelenmesiyle belirlenen Dünya Dijital Rekabetçilik Sıralaması (World Digital Competitiveness Ranking) endeksine göre 2025 yılında ilk 10 ülke sırasıyla: İsviçre, ABD, Singapur, Hong Kong SAR, Danimarka, Hollanda, Kanada, İsveç, BAE, Tayvan (Çin Taipei) olarak tespit edilmiştir. 2025 yılı genel sıralamasında Türkiye 63.cü sırada yer almaktadır. Bu çalışmada Dünya Dijital Rekabetçilik Sıralaması endeksinde ana ve alt faktörlere göre belirlenen sıralamaların Türkiye’nin dijital rekabetçilik durumu bağlamında ne anlama geldiği değerlendirilmiş; dijital rekabetçiliğin artırılması yönünde neler yapılması gerektiği konusunda öneriler sunulmuştur.

Anahtar kelimeler: Uluslararası Yönetim Geliştirme Enstitüsü, Dünya Dijital Rekabetçilik Sıralaması, Türkiye, dijital rekabet

TÜRKİYE'S POSITION IN THE WORLD DIGITAL COMPETITIVENESS RANKING

Abstract According to the World Digital Competitiveness Ranking index, developed by the International Institute for Management Development (IMD) and based on data from 69 countries, the top 10 countries for 2025 are: Switzerland, the United States, Singapore, Hong Kong SAR, Denmark, the Netherlands, Canada, Sweden, the UAE, and Taiwan (Chinese Taipei). Türkiye ranks 63rd in the 2025 overall ranking. This study evaluates the significance of the rankings, determined by the main and sub-factors in the World Digital Competitiveness Ranking index, in the context of Türkiye's digital competitiveness status and offers recommendations on what needs to be done to increase digital competitiveness.

Keywords: International Institute for Management Development, World Digital Competitiveness Ranking, Türkiye, digital competition

**KÜLTÜRLER ARASI YEMEK PAYLAŞIMI VE RİTÜEL UYGULAMALAR: ETNİK MUTFAK GELENEKLERİNİN KARŞILAŞTIRMALI İNCELEMESİ
(INTERCULTURAL MEAL SHARING AND RITUAL PRACTICES:
A COMPARATIVE STUDY OF ETHNIC CULINARY TRADITIONS)**

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Özet

Bu çalışma, kültürler arası yemek paylaşımı ve ritüel uygulamalar bağlamında, etnik mutfak geleneklerinin toplumsal ve sembolik işlevlerini karşılaştırmalı bir biçimde incelemeyi amaçlamaktadır. Yemek paylaşımı, bireylerin sofrada bir araya gelerek sosyal bağ kurmalarını, kültürel kimliklerini ifade etmelerini ve toplumsal normların yeniden üretilmesini sağlayan temel bir sosyo-kültürel pratiktir. Literatürde yemek paylaşımı, yalnızca beslenme eylemi olarak değil, aynı zamanda toplumsal etkileşim, ritüel uygulama ve kültürel kimlik üretimi boyutlarıyla ele alınmaktadır. Dünya genelinde yemek paylaşımı uygulamaları, hem evrensel hem de kültüre özgü biçimlerini ortaya koymaktadır. Japonya’da geleneksel yemek paylaşımı, misafirperverlik ve saygı ritüelleriyle birleşerek estetik ve sembolik bir deneyim oluşturur. Bu bağlamda, sofrada bir araya gelme eylemi yalnızca beslenme amacı taşımamakta, aynı zamanda sosyal ilişkilerin düzenlenmesi ve kültürel normların yeniden üretimi açısından kritik bir rol oynamaktadır. Brezilya’da düzenlenen toplu et şölenleri (churrasco), toplumsal dayanışmayı, cömertliği ve grup içi işbirliğini pekiştiren ritüel etkinlikler olarak öne çıkmaktadır. Afrika’nın bazı bölgelerinde, özellikle Etiyopya’da, geleneksel yemekler ve injera gibi toplu yemek uygulamaları, toplumsal dayanışmayı, nesiller arası kültürel aktarımı ve kolektif kimliğin güçlendirilmesini sağlayan merkezi ritüel uygulamalar olarak işlev görmektedir. Türkiye bağlamında, Anadolu mutfağına özgü yemek paylaşımı gelenekleri kültürel kimliğin ve toplumsal bağların inşasında önemli bir alan olarak görülmektedir. Bayram, düğün ve cenaze gibi toplumsal geçiş ritüellerinde kurulan sofralar, aile içi ve toplumsal ilişkilerin güçlendirilmesini sağlarken, nesiller arası kültürel aktarımı da mümkün kılmaktadır. “Tören sofrası” ve “misafir yemeği” pratikleri, yemek paylaşımının hem ritüel hem de sosyal işlevlerini görünür kılmakta, kültürel değerlerin aktarımı ve toplumsal bütünleşme açısından merkezi bir rol üstlenmektedir. Bu çalışma, farklı coğrafyalardaki yemek paylaşımı ve ritüel uygulamalarını karşılaştırmalı bir perspektifle değerlendirerek, yemek paylaşımının yalnızca beslenme eylemi olmadığını; aynı zamanda toplumsal bağları güçlendiren, kültürel kimlik inşa eden ve ritüel sürekliliğini sağlayan kritik bir uygulama olduğunu göstermektedir.

Anahtar Kelimeler: Gastronomi, etnik mutfak, kültürel kimlik, yemek ritüelleri

Abstract

This study aims to comparatively examine the social and symbolic functions of ethnic culinary traditions within the context of intercultural meal sharing and ritual practices. Meal sharing constitutes a fundamental socio-cultural practice that enables individuals to gather at the table, establish social bonds, express cultural identity, and reproduce social norms. In the literature, meal sharing is addressed not only as a nutritional act but also in terms of social interaction, ritual performance, and cultural identity formation. Globally, meal sharing practices illustrate both universal and culturally specific dimensions. In Japan, traditional meal sharing is

intertwined with hospitality and social respect rituals, creating an experience that is both aesthetic and symbolic. In this context, gathering around the table serves not only the purpose of nourishment but also plays a critical role in regulating social relationships and reproducing cultural norms. In Brazil, communal meat feasts (churrasco) function as ritual events that reinforce social solidarity, generosity, and intra-group cooperation. In certain regions of Africa, particularly Ethiopia, traditional meals such as *injera* serve as central ritual practices that promote social cohesion, intergenerational cultural transmission, and the reinforcement of collective identity. In the Turkish context, meal sharing traditions in Anatolia are an important arena for constructing cultural identity and social bonds. Tables organized for holidays, weddings, and funerals strengthen both intra-family and societal relations while facilitating intergenerational transmission of cultural knowledge. Practices such as the “ritual table” and “guest meal” make visible the dual social and ritual functions of meal sharing, highlighting its central role in the transmission of cultural values and social cohesion. By comparatively evaluating meal sharing and ritual practices across different geographical contexts, this study demonstrates that meal sharing is not merely a nutritional act but a critical practice that strengthens social bonds, constructs cultural identity, and ensures ritual continuity.

Keywords: Gastronomy, Ethnic culinary, Cultural identity, Meal rituals

MODERN SAĞLIKLI BESLENME TRENDLERİNİN TOPLUMSAL VE KÜLTÜREL YANSIMALARI: SİSTEMATİK BİR DERLEME

SOCIAL AND CULTURAL IMPLICATIONS OF MODERN HEALTHY EATING TRENDS: A SYSTEMATIC REVIEW

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Özet

Son yıllarda sağlıklı beslenme akımlarının, bireylerin yiyecek seçimlerini etkilemenin ötesine geçerek toplumsal kimliklerin, sosyal statü göstergelerinin ve kültürel normların şekillenmesinde belirleyici bir unsur hâline geldiği görülmektedir. Bu çalışma, sağlıklı beslenme eğilimlerini sosyolojik bir perspektiften ele almak amacıyla ulusal ve uluslararası literatürü sistematik biçimde incelemektedir. İncelenen çalışmalar; organik ürün tüketimi, fit yaşam anlayışı, clean eating yaklaşımı, keto beslenme biçimleri ve aralıklı oruç gibi popüler trendlerin sosyal sınıflar arasındaki farklılıklarla, kimlik oluşum süreçleriyle ve dijital kültür aracılığıyla yayılma dinamikleriyle bağlantılı olduğunu ortaya koymaktadır. Bulgular, sağlıklı beslenmenin yalnızca bireysel bir tercih ya da yaşam tarzı uygulaması olmadığını; medya, toplumsal beklentiler ve statü temelli kodlar tarafından şekillenen kültürel bir pratik niteliği taşıdığını göstermektedir. Özellikle genç kuşakları ve sosyal medya kullanıcılarını konu alan araştırmalar, dijital platformların yiyecek trendlerinin hızla yayılmasındaki kritik rolüne işaret etmektedir. Bu derleme, sağlıklı beslenme akımlarının sosyolojik yönlerine ilişkin kavramsal bir çerçeve sunmakta ve gelecekte yapılacak çalışmalar için önemli çıkarımlar sağlamaktadır. Sonuç olarak, modern beslenme eğilimleri yalnızca bireysel tercihlerin ürünü değil, sosyal, kültürel ve ekonomik dinamiklerin etkisiyle sürekli değişen bir yapı olarak karşımıza çıkmaktadır. Mevcut literatür, sağlıklı beslenme pratiklerinin sosyal kimlik oluşturma süreçleri ve kültürel normlarla sıkı bir ilişki içinde olduğunu göstermektedir. Bununla birlikte, dijitalleşmenin etkisiyle yemek kültürünün anlamı, sunumu ve yayılma biçimleri önemli ölçüde dönüşmekte, beslenme alışkanlıkları yeni toplumsal bağlamlar içinde yeniden şekillenmektedir.

Anahtar kelimeler: Sağlıklı beslenme, Gastronomi, Sağlıklı beslenme trendleri, Sosyolojik yaklaşım.

Abstract

In recent years, healthy eating trends have moved beyond merely influencing individuals' food choices and have become a determining factor in shaping social identities, indicators of social status, and cultural norms. This study systematically reviews national and international literature to examine healthy eating tendencies from a sociological perspective. The reviewed studies reveal that popular trends such as organic food consumption, the fit lifestyle, clean eating approaches, ketogenic diets, and intermittent fasting are closely associated with social class distinctions, identity formation processes, and the dynamics of dissemination through digital culture. The findings indicate that healthy eating is not merely an individual preference or lifestyle choice but rather a cultural practice shaped by media influences, societal expectations, and status-based codes. Research focusing on younger generations and social

media users highlights the critical role digital platforms play in the rapid spread of food trends. This review offers a conceptual framework for understanding the sociological dimensions of healthy eating trends and provides important insights for future research. In conclusion, modern dietary trends are not solely the product of individual preferences but constitute an ever-evolving structure shaped by social, cultural, and economic dynamics. The existing literature demonstrates that healthy eating practices are closely linked to social identity formation processes and cultural norms. Moreover, the impact of digitalization has significantly transformed the meaning, presentation, and dissemination of food culture, leading to the reshaping of eating habits within new social contexts.

Keywords: Healthy eating, Gastronomy, Healthy eating trends, Sociological approach

SİBER GÜVENLİKTE LLM HALÜSİNASYONLARINI AZALTMAYA YÖNELİK RİSK TEMELLİ BİR YAKLAŞIM: LLM-HRM ÇERÇEVESİ

A RISK-BASED APPROACH TO REDUCING LLM HALLUCINATIONS IN
CYBERSECURITY: THE LLM-HRM FRAMEWORK

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ÖZET

Büyük dil modellerinin siber güvenlik alanında kullanımı, beraberinde “halüsinasyon” olarak tanımlanan uydurma içerik üretme riskinin ele alınmasını bir gereklilik haline getirmiştir. Çalışmamız halüsinasyon riskini azaltmak için LLM-HRM (Hallucination Risk Management) adlı risk yönetimi temeline dayanan bir çerçeve önermektedir.

Büyük dil modelleri tehdit istihbaratı, olay yönetimi ve karar destek süreçlerinde iyi bir performans sergilese bile uydurma içerik üretmesi kritik güvenlik operasyonlarında hatalı analizler yapılmasına ve kararlar alınmasına yol açabilmektedir. Yapılan literatür incelemelerinde halüsinasyonların veri kalitesi, model eğitimi, çıkarım süreçleri gibi bir çok faktörden kaynaklandığını ve incelenen çalışmalar en gelişmiş modellerde dahi halüsinasyon riskinin mevcut olduğunu ortaya koymaktadır.

Çalışmamız halüsinasyon riskinin olay önem derecesine bağlı olarak yönetilmesini temel alan LLM-HRM çerçevesini geliştirmiştir. Sunduğumuz bu çerçeve Prompt Engineering , RAG(Retrieval-Augmented Generation) ve Self Consistency gibi azaltma tekniklerinin yüksek önem derecesine sahip olaylarda kademeli olarak bir arada kullanılmasını, düşük önem derecesine sahip olaylarda ise halüsinasyon-maliyet dengesi gözetilerek daha sınırlı teknikler uygulanmasını önermektedir. LLM-HRM çerçevemiz GPT-5 modeli üzerinde 200 siber güvenlik odaklı girdi ile test edilmiştir. Yalın LLM yanıtı ile %40 olan halüsinasyon oranı, Prompt Engineering, RAG ve Self-Consistency’nin kademeli uygulanmasıyla %8’e düşürülmüştür. Bulgular, katmanlı azaltma yaklaşımının halüsinasyon oranlarını önemli biçimde azalttığını ve risk yönetimi ile uyumlu bir çözüm sunduğunu göstermektedir.

Sonuç olarak halüsinasyon varlığı tamamen ortadan kaldırılamasa da, önem derecesine bağlı azaltma teknikleri uygulanarak büyük dil modellerinin çıktı güvenilirliğinin arttırılabileceği gözlemlenmektedir.

Anahtar kelimeler: Siber Güvenlik, LLM, Halüsinasyon, Risk Yönetimi

ABSTRACT

The use of large language models (LLMs) in the field of cybersecurity has made it necessary to address the risk of fabricated outputs, referred to as “hallucinations.” Our study proposes a framework based on risk management, called LLM-HRM (Hallucination Risk Management), to mitigate hallucination risks.

Although large language models (LLMs) demonstrate strong performance in threat intelligence, incident management, and decision-support processes, their tendency to generate fabricated content can lead to inaccurate analyses and decisions in critical security operations. The literature review indicates that hallucinations stem from multiple factors, including data quality, model training, and inference processes, and the examined studies show that hallucination risks are present even in the most advanced models.

Our study has developed the LLM-HRM framework, which is based on managing hallucination risk according to the incident severity level. The proposed framework suggests the gradual combined use of mitigation techniques such as Prompt Engineering, RAG (Retrieval-Augmented Generation), and Self-Consistency for incidents with high severity, while recommending more limited techniques for incidents with low severity by considering the hallucination–cost balance. The LLM-HRM framework was tested on the GPT-5 model using 200 cybersecurity-focused inputs. The hallucination rate, which was 40% with the plain LLM response, decreased to 8% through the gradual application of Prompt Engineering, RAG, and Self-Consistency. The findings show that the layered mitigation approach significantly reduces hallucination rates and provides a solution consistent with risk management.

In conclusion, although the presence of hallucinations cannot be completely eliminated, it is observed that the reliability of outputs produced by large language models can be increased by applying severity-based mitigation techniques.

Keywords : Cybersecurity, LLM, Hallucination, Risk Management

**MUTFAKTAKİ İÇECEK DEMLEME ve HAZIRLAMA ALETLERİNDEKİ
DAMLATMA PROBLEMİ VE İNCELENMESİ**
A STUDY ON DRIPPING ISSUES in HOUSEHOLD BEVERAGE BREWING and
PREPARATION TOOLS

Batuhan GÖÇEN

Korkmaz Mutfak Eşyaları San. Tic. A.Ş. A-Ge Merkezi

ÖZET

Mutfaklarda çaydanlık, kahve cezvesi ve su ısıtıcısı gibi demleme ve içecek hazırlama gereçlerinin kullanımı, özellikle çay ve kahve kültürünün yoğun olduğu toplumlarda gündelik yaşamın ayrılmaz bir parçasıdır. Ancak, bu gereçlerin tasarımındaki en yaygın ve can sıkıcı sorunlardan biri, sıvıların doldurulması veya boşaltılması sırasında meydana gelen istenmeyen damlama, sızdırma ve dökülmelerdir. Literatürde "Çaydanlık Etkisi" olarak adlandırılan bu olgu, sadece ürün israfına ve kirlenmeye yol açmakla kalmaz, aynı zamanda sıcak sıvılarla yanma riski oluşturarak ciddi bir güvenlik tehlikesi de teşkil eder. Bu çalışma, Türkçe literatürde yeterince incelenmemiş olan bu sorunu; akışkanlar mekanik, malzeme bilimi, ergonomi ve mühendislik tasarımı disiplinlerini bir araya getirerek ele almayı amaçlamaktadır. Bu çalışma kapsamında Google Akademik, WIPO (World Intellectual Property Organization) ve Türk Patent veri tabanları taranarak, "çaydanlık etkisi", "emzik ergonomisi" ve "damlama önleyici tasarım" gibi anahtar kelimelerle akademik makaleler, tezler ve patentler incelenmiştir. Elde edilen bulgular, çaydanlık etkisinin temel olarak sıvının düşük akış hızlarında, ileri momentumu ile kılcal yapışma kuvveti arasındaki dengesizlikten kaynaklandığını göstermektedir. Sorunun çözümü için dört temel alan öne çıkmaktadır: 1) Emzik Geometrisi: Sıvının yüzeye yapışmasını engellemek için emzik dudağının keskin (optimum ≈ 0.48 mm), ince ve aşağı doğru kıvrımlı olması kritik bir tasarım parametresidir. 2) Malzeme Bilimi: Yüzeyin ıslanabilirliği temel bir faktördür; süperhidrofobik kaplamalar, kılcal yapışmayı minimize ederek düşük akış hızlarında dahi damlamayı kesin olarak önleyebilmektedir. 3) Ergonomi: Kullanıcıların dökülme endişesiyle yavaş dökme eğilimi, ironik bir şekilde sorunu tetikleyebilmektedir; bu nedenle sap tasarımı ve ağırlık merkezinin optimizasyonu kontrollü akışı stabilize eder. 4) Üretim: Kaynak ve montaj adımlarındaki geometrik tolerans sapmaları damlama riskini artırabilmektedir. Sonuç olarak, "çaydanlık etkisi"nin önlenmesi, keskin kenarlı geometrik optimizasyon, hidrofobik yüzey mühendisliği ve kullanıcı odaklı ergonomik tasarımların birleştirildiği bütünsel ve hibrit bir mühendislik yaklaşımı gerektirmektedir.

Anahtar Kelimeler: çaydanlık etkisi, emzik ergonomisi, mutfak aletlerinde damlatma, çaydanlık, cezve

ABSTRACT

The use of brewing and beverage preparation appliances in kitchens, such as teapots, coffee pots (cezves), and kettles, is an integral part of daily life, particularly in societies with a strong tea and coffee culture. However, one of the most common and vexing problems in the design of these utensils is the undesirable dripping, leaking, and spilling that occurs while pouring liquids. This phenomenon, known in the literature as the "teapot effect" not only leads to product waste and spillage but also poses a significant safety hazard due to the risk of burns from hot liquids. The purpose of this review study is to investigate this problem which is considered inadequately addressed, particularly in the Turkish literature through a multidisciplinary approach encompassing fluid mechanics, material science, ergonomics, and engineering design. In this study, academic articles, theses, and patents were identified by searching Google Scholar, WIPO, and Turkish Patent databases using keywords such as "teapot

effect", "spout ergonomics" and "anti-drip design." The findings indicate that the teapot effect primarily stems from an imbalance between the fluids forward momentum and the capillary adhesion force, particularly at low flow rates. Four key areas have been identified for resolving this issue: 1) Spout Geometry: A critical design parameter is the spout lip, which must be sharp (optimum ≈ 0.48 mm), thin, and curved downward to prevent liquid from adhering to the surface. 2) Material Science: Surface wettability is a fundamental factor; superhydrophobic coatings can definitively prevent dripping, even at low flow rates, by minimizing capillary adhesion. 3) Ergonomics: Users' tendency to pour slowly due to fear of spillage can ironically exacerbate the problem; thus, handle design and optimization of the center of gravity are crucial for stabilizing controlled pouring. 4) Manufacturing: Deviations in geometric tolerances during welding and assembly processes can increase the risk of dripping. In conclusion, preventing the "teapot effect" necessitates a holistic and hybrid engineering approach that integrates sharp-edged geometric optimization, hydrophobic surface engineering, and user-centric ergonomic design.

Key words: teapot effect, spout ergonomics, dripping in kitchen appliances, teapot, coffee pot

**TÜRKİYE’DE TARIMSAL FAALİYETLERİN SOSYO-EKONOMİK AÇIDAN
DEĞERLENDİRİLMESİ: ÇANKIRI KIZILIRMAK ÖRNEĞİ**
**SOCIO-ECONOMIC EVALUATION OF AGRICULTURAL ACTIVITIES IN
TURKIYE: CANKIRI KIZILIRMAK EXAMPLE**

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ÖZET

Bu çalışma, tarımsal faaliyetlerin bölgesel kalkınma ve sosyoekonomik yapı üzerindeki etkilerini incelemeyi amaçlamaktadır. Araştırma kapsamında tarımsal üretimin farklı alt sektörleri özellikle çeltik üretimi, kavun üretimi, sebzecilik ve bahçe tarımı ele alınmış; üretim desenleri ile gelir dağılımı, istihdam ve yaşam standartları arasındaki ilişkiler analiz edilmiştir. Sosyoekonomik analizler, tarımsal üretim faaliyetlerinin sadece ekonomik değil, aynı zamanda sosyal refahın sürdürülebilirliğinde de önemli bir rol oynadığını ortaya koymaktadır. Çalışmada, bölgesel kalkınmanın sağlanabilmesi için tarımsal verimliliği artırmaya, üretim çeşitliliğini desteklemeye ve çiftçilerin sosyal-ekonomik koşullarını iyileştirmeye yönelik politika önerilerine de yer verilmiştir.

Çalışmada Çankırı İli Kızılırmak ilçesi çalışma alanı olarak seçilmiştir. Türkiye’nin Orta Anadolu bölgesinde yer alan Çankırı iline bağlı Kızılırmak ilçesi; Kızılırmak havzası içerisinde hem sulanabilir tarım arazileri hem de yakın gelecekte sulamaya açılacak alanlar ile önemli tarım potansiyeline sahiptir. Aynı zamanda ilçenin en önemli tarım alanları yaklaşık 400-450 metre rakıma sahip olup, Orta Kızılırmak Havzası içerisinde sıcaklık ortalaması en yüksek yerlerden biridir. Kızılırmak nehri bu bölümün ortasından geçmektedir. Araştırmada; verimli tarım arazilerinin yanında bahsedilen özelliklerinden dolayı önemli tarım potansiyeline sahip olan ilçede yerleşik tarımsal faaliyetlerde bulunan çiftçileri tarımsal üretimden elde edilen gelir kaynaklarının sosyo-ekonomik etkileri incelenmiştir. Bulgular, tarımsal üretim faaliyetleri ve çeşitliliğin sadece ekonomik refah değil, aynı zamanda sosyal yaşam ve kırsal kalkınma üzerinde de önemli bir rol oynadığını ortaya koymaktadır.

Anahtar Kelimeler: Çankırı Kızılırmak, tarımsal üretim, üretim çeşitliliği, sosyo-ekonomik analiz

ABSTRACT

This study aims to examine the impact of agricultural activities on regional development and the socioeconomic structure. Within the scope of the research, various sub-sectors of agricultural production particularly paddy cultivation, melon production, vegetable farming, and horticulture were analyzed to explore the relationships between production patterns and income distribution, employment, and living standards. Socioeconomic assessments reveal that agricultural production activities play a significant role not only in economic development but also in the sustainability of social welfare. The study also presents policy recommendations aimed at enhancing agricultural productivity, supporting production diversification, and improving the socio-economic conditions of farmers to promote balanced regional development.

The Kizilirmak district of Cankiri Province was selected as the study area. Located in the Central Anatolia region of Türkiye, the district lies within the Kizilirmak Basin and possesses considerable agricultural potential due to its irrigable farmlands and areas expected to be opened to irrigation in the near future. The district's primary agricultural lands are situated at an elevation of approximately 400–450 meters and are among the warmest areas within the Central Kizilirmak Basin. The Kizilirmak River passes directly through the central part of the district. In this research, the socioeconomic effects of income sources derived from agricultural production were examined among farmers residing in the district, which has significant agricultural potential due to its fertile lands and favorable climatic characteristics. The findings indicate that agricultural production and diversification play a crucial role not only in economic well-being but also in social life and rural development.

Keywords: Cankiri Kizilirmak, agricultural production, production diversification, socioeconomic analysis

TARIMDA İŞ SAĞLIĞI VE GÜVENLİĞİ: STANDARTLAR VE UYGULAMALAR OCCUPATIONAL HEALTH AND SAFETY IN AGRICULTURE: STANDARDS AND PRACTICES

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ÖZET

Tarım sektörü, ekonomik ve toplumsal yaşamda stratejik bir rol üstlenmekte; gıda güvenliği, istihdam ve kırsal kalkınma açısından temel bir unsur olarak öne çıkmaktadır. Ancak, iş sağlığı ve güvenliği (İSG) bakımından en riskli sektörlerden biri de tarımdır. Tarımsal faaliyetlerde kullanılan teknolojik alet ve makinelerin kullanımı tarımsal üretimin verimliliğini ve kalitesini artırmaktadır. Ancak bu alet ve makinelerin kullanımında insan faktörü göz ardı edilemez. Tarımsal üretim faaliyetlerinde meydana gelen iş kazaları; çalışan kişilerin iş güvenliğini etkilerken iş veriminin de azalmasına sebep olmaktadır.

Çalışma tarımda iş sağlığı ve güvenliği kavramını, uluslararası ve ulusal standartlar çerçevesinde ele almış; tarımsal işletmelerdeki uygulamalar ve karşılaşılan sorunlar analiz edilmiştir. Çalışmada, literatür taraması yöntemi kullanılmış, ulusal ve uluslararası raporlar, akademik yayınlar ve resmi istatistikler incelenmiştir. Bulgular, tarım sektöründe iş kazalarının büyük ölçüde traktör devrilmeleri, pestisit maruziyeti, ergonomik problemler ve biyolojik risklerden kaynaklandığını ortaya koymaktadır. Ayrıca küçük ölçekli işletmelerin iş güvenliği yatırımlarında ciddi kısıtlar yaşadığı, mevsimlik işçilerin en savunmasız grup olduğu tespit edilmiştir. Sonuç olarak, tarımda iş sağlığı ve güvenliği kültürünün geliştirilmesi için eğitim, denetim, teknoloji kullanımı ve devlet desteklerinin artırılması gerektiği sonucuna ulaşılmıştır.

Anahtar Kelimeler: Tarımsal faaliyet, iş sağlığı ve güvenliği, tarımsal işletme, iş kazası

ABSTRACT

The agricultural sector plays a strategic role in economic and social life, standing out as a fundamental component in terms of food security, employment, and rural development. However, agriculture is also among the most hazardous sectors with respect to occupational health and safety (OHS). The use of technological tools and machinery in agricultural activities increases the efficiency and quality of production, yet the human factor remains an indispensable component. Occupational accidents occurring during agricultural production not only endanger workers' safety but also reduce overall productivity.

This study examines the concept of occupational health and safety in agriculture within the framework of national and international standards, and analyzes the practices and challenges observed in agricultural enterprises. A literature review methodology was employed; national and international reports, academic publications, and official statistics were systematically examined. Findings reveal that the majority of occupational accidents in the agricultural sector arise from tractor rollovers, pesticide exposure, ergonomic problems, and biological hazards. It was also determined that small-scale farms face significant limitations regarding safety investments, and that seasonal agricultural workers constitute the most vulnerable

group. The study concludes that improving the occupational health and safety culture in agriculture requires reinforcing training programs, inspections, technological applications, and state-supported initiatives.

Keywords: Agricultural activity, occupational health and safety, agricultural enterprises, occupational accidents

EVALUATING FACTORS AFFECTING HOUSING PRICES USING MACHINE LEARNING MODELS: THE CASE OF DENİZLİ*

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ABSTRACT

The housing market constitutes a critical component of the economy, influencing both individual decision-making and investment strategies. Understanding the factors that shape house sale prices is essential for analyzing market dynamics and making well-informed investment decisions. Accordingly, this study aims to identify the determinants of house sale prices in the two central districts of Denizli province. The dataset used in the analysis was obtained through web scraping from a real estate website. The resulting dataset includes the house sale price as the dependent variable. The independent variables consist of several variables (*District, Number of Rooms, Number of Bathrooms, Net Area, Gross Area, Floor Level, Total Number of Floors, Building Age, and Heating Type*) that reflect the structural and locational characteristics of the residences. To model the relationship between the independent variables and house prices, three linear regression approaches were applied: Multiple Linear Regression, LASSO Regression, and Ridge Regression. An examination of the model structures revealed that the Ridge model retained all variables within the dataset, while the LASSO model reduced the coefficient of one subcategory of the *Heating Type* variable *Central Heating* to zero. This finding indicates that the LASSO model yielded a more parsimonious and interpretable model structure. In terms of predictive performance, both the Ridge and LASSO models ($R^2 = 0.77$) demonstrated higher explanatory power compared with the Multiple Linear Regression model ($R^2 = 0.75$). Based on the results of the fitted models, the factors significantly affecting house prices were identified. Among these factors, *Net Area* and *Building Age* emerged as the most influential variables. *Net Area, Number of Bathrooms, Number of Floors in the Building, and Heating Type (Floor Heating)* exhibited positive effects on house prices, whereas *Building Age* and *District (Pamukkale)* were found to have negative effects.

Keywords: House Price Prediction, Multiple Linear Regression, LASSO Regression, Ridge Regression, Denizli Housing Market

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THE GUIDING ROLE OF NCCN GUIDELINES IN EVIDENCE-BASED DECISION-MAKING FOR ANTICANCER DRUG SELECTION AND MANAGEMENT, AND ITS IMPACT ON CLINICAL PHARMACY PRACTICE

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Abstract

Cancer treatment involves complex steps including accurate drug selection, dose adjustment, interaction management, and monitoring for adverse effects. Treatment decisions depend not only on the type and stage of cancer but also on the patient's overall health, comorbidities, and laboratory findings. Therefore, evidence-based guidelines and multidisciplinary teams are critical to improving treatment quality and patient safety.

The National Comprehensive Cancer Network (NCCN) guidelines provide standardized protocols and clinical algorithms that support physicians and pharmacists in decision-making. The guidelines inform both the selection of anticancer regimens and the application of supportive care, such as antiemetic therapy and thromboprophylaxis. Clinical pharmacists use these guidelines to individualize therapy, anticipate adverse effects, and improve patient adherence, facilitating coordination within multidisciplinary teams and enhancing treatment outcomes.

For example, A 45-year-old woman presented with a growing mass in her left breast. Imaging showed a 3.1-cm lesion and a suspicious axillary node. Biopsy confirmed invasive ductal carcinoma that was ER-, PR-, and HER2-negative with a Ki-67 of 70%, consistent with triple-negative breast cancer (TNBC), staged cT2N1M0. Because TNBC is aggressive and lacks hormone/HER2 targets, NCCN v3.2024 recommends neoadjuvant chemo-immunotherapy for tumors $\geq$ T2 or node-positive disease. Before treatment, the clinical pharmacist assessed organ function, calculated carboplatin AUC dosing, prepared paclitaxel premedications, arranged antiemetic prophylaxis, and monitored risks such as neutropenia and immune-related toxicities.

The patient received pembrolizumab with paclitaxel–carboplatin, followed by pembrolizumab with doxorubicin–cyclophosphamide. The pharmacist closely tracked labs, neuropathy, and immune-related adverse events, adjusting supportive care when needed. The tumor regressed significantly, and the patient underwent breast-conserving surgery. Pathology revealed no residual carcinoma, indicating pathologic complete response (pCR). Pembrolizumab was continued postoperatively, with the pharmacist supporting toxicity monitoring and adherence.

The patient completed therapy without major complications. This case highlights the effectiveness of neoadjuvant chemo-immunotherapy in TNBC and the essential role of the clinical pharmacist in dosing, safety, and supportive care.

Keywords: NCCN guidelines, clinical pharmacy, anticancer drug management, evidence-based oncology.

IDENTIFICATION AND PRIORITIZATION OF SPAM CALL FACTORS USING FUZZY ANALYTIC HIERARCHY PROCESS (FAHP)

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ABSTRACT

Although there are various communication channels, phone calls still play an important role in this process. However, spam calls pose significant risks and need to be addressed. If not detected, they can lead to financial and security issues, as well as a considerable loss of time. Therefore, spam call detection is crucial to mitigate these problems. Depending on the stage of the call, the spam call issue can be addressed in three phases: pre-ring, mid-call, and post-call. There are both familiar and distinct factors that can be used to detect spam calls at each phase of the time-based categorization. These factors play a key role in building an effective scoring mechanism. Therefore, this study examines them in detail to identify the most impactful ones, along with their importance weights, in order to provide a solid theoretical foundation for the scoring system. It has been identified that the effective factors and their corresponding importance weights vary across the different phases of a call. In the pre-ring phase, the most influential factors are the reputation of the caller (0.313), the blocklist status of the caller (0.275), the call intensity metrics (0.160), the social features of the caller (0.099), the call outcome metrics (0.088), the caller identity (0.038), and the call origin (0.026). During the mid-call phase, the most essential factor groups/factors are voice activity (0.403), speech content (0.257), speaker identity (0.181), voice quality (0.079), acoustic features (0.051), and noise level (0.029). The post-call phase is only considered as the updating phase for factor weights. To summarize, the most crucial spam call factor for the pre-ring phase was determined as the reputation of the caller, with a weight of 0.41, and the least crucial pre-ring factor was the call origin. While voice activity became the most crucial spam call factor for the mid-call phase with a weight of 0.403, noise level took place at the end with a weight of 0.029. These findings provide a comprehensive basis for developing a phase-specific scoring mechanism for spam call detection.

Keywords: Spam call, pre-ring, mid-call, post-call, MCDM, fuzzy

**POLITICS AND STATE INSTITUTIONS UNDER THE LY DYNASTY: POWER
STRUCTURE AND ADMINISTRATIVE ORGANIZATION**

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Abstract: This study examines the political system and state institutions of Dai Viet under the Ly Dynasty (1009 – 1225), focusing on the structure of power and the organization of administrative apparatus. By analyzing the historical context of the early medieval period, the research identifies the formation and consolidation of a centralized monarchy, alongside the development of legal frameworks, administrative methods, and governing ideologies. The study explores the central and local government structures, the recruitment and roles of mandarins, as well as policies reflecting both state control and village autonomy. Particular attention is given to the transition of power from the late 10th century crisis to the establishment of the Ly Dynasty, highlighting policies such as population relief and national defense, which reveal lessons in patriotism, governance, and sovereignty protection. The paper emphasizes the Ly Dynasty's role in shaping political stability, administrative efficiency, and societal cohesion, offering insights applicable to contemporary state-building and governance studies. Overall, this research contributes to a deeper understanding of the foundations of political organization in medieval Vietnam and the enduring legacy of the Ly Dynasty's state institutions.

Keywords: Ly Dynasty; State institutions; Power structure; Administrative organization; Vietnamese history

TÜRKİYE’DE TARIMIN KAVRAMSAL ÇERÇEVESİ, STRATEJİK ÖNEMİ VE GÜNCEL YAKLAŞIMLAR

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Özet

Tarım sektörü, toplumların temel gıda gereksinimini karşılayan ve ekonomik yapının sürekliliğini sağlayan stratejik bir üretim alanıdır. Türkiye’de tarım; iklimsel çeşitlilik, geniş üretim alanları ve kültürel birikim nedeniyle güçlü bir potansiyele sahip olsa da son yıllarda arazi daralması, maliyet artışları, iklim değişikliğinin etkileri ve nüfus baskısı nedeniyle önemli bir dönüşüm sürecine girmiştir. Bu çalışma; Türkiye’de tarımın kavramsal yapısını, arazi kullanımındaki değişimi, ekonomik göstergeleri, dijital tarım uygulamalarını ve iklim kaynaklı riskleri bütünsel bir şekilde incelemektedir. Bulgular, tarımsal üretimde verimlilik odaklı yaklaşımların önemini ortaya koymakta; sürdürülebilir tarım politikaları için yol gösterici değerlendirmeler sunmaktadır.

Anahtar Kelimeler: Tarım, sürdürülebilirlik, tarım alanları, gıda güvenliği, Türkiye tarımı.

CONCEPTUAL FRAMEWORK, STRATEGIC IMPORTANCE AND CURRENT APPROACHES OF AGRICULTURE IN TURKEY

Abstract

The agricultural sector is a strategic production area that meets societies' basic food needs and ensures the continuity of the economic structure. While agriculture in Turkey possesses strong potential due to climatic diversity, extensive production areas, and cultural heritage, it has undergone a significant transformation in recent years due to land shrinkage, rising costs, the effects of climate change, and population pressures. This study examines the conceptual structure of agriculture in Turkey, land use changes, economic indicators, digital agriculture applications, and climate-related risks in a holistic manner. The findings highlight the importance of productivity-focused approaches in agricultural production and offer guiding assessments for sustainable agricultural policies.

Keywords: Agriculture, sustainability, agricultural lands, food security, Turkish agriculture

TÜRKİYE’DE TARLA BİTKİLERİ ÜRETİM SİSTEMİNİN YAPISAL ANALİZİ: İKLİM, SU, TOPRAK VE GİRDİ BİLEŞENLERİ

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ÖZET

Türkiye’nin tarımsal yapısı; iklim zonları, yağış rejimi, toprak özellikleri ve işletme ölçeği gibi çok boyutlu faktörlerin etkisi altında şekillenen karmaşık bir sistemdir. Tarla bitkileri, Türkiye’de toplam ekili alanların büyük bölümünü oluşturarak gıda, yem, yağ, lif ve sanayi hammaddesi üretiminde stratejik bir rol üstlenmektedir. Bu çalışma, Türkiye’de tarla bitkileri üretim sisteminin yapısal bileşenlerini; iklim, su, toprak, arazi kullanımı ve girdi maliyetleri ekseninde değerlendirmektedir. Bulgular, kuraklık riski, yağış düzensizliği, sulama açığı, düşük organik madde düzeyi ve yüksek girdi maliyetlerinin üretim kapasitesini sınırlayan temel unsurlar olduğunu göstermektedir. Sonuç olarak Türkiye tarımında verimlilik artışının alan genişlemesine değil; modern sulama teknikleri, toprak yönetimi ve girdi verimliliğine dayalı yapısal dönüşüme bağlı olduğu vurgulanmaktadır.

Anahtar Kelimeler: Türkiye tarımı, tarla bitkileri, su yönetimi, iklim değişikliği, girdi maliyetleri

THE STRUCTURAL ANALYSIS OF FIELD CROP PRODUCTION SYSTEMS IN TURKEY IS AN INVESTIGATION INTO THE CLIMATIC FACTORS, WATER RESOURCES, SOIL CHARACTERISTICS AND INPUT FACTORS

ABSTRACT

Turkey's agricultural structure is a complex system that has been shaped by a multitude of factors, including climate zones, precipitation regimes, soil characteristics, and farm scale. Field crops, which account for a significant proportion of Turkey's total cultivated land, play a pivotal role in the production of food, feed, oil, fiber, and industrial raw materials. The present study undertakes an evaluation of the structural components of Turkey's field crop production system in terms of climate, water, soil, land use, and input costs. The findings indicate that drought risk, rainfall irregularity, irrigation deficit, low organic matter levels, and high input costs are the primary factors limiting production capacity. It is therefore emphasized that productivity growth in Turkish agriculture is contingent not on land expansion, but on structural transformation based on modern irrigation techniques, soil management, and input efficiency.

Keywords: Turkish agriculture, field crops, water management, climate change, and input costs.

KIRIM SAVAŞI DÖNEMİNDE İSTANBUL'DA GÜNDELİK HAYATIN BATILILAŞMA İZLERİ

TRACES OF WESTERNIZATION IN EVERYDAY LIFE IN ISTANBUL DURING THE
CRIMEAN WAR

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ÖZET

1856 tarihinde sona eren Kırım Savaşı, Osmanlı Devleti açısından önemli bir dönüm noktası niteliğindedir. Bu savaşla Osmanlı Devleti, Avrupa devletlerinin fiilen kendi safında yer aldığını görmüştür. Savaş sonrasında müttefikler, Osmanlı Devleti'ni Avrupa devleti olarak görmeye karar vermiştir. İngiltere, Fransa ve Piyemonte'nin katıldığı bu ittifak, çıkar amaçlı Rusya'ya karşı denge siyaseti yürütmüş ve Osmanlı'nın yanında yer almıştır. Savaş sadece cephede değil İstanbul'da da belirgin değişimlere yol açmıştır. Müttefik kuvvetleri ve ailelerinin başkente gelmesi, şehir kültüründe hızlı ve görünür değişimlere yol açmıştır. Bu dönüşümler, eğlence hayatı, gündelik yaşam ve toplumsal alışkanlıklarla Avrupa tarzına oldukça yaklaşmıştır. Şehircilik alanında görülen yenilikler Avrupa etkisini gösterse de zaman zaman müttefiklerin olumsuz tutum ve davranışları yerel halk arasında tepkiye neden olmuştur. Savaş sürecinde sağlık, ekonomi ve kentsel düzendeki aksaklıklar, hem Osmanlı yönetimi hem de yabancı müttefikler tarafından tespit edilip eksiklikler giderilmeye çalışılmıştır. Osmanlı Devleti'nin Batı'ya yönelişini hızlandıran bu süreç, esasında Lale Devri'nden başlayan modernleşme çizgisinin Tanzimat ve Islahat Fermanlarıyla da devam eden bir süreç niteliğindedir.

Anahtar Kelimeler: Kırım, İstanbul, Modernleşme, Şehircilik, Islahat Fermanı

ABSTRACT

The Crimean War, which ended in 1856, constituted a significant turning point for the Ottoman Empire. Through this war, the Ottoman Empire witnessed, for the first time, the active participation of European states on its side. After the war, the allied powers decided to recognize the Ottoman Empire as a European state. The alliance formed by Britain, France and Piedmont pursued a balance of power policy against Russia based on mutual interests and stood by the Ottomans throughout the conflict. The war brought notable changes not only on the capital but led to rapid and visible transformations in urban culture. These changes brought entertainment life, daily practices and social habits closer to European models. Although innovations in urban planning reflected strong European influence, the negative attitudes and behaviors of some allied members occasionally created discontent among the local population. During the conflict, deficiencies in health services, economic management and urban organization were identified by both the Ottoman administration and the foreign allies, and efforts were made to address them. This process, which accelerated the Ottoman Empire's orientation toward the West, was, in essence a continuation of the modernization trend that had begun during the Tulip Era and advanced with the Tanzimat and Islahat Edicts.

Keywords: Crimean, Istanbul, Modernization, Urban Planning, Islahat Edict

ANNIE ERNAUX’NUN *BİR KADIN* ADLI ROMANINDA MEKÂN ALGISI

THE PERCEPTION OF SPACE IN ANNIE ERNAUX’S NOVEL *A WOMAN’S STORY*

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ÖZET

Edebi eserlerde mekân, yazarın yaşadığı toplumun sosyo-kültürel ve sosyo-ekonomik yapısını yansıtmaya açısından en önemli unsurlarından biridir. Betimleyici ve toplumsal işleviyle mekân, kahramanların eylemlerini konumlandırmayı ve tanımlamayı mümkün kılar. Modern romanda ise mekânın yapısı ve önemi üzerine temel bir inceleme niteliği taşıyan *L’Espace romanesque* (1965) adlı yapıtında Jean Weisgerber, mekânı anlamın kurucu bir unsuru olarak değerlendirir. Sınırları ve hareketleri betimleyen, yazarın açıkça ifade etmediği anlamların somut bir biçimde dışa vurulması için de bir görev üstlenen mekân, aynı zamanda yazarın dünya görüşünü yansıtmaya olanak sağlar. Weisgerber’e göre roman mekânı özgün bir yaratımdır, zira okuyucu onu her zaman ve hangi alanda olursa olsun kendisi üretmelidir. Bu nedenle çevreyi deneyimlemenin bir yolu, başka bir ifadeyle, beden ve ruh bütünüyle insanın deneyimlediği bir yer olarak kabul edilir.

Küçük esnafın dünyasını, temsillerini ve egemen dünyanın kültürünü yeniden yaratmaya çalışan ve sınıfsal farkları, kadın bedenini ve yerinden edilmişliği eserlerinin temel motifi haline getiren Annie Ernaux dünya edebiyatının önde gelen kadın yazarlarından. Yvetot’da bir bakkal ve kafe işleten Norman fabrika işçilerinin kızı olarak dünyaya gelen Ernaux, okul aracılığıyla edindiği kültürel sermaye sayesinde kendini sık sık “sınıf kaçkını” şeklinde tanımlar. Eserlerini de yaşadığı toplumsal yapıdan esinlenerek kaleme alan yazar bu sayede oto-sosyo-biyografi türünün öncüsü olur. Annesinin yaşamını ve ölümünü konu alan otobiyografik bir eser olan ve 2022 yılında Nobel Edebiyat Ödülü’ne layık görülen *Bir Kadın* romanında ise Annie Ernaux olay örgüsünde çeşitli mekânsal göstergeleri bir araya getirir. Buradaki amaç, hikâyenin farklı evrelerinde görülen kalabalık/yalnızlık ve aidiyet/yabancılaşma gibi belirli karşıtlıkları ortaya çıkarmaktır. Bu bağlamda araştırma, Weisgerber’in *L’Espace romanesque* eserindeki “romanda mekân” olgusunun karakterlerle uyumsuzluğu kuramı bağlamında irdelenecektir. Ernaux’nun, yaşamının bir döneminde Alzheimer hastası olan annesinin varoluşundan hareketle onları bir yandan kabul eden, diğer yandan dışlayan bir dünyada nasıl görünür kıldığının incelenmesi yapılacaktır.

Anahtar Kelimeler: Modern Roman, Roman Mekânı, Kalabalık/Yalnızlık, Aidiyet/Yabancılaşma, Jean Weisgerber, Annie Ernaux.

ABSTRACT

In literary works, space is one of the most important elements in terms of reflecting the socio-cultural and socio-economic structure of the society in which the author lives. Through its descriptive and social functions, space thus makes it possible to situate and define the actions of the characters. In his work *L'Espace romanesque* (1965), which serves as a fundamental study on the structure and importance of space in the modern novel, Jean Weisgerber evaluates space as a constitutive element of meaning. Describing boundaries and movements, space also takes on the task of concretely expressing meanings that the author does not explicitly state, while simultaneously allowing the author to reflect their worldview. According to Weisgerber, the space of the novel is an original creation, as the reader must always produce it themselves, regardless of the context. Therefore, it is considered a way of experiencing the environment, in other words, a place that the human body and soul experience as a whole.

Annie Ernaux, one of the leading female authors in world literature, strives to recreate the world of small business owners, their representations, and the culture of the dominant world by making class differences, the female body, and displacement the central motifs of her works. Born in Yvetot as the daughter of Norman factory workers who ran a grocery store and café, Ernaux often describes herself as a “class escapee” thanks to the cultural capital she acquired through school. Drawing inspiration from the social structure she lived in, Ernaux became a pioneer of the genre known as auto-socio-biography. In her autobiographical novel *A Woman's Story*, which centers on her mother's life and death and earned her the 2022 Nobel Prize in Literature, Annie Ernaux brings together various spatial indicators in the plot. The purpose of this is to reveal certain oppositions, such as crowd/loneliness and belonging/alienation, observed at different stages of the story. In this context, the study will analyze the novel based on Weisgerber's theory of “incompatibility of space in the novel” presented in *L'Espace romanesque*. It will examine how Ernaux, inspired by her mother's existence, who suffered from Alzheimer's at one point in her life, makes visible those who are simultaneously accepted and excluded within the world they inhabit.

Keywords: Modern Novel, Space of the Novel, Crowd/Loneliness, Belonging/Alienation, Jean Weisgerber, Annie Ernaux.

**IMPACT OF RURAL-URBAN MIGRATION OF YOUTHS ON SOCIO-ECONOMIC
DEVELOPMENT OF NIGERIA
(EMPIRICAL EVIDENCE FROM ABIA STATE, NIGERIA)**

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ABSTRACT

This study examined the impacts of rural-urban migration on the socio-economic development of Nigeria adopting an empirical evidence from Abia State of Nigeria. The multi-staged sampling technique was employed in the selection of 240 of the respondents (youths) from three local government areas of the state. Data for this study were sourced primarily through the use of well-structured questionnaire. Both descriptive and inferential analyses were employed in the analyses of the data. The result of this study showed that mean age of the respondents was 22.60 years. The study further revealed that majority (68.8%) of the respondents were male, single and family size of between 5 – 8 and had secondary education. The results revealed that the poor electricity supply in the rural areas, bad condition of roads, absence of pipe-borne water are the push factors driving the youths away from their communities into urban areas. Results further revealed that better employment opportunities, superior wages in the urban areas, improved living conditions were pull factors that attract rural youths to the urban centers. Majority (68.8%) of the respondents were not willing to stay in the rural areas with or without improvement in the condition of living in their communities. The results of this study revealed that age ($r = 0.50$; $p < 0.00$), sex (X-squared – 34.57; $p < 0.05$) and educational level (X-squared – 45.57; $p < 0.01$) of the respondents were significantly related to their decision to migrate from rural to urban areas. The study recommends that government should provide basic social amenities in the rural areas as they are found in the urban areas so as to encourage the youths to stay.

Key words: Rural-Urban Migration, Nigerian Youths, Push & Pull factors, Socio-economic development, Abia State

**QUALITY MANAGEMENT PRACTICES AND ORGANIZATIONAL
PERFORMANCE, AND CUSTOMER SATISFACTION IN SMALL & MEDIUM-
SIZED ENTERPRISES (SMEs) IN
NIGERIA**

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ABSTRACT

Quality is one of the main devices which an organization relies on to achieve most of its goals. Traditionally, it was consisted of a production workforce which was only worry about adhering to limited commands. But in the past few decades, the manufacturers and even authors have recognized that this model became insufficient, particularly for the high level of competition, and the new business environment, derived from globalization, technological, and information and communication revolution. These and other factors led to an increased focus on quality by organizations. Organizations' focus has shifted from the approach of quality control to quality circles, total quality management, continuous improvement, and workers empowerment. Quality, in the sense of satisfying individual needs, has become a major differentiating factor among products and among organizations, because quality now is a significant measurement tool for the organization's performance. Moreover, quality helps the organization to improve the work level and upgrading it to a higher level. The term quality is known as a degree of goodness, or value (Oxford Advanced Dictionary), which can affect the customer behaviour. During, and after the First World War, the greater concern for organizations was, the quality control, because quality control was devoted for reducing cost, and this makes organizations able to compete through their low prices (Robbins and Coulter, 2005, pp. 27-28). Between the years 1960-1980, Japanese firms shifted from quality control approach to quality assurance that led to organization's focus on quality management (Hopp and Spearman, 2001, pp. 151-154). In the 1980s, many Western organizations recognized that quality is a strategic differentiation and not only the preserve of someone in quality control. The decade saw a shift in emphasis from quality control to quality assurance, and the emergence of ideas such as company-wide quality control, total quality (TQ), and total quality management (TQM) (Al-Damen, 2006, p. 28).

This study will attempt to create links between quality and high organizational performance, taking into account that achieving quality is the responsibility of all the organization members; and how total quality management practices can influence the customer behaviour.

Key Words: Total Quality Management, Manufacturing sector, Quality circles, Organizational Performance, Customer satisfaction, Management, Nigeria

ENVIRONMENTAL DEGRADATION AND SOCIO-ECONOMIC DEVELOPMENT OF THE NIGER-DELTA-REGION OF NIGERIA- A CASE OF OGONI-LAND

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Abstract

Due to oil exploration and other human activities in the Niger Delta region, there is evidence of environmental degradation all over the area (Oronto, 1998). Environmental degradation is occasioned by consistent flow of industrial wastes, oil spills, gas flares, fire-disaster, acid rain, flooding, erosion, etc., which have led to the destruction of properties and human lives. This research paper reviews environmental degradation and pollution in oil producing areas of the Niger Delta region with particular reference to Ogoni community in the context of the patterns, causes and effects of such degradation. Policy/legal options for upgrading the degraded environment such as stoppage of oil spillage and gas flaring, flooding, pollution and erosion, etc. are also suggested. Modernization and dependency, critical and stakeholder theories shaped the theoretical foundations of the study. Questionnaire was the instrument used by the researcher for the collection of data for the research work. In analysing the data gathered for the research work, the researcher made use of tables and percentages to analyse the responses on the questionnaire administered to the respondents. He therefore used the Chi-Square Inferential Statistical Method to test the hypotheses and to reach the research conclusion. The research findings infer that meaningful implementation of Environmental Laws and Regulations through effective and inclusive environmental education of both the oil producing companies and the entire citizenry of the Niger Delta region on proper modern oil exploration techniques would go a long way in the fight to eradicate environmental degradation and pollution in the Niger Delta region. This research concludes that the relevant environmental agencies such as the Federal Ministry of the Environment, National Environmental Standards and Regulations Agency (NESREA) and other environmental stakeholders and NGOs should rise to the challenge to protect, enhance a healthy and safe environment in keeping with the current United Nations Environmental World order of eradicating all forms of environmental degradation and to ensure sustainable development not only for the present generation but for the future generations yet unborn. The research therefore recommends that the Federal Government of Nigeria should as a matter of national urgency immediately flag off the much publicized environmental pollution clean-up exercise of the entire Niger Delta region with particular reference to Ogoni community.

Key Words: Environment, environmental degradation/pollution, oil spillage, gas flaring, Multi-national oil companies (MNOCs), Niger-Delta region, Ogoni-land

DESIGN AND DEVELOPMENT OF NOVEL APPROACH FOR FILE SHARING FOR SECURITY USING BLOCKCHAIN TECHNOLOGY

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Abstract: File sharing is a fundamental aspect of data management, and it is essential for collaboration, communication, and data exchange. However, file sharing systems are susceptible to security threats and data breaches, which can compromise data confidentiality, integrity, and availability. A novel approach for file sharing using blockchain technology is required which would ensure secure and decentralized file sharing. The novel approach for file sharing would use a hybrid consensus mechanism, combining proof-of-work and proof-of-stake algorithms, to ensure network security and prevent malicious attacks.

It would use multi-layer encryption to enhance file security, where files are encrypted at the user level and the blockchain level. The proposed Novel approach would also incorporate smart contract technology for file access control, where users can set permissions for file sharing and access. The proposed approach was developed and tested using a prototype implementation, and the results show that the system is secure, efficient, and scalable. The system also provides a high level of data privacy and security, making it suitable for various applications, including healthcare, finance, and government.

Keywords: Novel Approach, File sharing; Security; Blockchain, Technology

**GENÇ KADIN VOLEYBOL, HENTBOL VE BASKETBOLCULARIN DENGİ
PARAMETRELERİ İLE ANTROPOMETRİK ÖZELLİKLER VE NAVİKÜLER
DÜŞME DEĞERLERİ ARASINDAKİ İLİŞKİNİN KARŞILAŞTIRMALI ANALİZİ**
A COMPARATIVE ANALYSIS OF THE RELATIONSHIP BETWEEN BALANCE
PARAMETERS, ANTHROPOMETRIC CHARACTERISTICS, AND NAVICULAR DROP
VALUES IN YOUNG FEMALE VOLLEYBALL, HANDBALL, AND BASKETBALL
PLAYERS

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ÖZET

Amaç: Genç kadın voleybol, hentbol ve basketbolcuların denge parametreleri ile BKİ, boy, vücut ağırlığı, bacak uzunluğu ve naviküler düşme değerleri arasındaki ilişkiyi belirlemek ve branşlar arası farklılıkları ortaya koymak.

Yöntem: Araştırmaya 11–15 yaş aralığında toplam 60 kadın sporcu (20 hentbol, 20 basketbol, 20 voleybol) dahil edilmiştir. Antropometrik ölçümler standart ISAK protokollerine göre alınmış; naviküler düşme ölçümleri oturma ve ayakta durma pozisyonlarında dijital kumpas ile belirlenmiştir. Denge performansı Y Balance Test kullanılarak sağ ve sol alt ekstremitelerde 6 yön (antero-posterior, postero-medial, postero-lateral) üzerinden değerlendirilmiştir. Veriler SPSS 23 programında analiz edilmiştir. Normallik Shapiro-Wilk testiyle kontrol edilmiş, gruplar arası karşılaştırmalar için ANOVA/Kruskal-Wallis, ilişkiler için Pearson veya Spearman korelasyon testleri uygulanmıştır ($p<0.05$).

Bulgular: Branşlar arasında boy ($p=0.008$) ve vücut ağırlığı ($p=0.015$) açısından anlamlı farklar bulunmuştur; basketbolcuların değerleri diğer branşlara göre daha yüksektir. BKİ ve naviküler düşme farkları branşlara göre anlamlı farklılık göstermemiştir ($p>0.05$). Basketbol grubunda, boy ($r=0.72$, $p=0.0004$) ve bacak uzunluğu ($r=0.64$, $p=0.002$) ile çeşitli denge yönleri arasında güçlü pozitif korelasyonlar saptanmıştır. Hentbol ve voleybol gruplarında antropometrik değişkenlerle denge parametreleri arasında anlamlı ilişki gözlenmemiştir.

Sonuç: Basketbolcularda boy ve bacak uzunluğunun dinamik denge performansını artırıcı yönde etkisi olduğu, hentbol ve voleybol branşlarında ise denge performansının yapısal faktörlerden ziyade nöromusküler kontrol ve antrenman özelliklerinden etkilendiği belirlenmiştir. Naviküler düşme farkları, bu yaş grubunda dengeyi belirlemede anlamlı bir değişken değildir.

Anahtar Kelimeler: Genç kadın sporcu, Denge, Naviküler düşme, Antropometri, Y denge testi,

ABSTRACT

Purpose: This study aimed to determine the relationship between balance parameters and anthropometric variables — including body mass index (BMI), height, body weight, leg length, and navicular drop values — in young female volleyball, handball, and basketball players, and to identify inter-branch differences.

Methods: A total of 60 female athletes aged between 11 and 15 years (20 handball, 20 basketball, and 20 volleyball players) participated in the study. Anthropometric measurements were obtained following standard ISAK protocols, and navicular drop measurements were recorded in both sitting and standing positions using a digital caliper. Dynamic balance performance was assessed using the Y Balance Test in six directions (anterior, posteromedial, and posterolateral) for both the right and left lower extremities. Data were analyzed using SPSS version 23. Normality was verified with the Shapiro–Wilk test. ANOVA or Kruskal–Wallis tests

were applied for between-group comparisons, while Pearson or Spearman correlation tests were used to evaluate relationships ($p < 0.05$).

Results: Significant differences were observed between branches in height ($p = 0.008$) and body weight ($p = 0.015$), with basketball players exhibiting higher values than those in other groups. BMI and navicular drop differences did not show significant inter-branch variations ($p > 0.05$). In the basketball group, strong positive correlations were found between height ($r = 0.72$, $p = 0.0004$) and leg length ($r = 0.64$, $p = 0.002$) with several balance directions. No significant correlations were observed between anthropometric variables and balance parameters in handball and volleyball players.

Conclusion: It was concluded that height and leg length positively influence dynamic balance performance among basketball players, whereas in handball and volleyball players, balance performance is more likely affected by neuromuscular control and training-specific adaptations rather than structural factors. Navicular drop differences were not identified as a significant determinant of balance in this age group.

Keywords: Young female athletes, Balance, Navicular drop, Anthropometry, Y Balance Test

**COVID-19 PANDEMİSİ SÜRECİNDE TOPLUMUN SAĞLIK ÇALIŞANLARI
HAKKINDAKİ DÜŞÜNCESİ**
PUBLIC PERCEPTIONS OF HEALTHCARE WORKERS DURING THE COVID-19
PANDEMIC

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ÖZET

Bu araştırma, Covid-19 pandemisi sürecinde toplumun, sağlık çalışanlarına yönelik tutum ve düşüncelerini belirlemek amacıyla gerçekleştirildi. Tanımlayıcı ve kesitsel tasarımda yürütülen çalışmanın verileri, etik kurul ve sağlık bakanlığı onayı alındıktan sonra, araştırmacılar tarafından literatüre dayalı olarak hazırlanan soru formu aracılığıyla çevrim içi yöntemle toplandı. Örneklem büyüklüğü %95 güven aralığında 384 olarak hesaplandı ve 481 katılımcıya ulaşıldı. Araştırmaya, Türkiye'nin farklı coğrafi bölgelerinde yaşayan ve katılmaya gönüllü olan 18 yaş ve üzeri bireyler dahil edildi. Verilerin analizinde bağımsız örneklem t-testi ve ANOVA kullanıldı. Katılımcıların %69,4'ü (n=334) kadın, %30,6'sı (n=147) erkek olup, %47'si (n=226) 19–23 yaş aralığındaydı. Katılımcıların büyük çoğunluğunun (%70,5, n=339) ailesinde veya yakın çevresinde sağlık çalışanı bulunduğu belirlendi. Çalışma sonucunda, pandemi döneminde toplumun sağlık çalışanlarına olan saygısının arttığı, çalışma koşullarının iyileştirilmesi gerektiğini düşündükleri ve gelecekte sağlık hizmeti alırken sağlık çalışanlarına daha anlayışlı davranacaklarını ifade ettikleri saptandı. Ayrıca katılımcıların, sağlık çalışanlarına yönelik anlayış, güven ve takdir duygularının güçlendiği, ancak aynı zamanda onlardan daha fazla özveri bekledikleri gözlemlendi. Elde edilen bulgular, pandemi sürecinin toplumun sağlık çalışanlarına bakış açısında olumlu değişimler yarattığını ve bu durumun sağlık sisteminde sürdürülebilir iyileştirmeler için önemli bir temel oluşturduğunu gösterdi.

Anahtar Kelimeler: Sağlık Çalışanları, COVID-19, Toplumsal Tutum, Pandemi

ABSTRACT

This research was conducted to determine the attitudes and thoughts of society towards healthcare workers during the Covid-19 pandemic. The data for the descriptive and cross-sectional study were collected online using a questionnaire prepared by the researchers based on the literature, after obtaining approval from the ethics committee and the Ministry of Health. The sample size was calculated as 384 at a 95% confidence interval, and 481 participants were reached. Individuals aged 18 and over, living in different geographical regions of Turkey and volunteering to participate, were included in the study. Independent samples t-test and ANOVA were used in the analysis of the data. Of the participants, 69.4% (n=334) were female and 30.6% (n=147) were male, with 47% (n=226) aged between 19 and 23. It was determined that the vast majority of participants (70.5%, n=339) had healthcare workers in their family or close circle. The study found that during the pandemic, the public's respect for healthcare workers increased, they believed working conditions needed to be improved, and they stated they would be more understanding towards healthcare workers when receiving healthcare services in the future. It

was also observed that participants' feelings of understanding, trust, and appreciation towards healthcare workers strengthened, but at the same time, they expected more dedication from them. The findings revealed that the pandemic process brought about positive changes in the public's perception of healthcare workers and that this situation formed an important basis for sustainable improvements in the healthcare system.

Keywords: Healthcare Workers, COVID-19, Social Attitudes, Pandemic

**SOSYAL SERMAYENİN MEKÂNSALLIĞINDAN TASARIM NORMLARINA:
BAĞLAMA DUYARLI BİR ANALİTİK PROTOKOL**
FROM THE SPATIALITY OF SOCIAL CAPITAL TO DESIGN NORMS: A CONTEXT-
SENSITIVE ANALYTICAL PROTOCOL

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ÖZET

Mevcut mimarlık literatürü sosyal sermayeyi çoğunlukla dolaylı ele alırken, doğrudan mekânsal normların belirleyicisi olarak değerlendiren kuramsal yaklaşımlar yetersizdir. Bu bildiri, bu boşluğu doldurarak, sosyal sermayeyi yalnızca toplumsal bir kaynak olarak değil, aynı zamanda mekânsal-toplumsal bir dinamik olarak ele almakta ve kamusal alanın canlandırılmasına yönelik bağlam-duyarlı normatif tasarım ilkelerinin üretilebileceği analitik bir protokol önermektedir. Arendt'in kamusal alan kuramı, Putnam'ın sosyal sermaye yaklaşımı ve Jacobs'ın gündelik karşılaşmalara dayalı kamusal yaşam modeli, sosyal sermayenin mekânsal taşıyıcılığını açıklamak üzere kuramsal bir üçgen oluşturmaktadır. Bu bağlamda sosyal sermaye, kamusal alanın fiziki çevrede yeniden üretimi açısından normatif bir analiz aracına dönüştürülmektedir. Geliştirilen analitik protokol, sosyal sermayenin üretilemediği ya da sürdürülemediği bağlamsal durumları (sosyal sermaye açıkları) tanımlamakta ve altı temel eksen (mekânsal geçirgenlik, karşılaşmalar ve ortak eylemlilik, görünürlük, kapsayıcılık ve çoklu kullanım, gündelik rutinler, ortak üretkenlik) üzerinden gözleme dayalı yorumlamalarla normatif tasarım ilkeleri geliştirmektedir. Bu normlar, kullanıcı taleplerine dayalı evrensel reçeteler yerine, sosyal ilişkilerin kurulamadığı zayıf mekânsal örüntülerden türetilmekte; böylece bağlama özgü ve kuramsal olarak gerekçelendirilmiş kararlar önermektedir. Bu çalışma, sosyal sermaye literatürüne mekânsal bir boyut kazandırmakta; kamusal alan kuramlarını fiziksel çevreyle ilişkilendirmekte ve normatif tasarım araştırmalarına bağlam duyarlı, ölçekler arası uyarlanabilir bir yöntemsel çerçeve sunmaktadır. Protokol, böylece mimarlık, kentsel tasarım ve şehir planlama disiplinlerinde sosyal altyapı üretimine katkı sağlamayı amaçlamaktadır.

Anahtar Kelimeler: Sosyal sermaye, Kamusal alan, Mekânsal planlama, Normatif tasarım ilkeleri, Sosyal altyapı

ABSTRACT

While existing architectural literature often addresses social capital indirectly, theoretical approaches that treat it as a direct determinant of spatial norms are lacking. This paper addresses this gap by conceptualizing social capital not merely as a social resource, but as a spatial-social dynamic, and proposes an analytical protocol through which context-sensitive normative design principles can be derived to revitalize the public realm. Drawing on Arendt's theory of the public realm, Putnam's approach to social capital, and Jacobs's model of public life grounded in everyday encounters, the study constructs a theoretical triangle that frames the spatial articulation of social capital. Within this framework, social capital is reconceptualized as a normative analytical tool for assessing and enhancing the reproduction of publicness in the built environment. The proposed analytical protocol identifies contextual conditions (social capital gaps) in which social capital fails to emerge or remain sustainable, and develops normative

design principles through interpretive observations across six axes: spatial permeability, encounters and collective agency, visibility, inclusivity and mixed uses, daily routines, and shared productivity. These principles are not derived from universal formulas based on user demands , but are instead derived from weak spatial patterns in which social relations fail to materialize—offering context-responsive and theoretically grounded decisions. This study introduces a spatial dimension into social capital theory, links public realm scholarship with the physical environment, and presents a contextually adaptive, cross-scalar methodological framework for normative design research. The protocol thus aims to contribute to the production of social infrastructure within the disciplines of architecture, urban design, and urban planning.

Keywords: Social capital, Public realm, Spatial planning, Normative design principles, Social infrastructure

**ASS1 GENİNDE HOMOZİGOT c.256C>T p.(Arg86Cys) MUTASYONU:
SİTRÜLİNEMİ TİP I OLGU SUNUMU**

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ÖZET

Argininosüksinat sentetaz (ASS), üre döngüsünde görev alarak sitrülünün argininosüksinata dönüşümünü katalize eden bir enzimdir. Bu enzim, insanlarda 9q34.11 kromozom bölgesinde yer alan Argininosüksinat Sentetaz 1 (ASS1) geni tarafından kodlanmaktadır. ASS1 geninde meydana gelen patojenik mutasyonlar, üre döngüsünün etkinliğini bozarak sistemik hiperamonyemiye, hepatik disfonksiyona ve nörolojik toksisiteye yol açabilmektedir. Sitrülinemi Tip I, ASS enzimidaki fonksiyonel bozukluk sonucu amonyağın vücuttan yeterince uzaklaştırılmadığı, otozomal resesif kalıtılan bir üre döngüsü bozukluğu olarak tanımlanmaktadır. Bu olgu sunumunda, beş yaşında, önceden bilinen hastalığı olmayan bir kız hastanın; karın ağrısı, koyu renkli idrar, bilinç bulanıklığı, letarji ve hepatomegali şikayetleriyle çocuk genetik kliniği'ne başvuran olgusu sunulmaktadır. Klinik tablonun olası genetik etiyojisini aydınlatmak amacıyla, hastadan periferik kan örneğinden tüm ekzom dizileme (TED) analizi Illumina teknolojisi kullanılarak gerçekleştirilmiştir. Tespit edilen varyant Sanger dizileme ve aile segregasyon analizleri ile doğrulanmıştır. Tüm uygulamalar etik kurallar ve bilimsel standartlara uygun biçimde yürütülmüş; çalışmanın amacı, yöntemi ve olası sonuçları hasta ve ailesine açık şekilde anlatılarak yazılı onam alınmıştır. Genetik analiz sonucunda ASS1 geninde homozigot c.256C>T p.(Arg86Cys) mutasyonu saptanmıştır. Akraba evliliği gibi genetik risk faktörlerinin değerlendirilmesi, bu tür metabolik hastalıkların önlenmesinde kritik öneme sahiptir. Bu olgu ASS1 gen mutasyonlarının erken tanısının ve metabolik krizlerin yönetiminde klinik-genetik araştırmaların önemini vurgulamaktadır.

Anahtar Kelimeler: Argininosüksinat Sentetaz 1 (ASS1) Geni, c.256C>T, Homozigot Mutasyon, Hiperamonyemi, Sitrülinemi Tip I .

HOMOZYGOUS c.256C>T p.(Arg86Cys) MUTATION IN THE ASS1 GENE: A CASE REPORT OF CITRULLINEMIA TYPE I

ABSTRACT

Argininosuccinate synthetase (ASS) is an enzyme that functions in the urea cycle by catalyzing the conversion of citrulline to argininosuccinate. This enzyme is encoded by the Argininosuccinate Synthetase 1 (ASS1) gene, located on the chromosome region 9q34.11 in humans. Pathogenic mutations in the ASS1 gene disrupt the efficiency of the urea cycle, leading to systemic hyperammonemia, hepatic dysfunction, and neurological toxicity.

Citrullinemia Type I is defined as an autosomal recessive urea cycle disorder in which ammonia cannot be adequately eliminated from the body due to functional impairment of the ASS enzyme. In this case presentation, we report a five-year-old female patient with no known medical history who presented to Başakşehir Çam and Sakura City Hospital with complaints of abdominal pain, dark-colored urine, altered consciousness, lethargy, and hepatomegaly. During the clinical course, liver failure developed following an acute hepatitis presentation; due to neurological symptoms secondary to hyperammonemia, N-acetylcysteine (NAC) therapy and plasmapheresis were administered. In addition, a low-protein diet was initiated to achieve metabolic control. To elucidate the possible genetic etiology of the clinical condition, whole-exome sequencing (WES) was performed using Illumina technology on a peripheral blood sample. The detected variant was confirmed through Sanger sequencing and family segregation analyses. All procedures were conducted in accordance with ethical principles and scientific standards, and the aim, methods, and potential outcomes of the study were clearly explained to the patient's family, followed by obtaining written informed consent. Genetic analysis revealed a homozygous c.256C>T p.(Arg86Cys) mutation in the ASS1 gene. The evaluation of genetic risk factors, such as consanguinity, plays a critical role in preventing such metabolic disorders. This case emphasizes the importance of early detection of ASS1 gene mutations and the integration of clinical and genetic approaches in the management of metabolic crises.

Keywords: Argininosuccinate Synthetase 1 (ASS1) Gene, c.256C>T, Homozygous Mutation, Hyperammonemia, Citrullinemia Type I

THE EFFECTS OF BENZIMIDAZOLE AND ITS DERIVATIVES ON CANCER CELLS

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ABSTRACT

Benzimidazole is a compound that has been studied in medicinal chemistry for over a century and is of great therapeutic importance. Benzimidazole is a fused aromatic heterocyclic compound formed by the combination of a benzene ring and a five-membered imidazole ring containing nitrogen heteroatoms at the 1st and 3rd positions. Depending on whether a hydrogen atom is present on any of the nitrogen atoms in the imidazole structure, it exhibits two equivalent tautomeric forms. Thanks to its aromatic ring and double nitrogen atom, it can form various interactions such as hydrogen bonds, Van der Waals forces, and π - π interactions. Through these interactions, it can bind to proteins and act as a proton acceptor or donor. Due to this structure, it is considered an important pharmacophore group in drug discovery because it possesses many biological activities. Benzimidazole and its derivatives have various therapeutic effects, including antibacterial, antifungal, antimicrobial, anticancer, antitubercular, antiulcer, antiviral, anti-inflammatory, antidiabetic, antihistamine, antihypertensive, and analgesic effects. Furthermore, 5,6-dimethyl-1-(α -D-ribofuranosyl) benzimidazole, a benzimidazole derivative, is a fundamental component of cobalamin (vitamin B12).

Existing studies indicate that benzimidazole is a core compound in the field of medicine and drug discovery due to its numerous biological activities. Today, researchers in drug discovery are turning their attention to discovering new molecules with better efficacy and mechanisms of action due to various reasons such as resistance and toxicity. This need for new molecule discovery is particularly evident in anticancer studies. Cancer-related deaths rank second worldwide after cardiovascular diseases. This is due to factors such as the ability of tumours to develop multi-drug resistance to chemotherapy despite the availability of numerous chemotherapeutic agents, the toxicity of anticancer drugs to normal cells, and the occurrence of various side effects. These circumstances increase the need for new drug discovery. The use of heterocyclic compounds with various biological activities in anticancer studies is quite popular in the pharmaceutical industry. One of the most important members of heterocycles is benzimidazoles. The core structure of benzimidazole and its minimal toxicity make it a very promising skeleton for anticancer drug development. For this reason, the use of benzimidazole and its derivatives in cancer studies has been the subject of numerous studies. Researchers have synthesised various benzimidazole derivatives from the benzimidazole skeleton and investigated the mechanisms of action of these derivatives on cancer cells. Benzimidazole derivatives exhibit anticancer effects through various mechanisms of action.

The mechanisms of action of benzimidazole derivatives against cancer cell lines can be classified as molecular effects, targeted effects, and epigenetic modulatory effects. Molecular effect mechanisms affect fundamental intracellular processes such as topoisomerase inhibitors, DNA intercalation and alkylating agents, and microtubule inhibitors. Targeted effect mechanisms include kinase inhibitors, poly(ADP-ribose) polymerase-1 (PARP-1) inhibitors, androgen receptor (AR) antagonists, aromatase inhibitors, dihydrofolate reductase (DHFR) inhibitors, carbonic anhydrase inhibitors, vascular endothelial growth factor receptor-2 (VEGFR-2) inhibitors, and others. Epigenetic modulator effects arise from the interaction of benzimidazole derivatives with various epigenetic targets such as DNA methyltransferases, histone deacetylases, and histone methyltransferases. Benzimidazole is a promising compound in cancer research due to these mechanisms. For this reason, a literature review was conducted on the interactions of benzimidazole and its derivatives with cancer cells. The effects on cancer cells and the mechanisms of action will be described in more detail in the report.

Keywords: Benzimidazol, Heterocyclic, Cancer, Anticancer, Biological Activity

BİR GÜNLÜK BUZAĞIDA VULVA DEFORMİTESİ İLE ATRESİA ANİ OLGUSU

A CASE of ATRESIA ANI WITH VULVA DEFORMITY in A ONE-DAY-OLD CALF

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ÖZET

Bu olgu raporunda, bir buzağıda atresia ani ve vulva deformitesi kombinasyonu sunulmuştur. Kastamonu Üniversitesi Büyük Hayvan Kliniği'ne dışkı yapamama şikâyetiyle getirilen bir günlük buzağının klinik muayenesinde anal açıklığın bulunmadığı, kuyruk altı bölgede şişkinlik ve ventral bölgede tüberkül benzeri yapılar bulunduğu gözlenmiştir. Orifisyum üretra eksternadan idrar çıkışı mevcut olup vulvada belirgin bir malformasyon tespit edilmiştir. Radyografik inceleme sonucunda rektumun anüsün olması gereken bölgeye yakın sonlandığı belirlenmiştir. Genel anestezi altında anal bölgede yapılan ensizyonla pelvik boşluğun tabanında kör olarak sonlanmış rektuma ulaşılmıştır. Rektum çevre dokulardan separe edilerek ensizyon hattına yaklaştırılmış ve tespit dikişleri ile tutturulmuştur. Daha sonra rektum oluşturulan anal açıklığa çepeçevre dikilmiştir. Son olarak rektuma yapılan ensizyonla gaz ve mekonyum dışarı alınmıştır. Operasyon sonrası buzağının günlük süt miktarı öğünlere bölünerek verilmesi tavsiye edilmiştir. Az miktarda öğünler halinde süt verilmesi ile barsakların yük altına girmeden çalışması teşvik edilmiştir. Operasyonun birinci haftasında telefonla yapılan görüşmede normal dışkılama fonksiyonuna kavuştuğu ve yara hattında anormallik olmadığı bilgisi alınmıştır. Operasyonla birlikte sonrasındaki dönemde yapılan kontrollü besleme ile buzağının komplikasyonsuz iyileştiği gözlenmiştir. Atresia ani olgularının erken tanı ve cerrahi müdahale ile başarılı şekilde tedavi edilebileceği, eşlik eden genital anomalilerde ise fonksiyonel iyileşmenin öncelikli hedef olması gerektiği sonucuna varılmıştır. Ayrıca bu tür konjenital anomalilerde, hayvanın damızlık olarak kullanılmaması gerektiği vurgulanmıştır.

Anahtar Kelimeler: Atresia ani, vulva anomalisi, buzağı, konjenital anomali, cerrahi tedavi

ABSTRACT

This case report describes a combination of atresia ani and vulvar deformity in a newborn calf. A one-day-old calf was admitted to Kastamonu University Large Animal Clinic with a history of inability to defecate. Clinical examination revealed the absence of an anal opening, perineal

swelling, and tubercle-like structures in the ventral perineal area. Urine flow was observed from the external urethral orifice, indicating the presence of a vulvar malformation. Radiographic evaluation showed that the rectum ended near the expected anal region. Under general anesthesia, an incision was made in the anal region to reach the blind-ended rectum at the base of the pelvic cavity. The rectum was separated from the surrounding tissues, brought close to the incision line, and secured with fixation sutures. The rectum was then sutured circumferentially to the created anal opening. Finally, gas and meconium were evacuated through the incision made in the rectum. It is recommended that the calf's daily milk intake be divided into meals after the operation. Feeding small amounts of milk in meals encourages the intestines to function without being overloaded. During a telephone conversation in the first week after the operation, it was reported that the calf had regained normal bowel function and that there were no abnormalities in the wound line. Following the operation, controlled feeding during the subsequent period resulted in the calf's complication-free recovery. It has been concluded that cases of anal atresia can be successfully treated with early diagnosis and surgical intervention, and that functional improvement should be the primary goal in cases of accompanying genital anomalies. Furthermore, it has been emphasized that animals with such congenital anomalies should not be used for breeding.

Keywords: Atresia ani, vulvar deformity, calf, congenital anomaly, surgical treatment

**DİJİTAL SAĞLIK OKURYAZARLIĞI VE DİJİTAL SAĞLIK HİZMETLERİ
KULLANIM DAVRANIŞLARI ÜZERİNE BİR KEŞİFSEL ARAŞTIRMA**
AN EXPLORATIVE STUDY ON DIGITAL HEALTH LITERACY AND DIGITAL
HEALTH SERVICES USAGE BEHAVIORS

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Özet

Dijitalleşme, getirdiği yenilikler ve sağladığı kolaylıklar sebebiyle, iş dünyasından sosyal yaşama her alanda hızlı bir şekilde yayılmaya devam etmektedir. Sağlık sektörü de dijitalleşmenin etkisiyle önemli bir dönüşüm geçirmektedir. Geçmişte yalnızca yüz yüze sunulan birçok sağlık hizmeti günümüzde dijital ortamda erişilebilir hale gelmiş ve bu durum hem hastalar için ciddi bir erişim kolaylığı yaratmış hem de sağlık hizmetlerine erişim maliyetlerinde belirgin avantajlar sağlamaktadır. Bu gelişme, bireylerin sağlık hizmetlerine yönelik algılarında önemli değişimlere yol açarken hizmet beklentilerinde de dikkat çekici bir artışa yol açmıştır. Artık günümüzde e-Nabız, MHRS, SABİM gibi sağlık bağlamında hayatımıza giren birçok dijitalleşme uygulamaları bulunmaktadır. Sağladığı kolaylıklara rağmen ülkemizde dijital sağlık hizmetlerinin kullanımında arzulanan düzeyin gerisinde olduğu ve dijital sağlık hizmetlerinin benimsenmesinde çeşitli engellerin olduğu açıktır. Bu soruna çözüm getirme bağlamında atılacak adımların belirlenmesi amacıyla, bu çalışmada, insanların Dijital Sağlık Okuryazarlık düzeylerinin belirlenmesi ve mevcut dijital sağlık hizmetlerinin kullanımına ilişkin sergiledikleri davranışlar incelenerek olası çözüm alternatifleri konusunda katkı sağlanmaya çalışılmaktadır. Bu amaçla, kolayda örneklem yöntemiyle gönüllülük esasına göre seçilmiş 213 katılımcı üzerinde bir anket çalışması yürütülmüştür. Anket içeriğinde demografik bilgiler yanında kişilerin sağlık hizmetlerine ilişkin bilgi arama, randevu alma, laboratuvar sonuçları ve görüntüleme sonuçlarına erişim tercihleri ve sisteminin kullanımına ilişkin bilgiler toplanmıştır. Analiz bulguları, insanların dijital sağlık okuryazarlığı bağlamında daha kat etmeleri gereken mesafenin olduğu ve bunun da başlıca nedenleri arasında dijital dünyaya adaptasyon sorunları, teknoloji okuryazarlığı bağlamındaki eksiklikler ile sisteme yönelik korkular ve dijital platformlardaki yanlış yönlendirmelerin etkili olduğu yönünden işaretler sergilemektedir.

Anahtar Kelimeler: Dijital Sağlık Sistemleri, Dijital Sağlık Okuryazarlığı, Yapay Zeka, Sağlık Bilişimi, Sağlık Bilgisi Arama Davranışı

Abstract

Digitalization, thanks to the innovations and conveniences it offers, continues to rapidly spread across all areas of life, from the business world to social life. The healthcare sector is also experiencing the impact of digitalization. Many healthcare services that were previously offered only face-to-face are now accessible in digital formats, providing not only substantial ease of access for patients but also significant advantages in terms of healthcare service costs. This development has led to notable changes in individuals' perceptions of healthcare services and a marked increase in their expectations. Numerous digitalization applications in healthcare system, such as e-Pulse, MHRS, SABİM are now part of our lives within the

healthcare context. Despite provided advantages, it is clear that the use of digital healthcare services in Turkey falls short of the desired level and that adoption of these services is challenging. To determine the steps to be taken to address this problem, this study aims to contribute to potential solution alternatives by determining people's Digital Health Literacy levels and examining their behaviors regarding the use of existing digital healthcare services. To this end, a survey was conducted with 213 volunteer participants selected using a convenience sampling method. The survey collected demographic information, as well as information on individuals' preferences for seeking healthcare information, scheduling appointments, accessing laboratory and imaging results, and system usage. The analysis findings indicate that people still have a long way to go in terms of digital health literacy, primarily due to difficulties adapting to the digital world, technological literacy gaps, fears about the system, and misleading information on digital platforms.

Keywords: Digital Health Systems, Digital Health Literacy, Artificial Intelligence, Health Informatics, Health Information Seeking Behavior

CONVERGENCE ANALYSIS AND ERROR ESTIMATES FOR AN AGRATINI-TYPE
OPERATOR

AGRATİNİ TİPİ BİR OPERATÖR İÇİN YAKINSAMA ANALİZİ VE HATA HESABI

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ABSTRACT

Approximation theory is an important field that investigates the representation of functions through specific operators and seeks to address one of the fundamental problems of analysis. Approximations carried out by means of linear positive operators find wide applications not only in theoretical mathematics, such as functional analysis and harmonic analysis, but also in applied mathematics, including numerical methods, the solution of differential equations, and computer-assisted computations.

In the referenced study, which holds a significant place in the literature on Agratini-type operators, positive linear and discrete operators based on Bernstein-type rational functions were introduced and considered as a generalized version of classical Bernstein polynomials. The approximation properties of these operators were examined through Korovkin-type theorems, with the necessary conditions for convergence established, emphasizing in particular the role of positive and decreasing coefficient sequences. Furthermore, in order to estimate the error bounds of the operators, a probabilistic approach was employed to clarify their properties, and these estimates were evaluated within the framework of the modulus of continuity and the theory of uniform approximation. The analysis was not restricted to classical function spaces but was also extended to weighted function spaces, thereby demonstrating the broader applicability of the proposed operators.

Based on this study, now the approximation properties of Agratini-type and Balannz-type positive linear operators are investigated. First, the fundamental definitions of these operators are presented, and then their approximation behavior is analyzed within the framework of Korovkin's theorem. By employing the modulus of continuity, the rates of convergence and error estimates of the operators are established. To visually support the theoretical results, graphical representations of the approximations obtained for selected functions are provided, and the effectiveness of the operators is comparatively evaluated. The findings demonstrate that Agratini-type and Balannz-type operators serve as powerful tools in the uniform approximation of functions. Moreover, the error analyses obtained via the modulus of continuity enhance the applicability of these operators in applied mathematics and numerical methods. Overall, the study contributes to the literature on operator analysis by combining both theoretical and graphical results.

Keywords: Agratini-type operators, Bernstein-type rational functions, Korovkin theorem, Error estimation

SEISMIC PERFORMANCE OF AN EIGHT-STORY RC BUILDING UNDER SEQUENTIAL EARTHQUAKES: A CASE STUDY FROM THE 2023 MALATYA EVENTS

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Abstract

On 6 February 2023, the southern region of Türkiye experienced an unprecedented sequence of two major earthquakes occurring nine hours apart. The first earthquake much stronger, produced by a peak ground acceleration (PGA) of approximately 0.6 g, was followed by the second earthquake with a PGA of 0.2 g. While the disaster impacted eleven provinces, the city of Malatya was notably more affected during the second earthquake. In this research, seismic records obtained from the nearest strong-motion station to the building site were used to evaluate the structural response of an eight-story reinforced concrete (RC) building.

A series of nonlinear analyses was carried out using Extreme Loading for Structures (ELS) software to simulate the seismic behavior of the building under three scenarios: (1) each earthquake applied independently, (2) the second event applied to the undamaged building, and (3) the second event applied after incorporating the damage accumulated from the first event. The modelling approach allowed for detailed tracking of progressive damage and the evolution of failure mechanisms.

The investigation revealed that the corner region of the building was especially vulnerable. Significant shear demands developed in the corner column in the Y-direction, with damage increasing progressively when the structure was subjected to the second earthquake following the initial event. This cumulative effect ultimately led to failure at the building corner. The findings demonstrate that sequential earthquake loading can critically amplify damage patterns that may not be evident when events are assessed individually.

Overall, the study highlights the importance of considering multi-event seismic scenarios in performance evaluations of existing RC buildings. The adopted methodology can be extended to assess other structures exposed to similar conditions, providing a practical framework for understanding collapse mechanisms triggered by consecutive earthquakes.

Keywords:

Sequential earthquakes; Reinforced concrete buildings; Nonlinear analysis; Progressive collapse; Cumulative seismic damage; ELS software; Malatya earthquake sequence.

TAMARINDUS INDICA (DEMİRHİNDİ) MEYVESİNDE OKSİDAN/ ANTİOKSİDAN KAPASİTESİ

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ÖZET

Giriş: Bitkilerle tedavi geleneksel tedavi, tamamlayıcı tedavi, doğal tedavi gibi farklı isimlerle, gelişmemiş ülkeler başta olmak üzere dünyanın birçok ülkesinde kullanılmaktadır. *Tamarindus indica* (Demirhindi), Afrika ve Güney Asya'ya özgü Caesalpiniaceae alt familyasının çok amaçlı, tropikal, yaprak dökmeyen baklagil türlerinin bir üyesidir. Küresel pazarda ticarileştirilmiş az sayıdaki tropikal tıbbi bitkilerden biri olup Asya'da Tayland, Bangladeş, Endonezya; Amerika'da ise Meksika ve Kosta Rika gibi ülkelerde de sıklıkla bulunmaktadır. Zengin antioksidan içeriği, doğal şekerleri, organik asitleri ve fitokimyasal bileşikleri nedeniyle hem bilimsel araştırmalarda hem de geleneksel tıpta dikkat çekmiştir. İlk defa yapılan bu çalışmamızda, *Tamarindus indica* meyve ekstratlarında oksidan/antioksidan durumunun araştırılması amaçlandı.

Materyal ve Metot: Çalışma kapsamına taze *Tamarindus indica* meyve kısımları alındı ve bir bıçak yardımıyla parçalanması sağlandı. Bu işlem sonrası parçalanmış meyve kısımları %1,15 KCl ile homojenize edildi. Elde edilen bitki homojenatları 14.000 rpm'de 30 dakika santrifüj edilerek supernatantlar elde edildi. Supernatantlarda antioksidan enzimler olarak superoksit dismutaz (SOD) ve katalaz (CAT) aktiviteleri ile oksidatif stresin göstergesi olan malondialdehit (MDA) düzeyleri spektrofotometrik olarak ölçüldü.

Bulgular: Taze *Tamarindus indica* meyvesinde SOD aktivitesi: $3,54 \pm 0,15$ Ü/mg protein, CAT aktivitesi: $0,954 \pm 0,08$ Ü/mg protein, ve MDA düzeyleri $1,57 \pm 0,09$ nmol/mg protein olarak bulundu.

Sonuç: Çalışma kapsamında kullanılan *Tamarindus indica* meyvesi fitokimyasal özelliklerinden dolayı yüksek antioksidan kapasiteye ve düşük düzeylerde oksidatif strese sahip oldukları gözlenmiştir.

Anahtar Kelimeler: *Tamarindus indica*, antioksidan enzimler, oksidatif stres, meyve ekstresi

OXIDANT/ANTIOXIDANT CAPACITY IN TAMARINDUS INDICA (TAMARIND) FRUIT

ABSTRACT

Introduction: Herbal therapy, under various names such as traditional therapy, complementary therapy, and natural therapy, is used in many countries around the world, particularly in underdeveloped countries. *Tamarindus indica* (*Tamarindus indica*) is a member of the Caesalpiniaceae subfamily, a multipurpose, tropical, evergreen legume species native to Africa and South Asia. It is one of the few commercialized tropical medicinal plants on the global market and is commonly found in countries such as Thailand, Bangladesh, and Indonesia in Asia, and Mexico and Costa Rica in the Americas. Its rich antioxidant content, natural sugars, organic acids, and phytochemical compounds have attracted attention in both scientific research and traditional medicine. This study, conducted for the first time, aimed to investigate the oxidant/antioxidant status of *Tamarindus indica* fruit extracts.

Materials and Methods: Fresh *Tamarindus indica* fruit sections were taken and crushed using a knife. Following this process, the crushed fruit sections were homogenized with 1.15% KCl. The resulting plant homogenates were centrifuged at 14,000 rpm for 30 minutes to obtain supernatants. The antioxidant enzymes superoxide dismutase (SOD) and catalase (CAT) activities, as well as malondialdehyde (MDA) levels, an indicator of oxidative stress, were measured spectrophotometrically in the supernatants.

Findings: In fresh *Tamarindus indica* fruit, SOD activity was found to be 3.54 ± 0.15 U/mg protein, CAT activity was found to be 0.954 ± 0.08 U/mg protein, and MDA levels were found to be 1.57 ± 0.09 nmol/mg protein.

Conclusion: Due to their phytochemical properties, the *Tamarindus indica* fruit used in this study was observed to have high antioxidant capacity and low levels of oxidative stress.

Keywords: *Tamarindus indica*, antioxidant enzymes, oxidative stress, fruit extract

METHODOLOGICAL APPROACHES AND SCIENTIFIC DOCUMENTATION IN ARCHAEOLOGICAL EXCAVATIONS

ARKEOLOJİK KAZILARDA YÖNTEMSEL YAKLAŞIMLAR VE BİLİMSEL BELGELEME SÜREÇLERİ

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ABSTRACT

Archaeological excavations are fundamental field methods aimed at systematically uncovering the material culture of past societies. Excavations encompass not only the recovery of artifacts but also their contextual and chronological interpretation. Today, three main types of excavations are commonly conducted: research excavations, rescue excavations, and trial trenches (test excavations). Research excavations are long-term academic projects, while rescue excavations document threatened sites before construction projects. Test excavations provide stratigraphic insights into potential archaeological areas. The most widely used modern technique is stratigraphic excavation, in which each layer is documented separately and analyzed through a Harris Matrix. Additionally, geophysical prospection, digital recording, 3D modeling, and archaeometric analyses (including C-14 dating, soil, pollen, metal, and bone studies) are integral to contemporary fieldwork. Excavations in Turkey adhere to both national regulations and international ethical frameworks, concluding with conservation, restoration, and reporting phases. These methodological advances have transformed archaeological excavations from mere discovery processes into essential practices for the sustainable management of cultural heritage.

Keywords: Archaeological excavation, stratigraphy, documentation, geophysics, archaeometry, cultural heritage

ÖZET

Arkeolojik kazılar, geçmiş toplumların maddi kültürünü sistematik olarak ortaya çıkarmayı amaçlayan temel saha araştırma yöntemlerindendir. Kazılar, yalnızca buluntuların keşfini değil, aynı zamanda bu buluntuların bağlamsal ve kronolojik analizini de kapsar. Günümüzde kazılar, üç ana kategori altında yürütülmektedir: bilimsel (araştırma) kazıları, kurtarma kazıları ve sondaj kazıları. Bilimsel kazılar akademik amaçlı olup uzun soluklu çalışmalardır; kurtarma kazıları ise baraj, otoyol veya inşaat projeleri öncesinde tehdit altındaki kültürel mirasın belgelenmesine yöneliktir. Sondaj kazıları, potansiyel arkeolojik alanların stratigrafik yapısını anlamak için uygulanır. Modern kazılarda en yaygın yöntem stratigrafik kazıdır; her tabaka ayrı ayrı belgelenir ve “Harris Matrisi” aracılığıyla ilişkileri analiz edilir. Ayrıca jeofizik ön incelemeler, dijital belgeleme, 3D modelleme ve arkeometrik analizler (C-14, polen, toprak, metal, kemik incelemeleri) bilimsel sürecin ayrılmaz parçaları haline gelmiştir. Türkiye’de yürütülen kazılar, hem ulusal mevzuat hem de uluslararası etik ilkeler çerçevesinde korunma, restorasyon ve raporlama aşamalarıyla tamamlanmaktadır. Bu yöntemsel gelişmeler, arkeolojik kazıların yalnızca geçmişi ortaya koymakla kalmayıp kültürel mirasın sürdürülebilir yönetiminde de belirleyici rol oynamasını sağlamaktadır.

Anahtar Kelimeler: Arkeolojik kazı, stratigrafi, belgeleme, jeofizik, arkeometri, kültürel miras

CONTEMPORARY APPROACHES AND METHODOLOGICAL ADVANCES IN
ARCHAEOLOGICAL SURFACE SURVEYS

ARKEOLOJİK YÜZEY ARAŞTIRMALARINDA ÇAĞDAŞ YAKLAŞIMLAR VE
YÖNTEMSSEL GELİŞMELER

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ABSTRACT

Surface surveys are among the fundamental archaeological methods that enable the systematic collection of data without excavation. Modern archaeology has enhanced these surveys through technological innovation and interdisciplinary integration, allowing for more precise and interpretable results. Contemporary surface surveys are generally divided into two categories: extensive and intensive. While extensive surveys provide a preliminary overview of large areas, intensive surveys focus on collecting detailed data within smaller regions. Methods such as GPS-based mapping, geophysical techniques (magnetometry, ground-penetrating radar, electrical resistivity), and remote sensing (LIDAR, satellite imagery) are widely applied. Data obtained from these approaches are processed using Geographic Information Systems (GIS) for spatial analysis and digital documentation. In recent years, public engagement, digital preservation, and participatory approaches have transformed surface surveys into vital tools for cultural heritage management. In this context, Turkey stands out internationally with nearly 750 excavation and survey projects conducted under the supervision of both local and foreign researchers.

Keywords: Archaeology, surface survey, geophysical methods, remote sensing, GIS, cultural heritage

ÖZET

Yüzey araştırmaları, arkeolojik verilerin kazıya gerek duyulmaksızın sistematik biçimde toplanmasını sağlayan temel yöntemlerden biridir. Modern arkeoloji, teknolojik yeniliklerin ve disiplinlerarası analizlerin entegrasyonu sayesinde yüzey araştırmalarını daha hassas ve yorumlanabilir hale getirmiştir. Günümüzde yüzey araştırmaları, iki ana kategoride sınıflandırılır: geniş (extensive) ve yoğun (intensive) yüzey araştırmaları. Geniş yüzey araştırmaları, geniş alanların genel arkeolojik potansiyelini belirlemeye yönelik ön incelemeler sağlarken, yoğun yüzey araştırmaları daha dar alanlarda ayrıntılı veri toplama olanağı sunar. Bu süreçte GPS tabanlı haritalama, Jeofiziksel yöntemler (manyetometri, jeoradar, elektriksel rezistivite) ve uzaktan algılama (LIDAR, uydu görüntüleri) gibi teknolojiler etkin biçimde kullanılmaktadır. Ayrıca Coğrafi Bilgi Sistemleri (GIS) yardımıyla elde edilen veriler dijital ortama aktarılmakta ve mekânsal analizlerle yerleşim örüntüleri yorumlanmaktadır. Son yıllarda toplum katılımı, dijital belgeleme ve koruma odaklı yaklaşımlar yüzey araştırmalarını yalnızca bilimsel bir etkinlik olmaktan çıkarıp kültürel mirasın korunmasında önemli bir araç haline getirmiştir. Bu bağlamda Türkiye, 750'ye yakın kazı ve yüzey araştırmasıyla uluslararası ölçekte öne çıkan bir konuma sahiptir.

Anahtar Kelimeler: Arkeoloji, yüzey araştırması, jeofizik yöntemler, uzaktan algılama, GIS, kültürel miras

EFFECTS OF WATER DEFICIT AND METHIONINE TREATMENT ON MINERAL CONTENT IN EGGPLANT LEAVES AND ROOTS

KURAKLIK STRESİ VE METİYONİN UYGULAMASININ PATLİCAN YAPRAK VE KÖKLERİNDEKİ MİNERAL İÇERİĞİ ÜZERİNE ETKİLERİ

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ÖZET

Kuraklık, dünya çapında en yaygın olarak yetiştirilen sebze gruplarından biri olan Solanaceae familyası için de önemli sorunlar oluşturmaktadır. Bunun yanı sıra su stresi patlıcanda bitki büyümesini, gelişimini, verimini ve meyve kalitesini belirgin şekilde olumsuz etkilemektedir. Bu nedenle, bu çalışmada, su stresi altındaki patlıcan fidelerinin fizyolojisinde esansiyel bir amino asit olan metioninin rolü araştırılmıştır. Çalışmada, dışsal olarak uygulanan metioninin farklı sulama seviyelerinde (%100 ve %50 tarla kapasitesi) patlıcan fidelerinin fizyolojik tepkilerini özellikle mineral besin elementi içeriklerini nasıl modüle ettiği incelenmiştir. Bu kapsamda, 0 mg/L kontrol, 10 mg/L ve 20 mg/L metioninin uygulamalarının hem yaprak hem de köklerdeki mineral içeriği (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu ve Na) üzerindeki etkileri değerlendirilmiştir. %50 tarla kapasitesinde sulama, her iki dokuda da mineral element seviyelerinde genel bir azalmaya neden olmuştur. Stresiz koşullarda (%100 tarla kapasitesi), metiyonin uygulamaları mineral içeriğini önemli ölçüde artırarak bitki büyümesine ve gelişimine katkıda bulunmuştur. En kritik bulgu, metiyonin uygulamalarının su eksikliğinde stres kaynaklı mineral içeriğindeki azalmaları önemli ölçüde azaltarak bitki kuraklık toleransını artırmasıdır. Sonuçlar, metiyoninin bitki büyümesi ve gelişimi için önemli bir destekleyici olduğunu ve mineral alımı ve düzenlenmesinde aktif rol oynadığını göstermektedir. Stres koşullarında besin dengesini koruma kapasitesi metiyonini, sınırlı su kaynaklarına sahip tarım alanlarında potansiyel bir stres azaltıcı biyostimülan haline getirmektedir.

Anahtar Kelimeler: Patlıcan, Kuraklık, Metiyonin, Mineral İçeriği, Stres

ABSTRACT

Drought also poses significant problems for the Solanaceae family, one of the most widely cultivated vegetable groups worldwide. In addition, water stress significantly impacts plant growth, development, yield, and fruit quality in eggplant. Therefore, this study examined the role of methionine, an essential amino acid, in the physiology of eggplant seedlings under water stress. We investigated how exogenously applied methionine modulated physiological responses, including mineral content, in eggplant seedlings under different irrigation levels (100% and 50% of field capacity). The study examined the effects of 10 mg/L and 20 mg/L methionine, and a control group of 0 mg/L, on the mineral content (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu, and Na) of both leaves and roots. Irrigation at 50% field capacity caused a general reduction in mineral element levels in both tissues. Under non-stressed conditions (100% field capacity), methionine applications significantly increased mineral content, contributing to plant growth and development. The most critical finding was that methionine applications significantly mitigated stress-induced decreases in mineral content under water deficit, increasing plant drought tolerance. The results demonstrated that methionine is an essential promoter of plant growth and development, playing an active role in mineral uptake and regulation. Its ability to maintain nutrient balance under stress conditions makes it a potential stress-mitigating biostimulant in agricultural areas with limited water resources.

Keywords: Eggplant, Drought, Methionine, Mineral Content, Stress

ROLE OF EXOGENOUS IODINE IN PLANT GROWTH PROMOTION AND STRESS TOLERANCE IN GARDEN CRESS PLANT (*Lepidium sativum* L.) UNDER SALT STRESS

BAHÇE TERESİ BİTKİSİNDE (*Lepidium sativum* L.) TUZ STRESİ ALTINDA BİTKİ BÜYÜMESİNİN TEŞVİKİ VE STRES TOLERANSINDA EKZOJEN İYOTUN ROLÜ

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ÖZET

Küresel iklim değişikliği tarımsal üretimi de etkilemiş ve bitkilerin maruz kaldığı abiyotik streslerin şiddeti artmıştır. Tuz stresi bu faktörlerin en zararlılarından biridir ve olumsuz etkilerini azaltmak için dışsal uygulamalar da dahil olmak üzere çeşitli stratejiler kullanılmaktadır. İyot, potansiyel düzenleyici işlevleri nedeniyle özel bir ilgi gören bir mineraldir. Çalışmada, bitkisel materyal olarak tere (*Lepidium sativum* L.) kullanılmıştır. Tuz stresi 150 mM NaCl'de uygulanmış ve iyot, yapraklara 40 ve 80 µM potasyum iyodat (KIO₃) püskürtülerek uygulanmıştır. Uygulamaların tere üzerindeki etkilerini belirlemek amacıyla bitki boyu, gövde çapı, yaprak sayısı, yaprak alanı, bitki taze ağırlığı, bitki kuru ağırlığı, kök taze ağırlığı, kök kuru ağırlığı ve yaprak alanı ölçülmüştür. Ek olarak, elektriksel iletkenlik (EC), yaprak bağıl su içeriği (LRWC), klorofil içeriği (a, b ve toplam), hidrojen peroksit (H₂O₂), malondialdehit (MDA), prolin ve antioksidan enzimler katalaz (CAT), peroksidaz (POD) ve süperoksit dismutaz (SOD) aktiviteleri analiz edildi. Tuz stresi bitki büyüme parametrelerini düşürdü ve EC, H₂O₂, MDA, prolin ve antioksidan enzim aktivitelerini (CAT, POD ve SOD) artırdı; bu da oksidatif hasarı göstermektedir. Bitki büyüme parametreleri normal koşullar altında önemli ölçüde arttı ve tuz stresinin zararlı etkileri uygulamalarla minimum azalmalarla hafifletildi. Uygulamalar, antioksidan enzim aktivitesini artırarak stresin etkilerini azalttı. Çalışma, iyotun stres toleransını artırıcı etkilerini ortaya koysa da, mekanizmasının ayrıntılı bir şekilde anlaşılması, pratik uygulanabilirliği için daha yararlı olacaktır.

Anahtar Kelimeler: Biyofortifikasyon, Tuzluluk, Tere, Hafifletici Etki

ABSTRACT

Global climate change has also affected agricultural production, and the severity of abiotic stresses to which plants are exposed has increased. Salt stress is among the most detrimental of these factors, and various strategies, including exogenous applications, are used to mitigate its adverse effects. Iodine is a mineral of particular interest due to its potential regulatory functions. In the study, garden cress (*Lepidium sativum* L.) was used as a plant material. Salt stress was applied at 150 mM NaCl, and iodine was applied by spraying leaves with potassium iodate (KIO₃) at 40 and 80 µM. To determine the effects of the treatments on cress, plant height, stem diameter, leaf number, leaf area, plant fresh weight, plant dry weight, root fresh weight, and root dry weight were measured. Additionally, electrical conductivity (EC), leaf relative water content (LRWC), chlorophyll content (a, b, and total), hydrogen peroxide (H₂O₂), malondialdehyde (MDA), proline, and the activities of the antioxidant enzymes catalase (CAT), peroxidase (POD), and superoxide dismutase (SOD) were analyzed. Salt stress reduced plant growth parameters and increased EC, H₂O₂, MDA, proline, and antioxidant enzyme activities (CAT, POD, and SOD), indicating oxidative damage. Plant growth parameters increased significantly under normal conditions, and the damaging effects of salt stress were mitigated by the treatments, with minimal decreases. The treatments reduced the effects of stress by increasing antioxidant enzyme activity. Although the study revealed the stress-tolerance-enhancing effects of iodine, a detailed understanding of its mechanism would be more beneficial for its practical applicability.

Keywords: Biofortification, Salinity, Cress, Mitigation Effect

REORGANIZATION OF PHYTOHORMONE AND MINERAL PROFILE IN SALT-STRESSED *Lepidium sativum* BY IODINE
TUZ STRESİ ALTINDAKİ *Lepidium sativum*'da İYOT TARAFINDAN
FİTOHORMON VE MİNERAL PROFİLİNİN YENİDEN DÜZENLENMESİ

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ÖZET

Tuzluluk, dünya çapında ürün verimliliğini sınırlayan başlıca çevresel etmenlerden biridir ve bitki toleransını artırmaya yönelik stratejilere duyulan ihtiyaç giderek artmaktadır. Son çalışmalar, iyot uygulamasının bitkilerin tuz stresine karşı dayanıklılığını artırarak bu soruna etkili bir çözüm sağlayabileceğini göstermektedir. Bu çalışmada, iyotun tuz stresi altındaki tere bitkileri üzerindeki etkileri mineral besin maddeleri ve fitohormon içerikleri açısından değerlendirilmiştir. Bu amaçla, 2-3 yapraklı dönemdeki fideler 40 ve 80 µM KIO₃ çözeltileri ile ekzojen olarak yapraktan uygulanmış ve bitkiler 0 ve 150 mM NaCl ile sulanmıştır. Hasat döneminde alınan yaprak örnekleri N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu ve Na'nın yanı sıra IAA, ABA, GA, SA, sitokininler ve jasmonik asit düzeyleri açısından analiz edilmiştir. Tuz stresi, Na hariç mineral içeriklerini ve ABA hariç fitohormon düzeylerini önemli ölçüde azaltmıştır. Ancak, her iki iyot dozu da bu olumsuz etkileri önemli ölçüde hafifletmiştir. Stres uygulanmayan koşullarda ise iyot uygulaması, değerlendirilen besin maddesi ve hormon düzeylerinde belirgin artışlara neden olarak bitki gelişimini desteklemiştir. Bu sonuçlar, ekzojen iyot uygulamasının hem normal bitki büyümesi hem de tuz stresi toleransının artırılması açısından dikkate değer bir potansiyele sahip olduğunu göstermektedir.

Anahtar Kelimeler: Tere Otu, Tuzluluk, Mineral Madde, Fitohormon

ABSTRACT

Salinity is one of the major environmental factors limiting crop productivity worldwide, and the need for strategies to enhance plant tolerance is growing. Recent studies indicate that iodine application can provide an effective solution to this problem by increasing plant resistance to salt stress. In this study, the effects of iodine on cress plants under salt stress were evaluated with respect to mineral nutrients and phytohormone content. For this purpose, seedlings at the

2-3 leaf stage were sprayed with 40 and 80 μM KIO_3 solutions, and the plants were irrigated with 0 and 150 mM NaCl. Leaf samples taken at harvest were analyzed for N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu, and Na, as well as for IAA, ABA, GA, SA, cytokinins, and jasmonic acid. Salt stress significantly reduced mineral content, except for Na, and phytohormone levels, except for ABA. However, both iodine doses significantly alleviated these adverse effects. Under non-stressed conditions, iodine application significantly increased the levels of assessed nutrients and hormones, supporting plant growth. These results demonstrate that exogenous iodine application has significant potential for both normal plant growth and increased salt stress tolerance.

Keywords: Garden Cress, Salinity, Mineral Matter, Phytohormone

**ŞALGAM (*BRASSICA RAPA*)'IN RUMİNANT VE KANATLI HAYVAN
BESLEMESİNDE KULLANIMI**

USE OF TURNIP (*BRASSICA RAPA*) IN RUMINANT AND POULTRY NUTRITION

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ÖZET

Bu derlemede, *Brassica rapa* L. (şalgam) bitkisinin ruminant ve kanatlı hayvanların beslenmesinde kullanımı ve sağlık üzerindeki etkileri incelenmiştir. Hayvansal protein arzının arttırılmasında kaba yemlerin faydaları ve ülke hayvancılığına katkıları yadsınamaz bir gerçektir. Özellikle küresel ısınmanın son yıllarda etkisinin giderek artması, hayvancılıkta alternatif yem kaynakları arayışlarını tetiklemiştir. Özellikle tarımsal atıklar hayvan besleme için alternatif bir yem kaynağı olarak dikkatleri üzerine çekmekte ve döngü ekonomisi için yararlı veriler sunmaktadır. *Brassica rapa*, yüksek biyokütle üretimi ve kolay sindirilebilirliği ile önemli bir yem kaynağı olarak öne çıkmaktadır. Özellikle, şalgam bitkisinin sonbahar ve kış aylarında otlatma amacıyla kullanımı, ruminant hayvanlar için yüksek kaliteli yem sağlarken, düşük sıcaklıklara karşı dayanıklılığı sayesinde verimliliği artırmaktadır. Ancak, bu bitkilerdeki yüksek nitrat içeriği nedeniyle sağlık sorunlarına yol açabileceği için dikkatli kullanım gerekmektedir. Ülke ekonomisine katkısı ve ucuz protein kaynağı olarak öne çıkan kanatlı hayvan sektörü farklı araştırmalara konu olmaktadır. *Brassica rapa*'nın kanatlılarda kullanımı üzerine yapılan araştırmalar, özellikle *Brassica rapa* tohumlarının ve polisakkaritlerinin büyüme performansı, bağışıklık fonksiyonu ve bağırsak sağlığı üzerinde olumlu etkiler sağladığını göstermektedir. Ayrıca, qıamagu polisakkaritlerinin, antibiyotiklerin yerine geçebilecek potansiyele sahip olduğu ve tavukların sindirim sistemini iyileştirdiği gözlemlenmiştir. Sonuç olarak, *Brassica rapa* L. bitkisinin ruminant ve kanatlı hayvanlarda verimlilik artırıcı ve sağlık destekleyici etkiler sunduğu, bununla birlikte dikkatli yönetimle nitrat zehirlenmesi gibi olası sağlık risklerinin minimize edilebilmesi üzerinde durulmuştur.

Anahtar kelimeler: Şalgam, Hayvan Besleme, Kaba Yem, Üretim, Sağlık

ABSTRACT

This review examined the use of *Brassica rapa* L. (turnip) in ruminant and poultry nutrition and its health effects. The benefits of forages in increasing animal protein supply and their contribution to national livestock production are undeniable. The increasing impact of global warming in recent years has triggered the search for alternative feed sources in animal husbandry. Agricultural waste, in particular, is attracting attention as an alternative feed source

for animal nutrition and provides useful data for the circular economy. Brassica rapa stands out as an important feed source with its high biomass production and easy digestibility. The use of turnips for grazing in the fall and winter provides high-quality feed for ruminant animals and increases productivity thanks to its resistance to low temperatures. However, due to the high nitrate content in these plants, they can cause health problems, so they should be used with caution. The poultry sector, which stands out as a source of inexpensive protein and contributes to the national economy, is the subject of various studies. Studies on the use of Brassica rapa in poultry indicate that Brassica rapa seeds and their polysaccharides, in particular, provide positive effects on growth performance, immune function, and intestinal health. Furthermore, qiamagu polysaccharides have been observed to have the potential to replace antibiotics and improve the digestive system of chickens. In conclusion, Brassica rapa L. offers productivity-enhancing and health-promoting effects in ruminants and poultry, while careful management can minimize potential health risks such as nitrate toxicity.

Keywords: Turnip, Animal Nutrition, Forage, Production, Health

**SİNİROTUNUN (*PLANTAGO* SPP.) KANATLI BESLEMESİNDE KULLANIMI:
ETLİK PİLİÇLER VE YUMURTACI TAVUKLAR ÜZERİNE OLAN ETKİLERİ**

USE OF PLANTAIN (*PLANTAGO* SPP.) IN POULTRY NUTRITION: EFFECTS ON
BROILER AND LAYING CHICKENS

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ÖZET

Bu derlemede, Sinirotunun (*Plantago lanceolata*), etlik piliçler ve yumurtacı tavuklar üzerindeki etkileri incelenmiştir. Dünya nüfusunun artmasının yanında artan gelir eşitsizliği hayvansal kökenli proteinlere erişimi zorlaştırmaktadır. Bu şartlarda gerek yumurta gerekse de beyaz et halen ucuz protein kaynakları olarak insan beslenmesinde öne çıkmaktadır. Küresel ısınmanın yem maliyetleri üzerindeki artan etkisi farklı yem kaynaklarının hem yem hem de yem katkı maddesi olarak kullanılabilirliği üzerine araştırmaları artırmıştır. Ülkemizin sahip olduğu zengin bitki çeşitliliği ve bu bitkilerin fitokimyasal bakımından potansiyel yararlarını ortaya koymak için yapılan çalışmalar devam etmektedir. Sinirotu değişik toprak şartlarında kolaylıkla gelişebilen, Plantaginaceae familyasının ait çok yıllık bir bitkidir. İlkbaharda çiçek açan sinirotu bitkisinin olgunlaşması Eylül ayını bulmakta olup acımsı bir tada sahiptir. Türkiye'nin çayır ve meralarında doğal olarak yetişen sinir otunun dar yapraklı ve geniş yapraklı türleri mevcuttur. Sinirotunun içerdiği fitokimyasal kompozisyonundaki bol miktarda sekonder metabolit aktif maddelerden (glikozitler, flavonoidler, tanenler, polisakkaritler) kaynaklı antioksidan, antitümör, antihelmintik ve antimikrobiyal etkilere sahiptir. Sinirotu, sahip olduğu biyolojik aktif bileşenler sayesinde hayvan sağlığını ve üretim performansını iyileştirmektedir. Etlik piliçlerde, sinirotu takviyesi büyüme performansını artırmakta, etin renk, lezzet ve duysal özelliklerini iyileştirmektedir. Yumurtacı tavuklarda ise, yumurta sarısının rengini artırarak yumurta üretimini desteklemektedir. Ancak, aşırı dozda kullanımının olumsuz sonuçlar doğurabileceği vurgulanarak, uygun dozajın belirlenmesi önemlidir. Sinirotu, doğal bir yem katkı maddesi olarak büyük potansiyel taşımaktadır.

Anahtar kelimeler: Sinir Otu, Hayvan Besleme, Fitokimyasal, Üretim, Sağlık

ABSTRACT

This review examined the effects of plantain (*Plantago lanceolata*) on broilers and laying hens. The increasing global population coupled with increasing income inequality makes access to animal-based proteins difficult. Under these circumstances, both eggs and white meat remain prominent sources of inexpensive protein in human nutrition. The increasing impact of global warming on feed costs has increased research on the usability of different feed sources as both feed and feed additives. Studies are ongoing to reveal Türkiye's rich plant diversity and the potential phytochemical benefits of these plants. Plantain is a perennial plant belonging to the Plantaginaceae family that thrives in diverse soil conditions. Plantain blooms in spring and matures in September, with a bitter taste. Plantain naturally grows in Türkiye's meadows and pastures, and there are both narrow-leaved and broad-leaved species. Plantain has antioxidant, antitumor, anthelmintic, and antimicrobial effects due to the abundant secondary metabolite active substances (glycosides, flavonoids, tannins, polysaccharides) in its phytochemical composition. Thanks to its biologically active components, plantain improves animal health and production performance. In broiler chickens, plantain supplementation increases growth performance and improves meat color, flavor, and sensory properties. In laying hens, it supports egg production by enhancing egg yolk color. However, it is important to determine the appropriate dosage, as excessive use can have negative consequences. Plantain holds great potential as a natural feed additive.

Keywords: Plantain, Animal Nutrition, Phytochemical, Production, Health

EFFECT OF DIETARY ADDITION OF CHEESE POWDER ON PERFORMANCE AND EGG QUALITY IN LAYING QUAILS

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ABSTRACT

This study was conducted to examine the effect of using cheese powder as an additive in the diet of laying quails on performance and egg quality. In the study, a total of 90 female quails at 10 weeks of age were randomly distributed into 5 treatment groups with 6 replicates, each containing 3 quails. The treatments were created by adding cheese powder to the basal diet at levels of 0, 2.5, 5.0, 7.5, and 10 g/kg. Quails were fed with treatment diets for 8 weeks. Body weight change, egg weight, egg mass, feed intake, feed conversion ratio, eggshell rate, and yolk index were not affected by the addition of cheese powder to the diet ($p > 0.05$). Dietary supplementation of 5 g/kg cheese powder increased final body weight compared to the control group ($p < 0.05$). Egg production increased at 10 g/kg compared to 5 and 7.5 g/kg ($p < 0.05$) but no difference was found between the treatment groups and control group. Eggshell breaking strength increased with the addition of 2.5 and 10 g/kg cheese powder and eggshell thickness improved at 5 and 10 g/kg compared to the control ($p < 0.05$). Albumen index ($p < 0.05$) and Haugh unit ($p < 0.05$) decreased at 7.5 and 10 g/kg cheese powder compared the control group. According to these results, positive results were obtained for eggshell quality in laying quails at levels of 2.5, 5, and 10 g/kg of cheese powder but internal quality parameters were negatively affected at high level (10 g/kg). Therefore, it can be said that the effects of cheese powder on performance in laying quail diets need to be evaluated with further studies, and that levels of 2.5 and 5 g/kg are appropriate for egg quality.

Keywords: Cheese powder, quail, performance, egg quality

**ÇİFT ÇIKIŞLI SIFIR GERİLİMDE ANAHTARLAMALI TAM KÖPRÜ DC-DC
DÖNÜŞTÜRÜCÜNÜN ANALİZİ**

**ANALYSIS OF DUAL OUTPUT ZERO VOLTAGE SWITCHING FULL BRIDGE
DC-DC CONVERTER**

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ÖZET

Teknolojinin her geçen gün gelişmesi ve bu gelişmelerin güç elektroniği devrelerinde kullanılan elemanlara yansımından dolayı yüksek güç yoğunluğu ve yüksek verimlilik, güç elektroniği uygulamalarında istenilen bir özellik olarak karşımıza çıkmaktadır. Modern tasarımlara sahip güç devrelerinde, yüksek güç yoğunluğunun elde edilmesi ile, tasarlanan devrelerin boyutlarında gözle görülür biçimde azalma görülmektedir. Yüksek güç yoğunluğu ile devre üzerinde bulunan birçok aktif veya pasif elemanın değerinde azalma görülmektedir. Bu sayede devre eleman boyutlarından kazanç elde edilebilmektedir.

Klasik DC-DC dönüştürücüler üzerinde yüksek güç yoğunluğu yüksek frekans ile elde edilmektedir. Yüksek frekansa sahip anahtar sinyallerinin elde edilmesinde, frekans modülasyonu, darbe genişlik modülasyonu (DGM) gibi teknikler sıklıkla kullanılmaktadır. Frekans modülasyonu tekniğinin kontrol zorluğu, değişken frekans ve buna bağlı komponent parametreleri gibi dezavantajları bulunurken, DGM tekniğinde ise düşük anahtarlama frekansı, yüksek anahtarlama kaybı gibi dezavantajlar bulunmaktadır. DGM tekniğinde uygulama kolaylığı ise en büyük avantajlarından biri olarak karşımıza çıkmaktadır.

Yüksek güç yoğunluğunun elde edilebilmesi amacıyla, DC-DC dönüştürücüler üzerinde kullanılan anahtarlama elemanları üzerinde gerçekleşen kayıpların azaltılması gerekmektedir. Kayıpların azaltılması amacıyla faz kaydırma tekniği sıklıkla kullanılmaktadır. Klasik DGM sahip dönüştürücün, üretilen sinyallerinin fazlarının kaydırılmasıyla, faz kaydırma tekniği gerçekleştirilmiş olur. Tam köprü DC-DC dönüştürücüye uygulanan faz kaydırma tekniği sayesinde, tam köprü anahtarlarının yumuşak olarak ilettime girmesi sağlanmaktadır.

Yapılan bu çalışmada, çift çıkışlı faz kaydırmalı tam köprü DC-DC dönüştürücünün çalışması açıklanacak olup, simülasyon çalışmaları gerçekleştirilecektir.

Anahtar Kelimeler: Sıfır Gerilimde Anahtarlama, Tam Köprü DC-DC Dönüştürücü, Yumuşak Anahtarlama

ABSTRACT

Due to the advancements in technology day by day and the impact of these advancements on the components used in power electronics circuits, high power density and high efficiency are becoming increasingly desirable features in power electronics applications. In modern power circuits, achieving high power density significantly reduces the size of the designed circuits. High power density results in a reduction in the value of many active and passive components within the circuit. This allows for savings in circuit component size.

High power density is achieved with high frequency in conventional DC-DC converters. Techniques such as frequency modulation and pulse width modulation (PWM) are frequently used to generate high-frequency switching signals. While frequency modulation techniques have disadvantages such as difficulty in control, variable frequency and related component parameters, the PWM technique has disadvantages such as low switching frequency and high switching losses. The ease of application of the PWM technique is one of its greatest advantages.

To achieve high power density, losses on the switching elements used in DC-DC converters must be reduced. Phase shifting is frequently used to reduce losses. Phase shifting is achieved by shifting the phases of the signals generated by a conventional DC-DC converter. The phase shifting technique applied to the full-bridge DC-DC converter ensures smooth turn-on of the full-bridge switches. In this study, the operation of the dual output phase shifting full bridge DC-DC converter will be explained and simulation studies will be examined.

Key Words: Zero Voltage Switching, Full Bridge DC-DC Converter, Soft Switching

MEMLÜKLER DÖNEMİ HADİS USULÜ ÇALIŞMALARINA GENEL BİR BAKIŞ

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Özet

Memlûklerin hüküm sürdüğü milâdî 13-15. asırlar arası İslâmî ilimlerin her alanında olduğu gibi hadis ilmi açısından da çok verimli bir zaman dilimi olmuştur. Bu dönemde hadis ilminin gelişiminde birçok etken söz konusudur. Moğol saldırıları nedeniyle İslâm coğrafyası içerisinde en güvenli bölge olması ve bu nedenle âlimler için toplanma merkezi teşkil etmesi yanında memlûk sulatanlarının ilme ve âlime olan saygı ve destekleri bu etkenler arasında sayılabilir. Hadis ilminin Memlûkler dönemindeki gelişiminde bir diğer önemli etken de aralarında Zeynüddin el-İrâkî (ö. 806/1404), Bedreddin ez-Zerkeşî (ö. 794/1392), İbn Hacer el-Askalânî (ö. 852/1449), Sehâvî (ö. 902/1497) ve Süyûtî (ö. 911/1505) gibi hadis alanında otorite olarak kabul edilen isimlerin telif ettikleri ve hadis ilmine dair tartışmaları ile kendi görüşlerini açıkladıkları hadis usûlü eserleridir. Bugün hadis usulü eserlerinde açıklanmakta olan konular, hep bu dönemin geride isimleri zikredilen ve alanında uzman isimler arasında meydana gelen tartışmaların ardından son halini almıştır. İşte bu tebliğde Memlûkler döneminde telif edilen önemli hadis usulü eserleri genel özellikleri açısından ele alınacak ve dönemin hadis ilmi açısından analizi yapılacaktır.

Anahtar Kelimeler: Hadis, Hadis Usulü, Literatür, Memlûk, İbnü's-Salâh

A GENERAL OVERVIEW OF HADITH METHODOLOGY STUDIES DURING THE MAMLUK PERIOD

Abstract

The period of Mamluk rule (13th–15th centuries CE) was a highly fertile era for Islamic sciences, particularly the science of Hadith. Several factors contributed to the development of Hadith studies during this time. These include the Mamluk territories' status as the most secure region within the Islamic world due to the Mongol invasions, making them a central gathering place for scholars, alongside the respect and support Mamluk sultans offered to knowledge and scholars. Another crucial factor in the advancement of Hadith during the Mamluk period was the composition of Hadith Methodology (Usul al-Hadith) works by authoritative figures such as Zayneddin al-İrâqî (d. 806/1404), Badraddin al-Zarkashî (d. 794/1392), Ibn Hajar al-Asqalânî (d. 852/1449), Sakhāwî (d. 902/1497), and Suyūṭī (d. 911/1505). These seminal works documented scholarly discussions and presented their authors' views on the principles of Hadith. The topics currently explained in contemporary Usul al-Hadith treatises were finalized following the debates that took place among these specialized scholars of the Mamluk era. Consequently, this paper will examine the key Hadith Methodology works composed during the Mamluk period in terms of their general characteristics and provide an analysis of the period's contribution to Hadith science.

Keywords: Hadith, Hadith Methodology, Literature, Mamluk, Ibn al-Salah

STRENGTHENING WOMEN’S ENTREPRENEURSHIP FOR SUSTAINABLE DEVELOPMENT IN BIDA LOCAL GOVERNMENT AREA OF NIGER STATE.

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ABSTRACT

Women entrepreneurship is widely recognised as a key driver of economic growth, social development, and community well-being in Bida Local Government Area (LGAs) of Niger State. This study examines the role of women’s entrepreneurial activities in promoting sustainable development by assessing how women entrepreneurial initiative influence sustainable development. A quantitative research design was adopted, with data collected through adapted structure questionnaire from 343 women entrepreneurs Bida Local Government Areas. The data collected where analysed using multiple regression analysis to determine the relationship between women’s entrepreneurial activities and sustainable development indicators. The findings reveal that woman entrepreneurs face barriers such as inadequate finance, lack of training and poor infrastructural facilities. The study recommended that strategies such as expand access to financial facilities, providing entrepreneurship skill and training and improved infrastructure and technological use to strengthen women’s entrepreneurship as pathway to sustainable development.

Key wards: Sustainable Development, Women, Entrepreneurship.

EFFECTS OF PLANT SELECTION IN EDIBLE LANDSCAPES ON HEALTHY NUTRITION AND SUSTAINABILITY

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ABSTRACT

Increasing urbanization, environmental sustainability issues, and concerns about food security have emphasized the importance of interdisciplinary approaches that integrate nutritional science and landscape planning. In this context, edible landscapes offer a new perspective that combines food production with aesthetic and ecological values, contributing to both environmental and public health. This review evaluates the effects of plant selection in edible landscapes on nutritional quality, sustainability, and community health.

Studies indicate that the preference for local and seasonal species reduces carbon footprint while preventing the loss of freshness and nutrients. Leafy vegetables, small fruits, and aromatic herbs with high nutrient density enhance the micronutrient content of diets and support healthy eating patterns. Moreover, school and community gardening initiatives have been shown to increase fruit and vegetable consumption, improve food awareness, and promote higher levels of physical activity among participants.

In conclusion, edible landscapes represent not only an aesthetic or production-oriented practice but also a planning approach that supports sustainable, healthy, and community-based lifestyles. Therefore, landscape projects should incorporate the expertise of nutrition professionals, develop guides for selecting local and nutrient-rich species, and expand community-based educational programs to strengthen the environmental and public health potential of edible landscape practices.

Keywords: Edible landscapes; Sustainable nutrition; Plant nutrients; Community gardens

KÜRESELLEŞMENİN MİLLİ VE MANEVİ DEĞERLERE ETKİSİ THE IMPACT OF GLOBALIZATION ON NATIONAL AND MORAL VALUES

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Özet

Bu çalışma, küreselleşme olgusunun milli ve manevi değerlere olan etkilerini kapsamlı ve çok boyutlu bir perspektiften analiz etmektedir. Küreselleşme, ulus devletlerin geleneksel sınırlarını aşarak ekonomik, kültürel, sosyal ve bilgi alanlarında yoğun bir etkileşim yaratmakta ve bu etkileşim toplumların kimlik algısını, yerleşik değer sistemlerini ve uzun yıllar varlığını korumuş kültürel-sosyal yapılarını köklü biçimde dönüştürmektedir. Küreselleşme süreci, kültürlerarası iletişimi güçlendirmesi, farklı toplumlar arasında karşılıklı anlayış sağlaması ve yerel kültürlerin, geleneklerin ve kültürel mirasın uluslararası görünürlüğünü artırması bakımından önemli fırsatlar sunmaktadır. Aynı zamanda toplumların teknolojik gelişmelere, eğitim yeniliklerine ve modern yaşam biçimlerine uyum sağlamasına katkıda bulunarak milli kimliğin çağdaş koşullara göre zenginleşmesine de imkân tanımaktadır.

Bununla birlikte küreselleşme, özellikle kültürel çeşitlilik açısından zengin ve gelişmekte olan toplumlar için bir dizi önemli risk de barındırmaktadır. En dikkat çekici tehditlerden biri, küresel popüler kültürün — kitle iletişim araçları, eğlence endüstrisi ve dijital platformlar aracılığıyla — genç nesiller üzerinde artan etkisidir. Bu etki, ana dil kullanımında azalmaya, geleneksel norm ve manevi değerlerin aşınmasına, aile yapısındaki değişimlere ve toplumsal hafızaya kök salmış kültürel unsurların ticarileşmesine yol açabilmektedir. Küresel ölçekte standartlaşmış kültürel ürünlerin yaygınlaşması, özgün kültürel kimliğin geri plana itilmesine, kültürel bağımlılığın artmasına ve toplumların kendine özgü değerlerinin zamanla zayıflamasına neden olabilmektedir.

Bu bağlamda, milli ve manevi değerlerin küreselleşme çağında korunması için bilinçli, planlı ve uzun vadeli stratejiler geliştirilmesi zorunludur. Çalışma, milli kültürü merkeze alan içeriklerin eğitim sistemine entegre edilmesini, modern pedagojik yaklaşımlarla güçlendirilmiş bir eğitim reformunun hayata geçirilmesini ve genç nesillerde kültürel bilincin artırılmasını gerekli görmektedir. Bunun yanı sıra milli kültürü destekleyen medya ve dijital platformların güçlendirilmesi, ana dilin kamusal ve özel alanlarda etkin biçimde kullanılmasını teşvik eden dil politikalarının geliştirilmesi ve devlet kurumları, eğitim kuruluşları ve sivil toplum örgütleri arasında kurumsal iş birliğinin sağlanması önemli tedbirler arasında değerlendirilmektedir. Araştırma bulguları, küreselleşme ile milli değerler arasında dengeli bir ilişkinin kurulmasının mümkün olduğunu ve bu dengenin hem toplumsal modernleşmeyi hem de kültürel sürekliliği güvence altına alarak milli-manevi değerlerin gelecek nesillere aktarılmasına katkı sağlayacağını göstermektedir.

Anahtar kelimeler: küreselleşme, milli-manevi değerler, kültürel dönüşüm, dil politikası, modernleşme, eğitim ve kültür.

Abstract

This study provides a comprehensive and multidimensional analysis of how the phenomenon of globalization influences national and moral values. Globalization, by transcending the traditional boundaries of nation-states, generates intense interaction in

economic, cultural, social, and informational domains. Such interaction reshapes societies' perceptions of identity, transforms established value systems, and alters long-standing cultural and social structures. The process offers significant positive outcomes, such as fostering intercultural communication, encouraging cross-cultural understanding, and increasing the global visibility of local traditions, heritage, and cultural expressions. By enabling societies to engage with diverse worldviews and adopt technological and educational innovations, globalization can also contribute to the cultural enrichment and modernization of national identities.

However, alongside these benefits, globalization brings a number of substantial risks that particularly affect culturally diverse and developing societies. One of the most notable concerns is the potential weakening of national identity, as global popular culture — disseminated through mass media, entertainment industries, and digital platforms — exerts a strong influence on younger generations. This influence can lead to a decline in the use of the native language, erosion of traditional norms and moral values, shifts in family structures, and the commodification of cultural elements that were once embedded in collective memory and social practices. The rapid spread of homogenized cultural products often results in reduced appreciation for national heritage, increased cultural dependency, and a gradual loss of authentic cultural distinctiveness.

Within this context, the protection and preservation of national and moral values require deliberate, structured, and long-term strategies. The study emphasizes that modernizing the national education system, incorporating culturally grounded curricula, and integrating contemporary pedagogical approaches are essential steps. Strengthening media and digital platforms that promote national cultural content, developing sustainable language policies that encourage the active use of the mother tongue in public and private spheres, and fostering institutional cooperation between state bodies, educational institutions, and civil society organizations are identified as crucial measures. The findings underscore that establishing a balanced relationship between globalization and national identity is not only possible but also necessary. Such a balance can support a society's modernization efforts while simultaneously ensuring cultural continuity, social coherence, and the preservation of national moral values for future generations.

Keywords: globalization, national and moral values, cultural transformation, language policy, modernization, education and culture.

**ASKERİ ARAÇLARDA İLAVE ALTERNATÖR SİSTEMLERİNİN TASARIMI,
MODELLENMESİ, TERS POLARİTE KORUMA YAKLAŞIMLARI VE
PERFORMANS ANALİZİ**

DESIGN, MODELING, REVERSE POLARITY PROTECTION APPROACHES, AND
PERFORMANCE ANALYSIS OF AUXILIARY ALTERNATOR SYSTEMS IN
MILITARY VEHICLES

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ÖZET

Modern askeri araç platformlarında görev kritik alt sistemlerin kesintisiz çalışması, güç üretim ve dağıtım mimarisinin yüksek güvenilirlikte tasarlanmasını gerektirir. Radar, hedefleme, haberleşme, klima, sensör dizileri ve elektronik harp modülleri gibi yüksek ve değişken güç talebine sahip bileşenler; tek alternatörlü yapılarda voltaj çökmesi, harmonik bozulma, termal zorlanma ve yük geçişlerinde kararsızlık gibi sorunlara yol açmaktadır. Bu nedenle çoklu alternatör mimarileri, güç sürekliliğini ve operasyonel güvenilirliği artırmak için önemli bir gereklilik hâline gelmiştir.

Bu çalışma, askeri araçlara entegre edilen yardımcı alternatör sistemlerinin elektriksel tasarımını, kontrol algoritmalarını, mekanik ve termal kısıtlarını ve saha bakım süreçlerinde kritik olan ters polarite koruma yöntemlerini bütüncül bir şekilde ele almaktadır. Tasarım kapsamında alternatör karakteristikleri, regülatör dinamikleri, kablo-bara kayıpları, akü davranışı ve sistem senkronizasyon süreçleri değerlendirilmiştir.

PLECS ve MATLAB/Simulink tabanlı modeller ile voltaj kararlılığı, harmonik içerik, dinamik yük paylaşımı, termal davranış ve ters polarite durumlarında akım dağılımları incelenmiştir. Ayrıca, hızlı bakım ve akü değişimlerinde sık karşılaşılan ters bağlantı hatalarına yönelik diyot, MOSFET ve hibrit tabanlı koruma yöntemleri performans açısından karşılaştırılmıştır.

Sonuçlar, ikinci alternatörün eklenmesinin sistem kararlılığını artırdığını, harmonik bozulmayı azalttığını ve yük paylaşımını daha verimli hâle getirdiğini göstermektedir. Geliştirilen ters polarite koruma yapılarının ise kritik bileşenleri güvenli şekilde koruduğu doğrulanmıştır. Bu yönleriyle çalışma, modern askeri araçlarda güç sürekliliğini artıran, uygulanabilir ve dayanıklı bir tasarım yaklaşımı sunmaktadır.

Anahtar Kelimeler: Yardımcı Alternatör, Güç Sürekliliği, Voltaj Kararlılığı, Dinamik Yük Paylaşımı, Ters Polarite Koruma

ABSTRACT

Modern military vehicle platforms require highly reliable power generation and distribution architectures to ensure uninterrupted operation of mission-critical subsystems. High and rapidly varying power-demanding components—such as radar units, targeting systems, communication modules, HVAC units, sensor arrays, and electronic warfare equipment—can cause voltage collapse, harmonic distortion, thermal stress, and instability during load transitions when operating on a single-alternator architecture. Therefore, multi-alternator configurations have become an essential requirement to enhance power continuity and operational reliability.

This study holistically examines the electrical design, control algorithms, mechanical and thermal constraints, and reverse-polarity protection methods that are critical in field

maintenance processes for auxiliary alternator systems integrated into military vehicles. Within the scope of the design, alternator characteristics, regulator dynamics, cable-busbar losses, battery behavior, and system synchronization processes are evaluated.

Voltage stability, harmonic content, dynamic load sharing, thermal behavior, and current distributions under reverse-polarity conditions are analyzed through PLECS and MATLAB/Simulink-based models. Furthermore, diode-based, MOSFET-based, and hybrid reverse-polarity protection topologies commonly used during rapid maintenance or battery replacement are compared in terms of performance.

The results indicate that integrating a second alternator improves system stability, reduces harmonic distortion, and enables more efficient load sharing. The developed reverse-polarity protection structures were also verified to safely protect critical components. With these contributions, the study presents a practical and robust design approach that enhances power continuity in modern military vehicle platforms.

Keywords: Auxiliary Alternator, Power Continuity, Voltage Stability, Dynamic Load Sharing, Reverse Polarity Protection

FROM SEMASHKO TO BISMARCK: CHALLENGES FOR IT'S IMPLEMENTATION IN ALBANIA

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Abstract

The way countries organize their healthcare systems reflects not only their economic conditions but also their historical, cultural, and political values. Two of the most influential models in the contemporary world are the Bismarck model and the Beveridge model, both adopted in various countries with their own adaptations. The names Beveridge or Bismarck can be useful in conveying important political meaning or reflecting a cultural context in which the healthcare system is considered a ‘way of life. Centralized model was introduced in Soviet Russia after the 1917 October Revolution, named after Nikolai Semashko, the first People’s Commissar for Health. This system was state-funded; single-payer system financed from the national budget, universal and free access to healthcare for all citizens and centralized administration under the Ministry of Health. Semashko model expanded across the USSR after 1918 and later exported to Eastern Europe after WWII, and Albania too. Albania’s healthcare system has undergone significant transformations, transitioning from the Soviet-inspired model during the communist era to the Bismarck model introduced in early ‘90s. While the legal framework for health insurance was established in 1994, full implementation of the Bismarck principles remains incomplete.

Methodology used in this article examines actual status and historical evolution of Albania’s healthcare financing, comparing with German Bismarck model, in terms of money collection, allocation of funds, and purchasing of services. Paper explores the challenges and potential benefits of adopting a fully competitive insurance-based system.

Findings suggest that comprehensive implementation would reduce out-of-pocket expenditures, improve population health outcomes, and enhance access to healthcare services and increase citizens’ willingness to enrol in health insurance schemes.

Keywords: Health insurance; healthcare system; Bismarck; out-of-pocket expenditure; resource allocation; public health insurance; health policy, Albania

DENEYSEL EPİLEPSİ MODELİNDE METFORMİNİN HORMETİK ETKİSİ HORMETIC EFFECT OF METFORMIN ON THE EXPERIMENTAL EPILEPSY MODEL

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ÖZET

Epilepsi, tekrarlayan nöbetlerle karakterize, bulaşıcı olmayan ve her yaştan insanı etkileyebilen nörolojik bir hastalıktır. Bu çalışmanın amacı, sıçanlarda penisilin ile oluşturulan epileptiform aktivite üzerine intraperitoneal metformin enjeksiyonunun etkisini araştırmaktır. Bu amaçla çalışmada 56 adet erkek Wistar albino sıçan kullanıldı. Sıçanlar üratan ile anestezi altına alınarak kafa derileri tıraş edildi ve kafa derisi insize edildi. Gerekli enjeksiyonları yapmak için kafatasının sol tarafına uygulama delikleri açıldı. Intrakortikal penisilin enjeksiyonundan 30 dakika sonra sıçanlara metformin (50, 100, 200, 400 mg/kg i.p.) dozları uygulandı. Metforminin 100 mg/kg ve 200 mg/kg dozların epileptiform aktivite üzerine antikonvülsan etki gösterdiği, 400 mg/kg dozunda ise sıçanlar üzerinde kararsız ve toksik etki gösterdiği belirlendi.

Anahtar Kelimeler: Epilepsi, Penisilin, Metformin, ECoG

Bu bildiri, Yozgat Bozok Üniversitesi Fen Bilimleri Enstitüsü'nde, Gizem AKÇİL'in Doç. Dr. Sedat PER danışmanlığında yürüttüğü "Everolimus ve Metformin'in Penisilinle Uyarılan Epileptiform Aktiviteye Etkisi" başlıklı yüksek lisans tezinin bir kısmından üretilmiştir.

ABSTRACT

Epilepsy is a neurological disease characterized by recurrent seizures, which is non-contagious and affects all ages. The aim of the study was to investigate the effect of intraperitoneal injection of metformin on penicillin-induced epileptiform activity in rats. For this purpose, 56 male Wistar albino rats were used in the study. The rats were anesthetized with urethane and their scalp hair was shaved, and scalp was incised. Application holes were opened on the left side of the skull to make the necessary injections. Metformin (50, 100, 200, 400 mg/kg i.p.) doses were applied to the rats 30 minutes after the intracortical penicillin injection. It was determined that metformin at a dose of 100 mg/kg and 200 mg/kg had an anticonvulsant effect on epileptiform activity, while metformin at a dose of 400 mg/kg had an unstable and toxic effect on the rats.

Keywords: Epilepsy, Penicillin, Metformin, ECoG

TOPLUMSAL CİNSİYET PERSPEKTİFİNDEN TÜRKİYE'DE DİJİTAL EŞİTSİZLİK: EĞİTİM, GELİR VE İSTİHDAMIN ETKİSİ

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ÖZET

Bu çalışmada, dijitalleşme süreçlerinde toplumsal cinsiyet temelli eşitsizliklerin nasıl şekillendiğini ortaya çıkarmak amaçlanmıştır. Bu amaç doğrultusunda Türkiye’de 2014-2024 yılları arasındaki dijital eşitsizlik, toplumsal cinsiyet perspektifinden ele alınarak, eğitim, yaş, işgücü durumu ve bölgesel farklılıklar bağlamında incelenmiştir. Betimsel istatistik yönteminin kullanıldığı araştırmada, Türkiye İstatistik Kurumu’nun (TÜİK) Hanehalkı Bilişim Teknolojileri Kullanım Araştırması’ndan elde edilen yıllık veriler analiz edilmiştir. Veri analizi sürecinde Python programlama dili ile pandas, matplotlib ve seaborn gibi kütüphaneler kullanılarak veriler temizlenmiş, analiz edilmiş ve görselleştirilmiştir. Elde edilen bulgular, internet kullanım oranlarının tüm demografik gruplarda yıllar içinde arttığını, ancak cinsiyet ve bölgesel temelli dijital eşitsizliklerin devam ettiğini ortaya koymuştur. Marmara Bölgesi ve özellikle İstanbul, dijitalleşme açısından en yüksek oranlara sahipken, Doğu ve Güneydoğu Anadolu Bölgelerinde kadınların internet kullanım oranlarının erkeklere göre düşük olduğu belirlenmiştir. Eğitim seviyesi yükseldikçe dijital erişim oranlarının arttığı gözlemlenmiş, başta üniversite mezunları olmak üzere internet kullanımının neredeyse evrensel bir seviyeye ulaştığı tespit edilmiştir. Bununla birlikte, düşük eğitim düzeyine sahip kadınların dijital erişim oranlarının hala oldukça sınırlı olduğu görülmüştür. Araştırma, dijital eşitsizliklerin yalnızca teknolojik erişimle değil, aynı zamanda toplumsal cinsiyet normları, eğitim düzeyi ve ekonomik koşullarla doğrudan ilişkili olduğunu göstermiştir. Kadınların dijitalleşme süreçlerine tam katılımını sağlamak için eğitim, dijital okuryazarlık ve kapsayıcı politikaların bir arada ele alınması gerektiği sonucuna ulaşılmıştır. Bu doğrultuda, toplumsal cinsiyet eşitliğini temel alan dijitalleşme politikalarının uygulanması, dijital uçurumun azaltılmasında kritik bir rol oynayabilir.

Anahtar Kelimeler: Toplumsal Cinsiyet, Dijital Eşitsizlik, Eğitim, Gelir Düzeyi, İstihdam

* Bu çalışma, yazarın İstatistik ve Veri Bilimi alanındaki yüksek lisans bitirme projesinden türetilmiştir.

DIGITAL INEQUALITY IN TURKEY FROM A GENDER PERSPECTIVE: THE IMPACT OF EDUCATION, INCOME AND EMPLOYMENT

ABSTRACT

This study aims to reveal how gender-based inequalities are shaped in digitalization processes. To this end, digital inequality in Turkey between 2014 and 2024 was examined from a gender perspective, considering education, age, employment status, and regional differences. Using descriptive statistical methods, the study analyzed annual data obtained from the Turkish Statistical Institute's (TÜİK) Household Information Technology Usage Survey. During the data analysis process, the data was cleaned, analyzed, and visualized using the Python programming language and libraries such as pandas, matplotlib, and seaborn. The findings revealed that internet usage rates have increased over the years across all demographic groups, but gender and regional-based digital inequalities persist. While the Marmara Region, and Istanbul in particular, had the highest rates of digitalization, it was determined that internet usage rates among women in the Eastern and Southeastern Anatolia Regions were lower than those among men. It has been observed that digital access rates increase as education levels rise, and it has been determined that internet usage has reached an almost universal level, particularly among university graduates. However, it has been noted that digital access rates for women with low education levels remain quite limited. The research has shown that digital inequalities are directly related not only to technological access but also to gender norms, educational level, and economic conditions. It was concluded that education, digital literacy, and inclusive policies must be addressed together to ensure women's full participation in digitalization processes. In this regard, the implementation of digitalization policies based on gender equality can play a critical role in reducing the digital divide.

Keywords: Gender, Digital Inequality, Education, Income Level, Employm

KIYI KENTLERİNDE SÜRDÜRÜLEBİLİR MEKANSAL YAKLAŞIMLAR: MERSİN ÖRNEĞİ

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ÖZET

Günümüz kentlerinde hızla artan nüfus, kentleşme baskısı ve çevresel sorunlar, yaşam kalitesini doğrudan etkileyen mekânsal sürdürülebilirlik kavramını ön plana çıkarmaktadır. “Yaşanabilir Mekanlar” teması, yalnızca fiziksel çevrenin değil, sosyal, ekolojik ve ekonomik boyutların bütüncül bir yaklaşımla ele alınmasını gerektirir. Bu çalışma, Mersin kentinin mekânsal yapısı üzerinden sürdürülebilirlik ilkelerini incelemekte; Mersin Limanı, Mersin Marina ve kentsel ölçekte öne çıkan yeşil bina örnekleri üzerinden yaşanabilir mekân kavramını değerlendirmektedir.

Araştırma, kentteki farklı ölçeklerdeki yapı ve alanların sürdürülebilirlik kriterleri doğrultusunda incelenmesiyle, mekânsal verimlilik, enerji kullanımı, yeşil alan entegrasyonu ve sosyal etkileşim alanları gibi parametreleri analiz etmektedir. Mersin’in kıyı kimliği ve iklimsel özellikleriyle şekillenen bu mekânlarda, sürdürülebilir tasarım ilkelerinin ne ölçüde uygulandığı ve kullanıcı deneyimine nasıl yansıtıldığı tartışılmaktadır.

Sonuç olarak, Mersin örneği, yaşanabilir mekânların oluşturulmasında çevresel duyarlılığın, mimari tasarımın ve kent politikalarının bütünleşik bir biçimde ele alınmasının gerekliliğini ortaya koymaktadır. Bu bağlamda çalışma, gelecekteki kentsel gelişim ve dönüşüm süreçleri için sürdürülebilirlik odaklı tasarım stratejilerine ışık tutmayı amaçlamaktadır.

Anahtar Kelimeler: Yaşanabilir Mekanlar, Sürdürülebilirlik, Mersin Limanı, Mersin Marina, Yeşil Binalar, Mekânsal Verimlilik

SUSTAINABLE SPATIAL APPROACHES IN COASTAL CITIES: THE EXAMPLE OF MERSIN

ABSTRACT

In today's cities, the rapidly increasing population, urbanization pressures, and environmental problems, which directly impact quality of life, bring the concept of spatial sustainability to the forefront. The theme of "Livable Spaces" requires a holistic approach to address not only the physical environment but also social, ecological, and economic dimensions. This study examines sustainability principles through the spatial structure of Mersin and evaluates the concept of livable space through examples of Mersin Port, Mersin Marina, and prominent green buildings at the urban scale.

The research examines structures and spaces at different scales in the city in line with sustainability criteria, analyzing parameters such as spatial efficiency, energy use, green space integration, and social interaction areas. The extent to which sustainable design principles are implemented in these spaces, shaped by Mersin's coastal identity and climatic characteristics, and how they are reflected in user experience are discussed.

Consequently, the Mersin example demonstrates the necessity of an integrated approach to environmental awareness, architectural design, and urban policies in the creation of livable

spaces. In this context, the study aims to shed light on sustainability-focused design strategies for future urban development and transformation processes.

Keywords: Livable Spaces, Sustainability, Mersin Port, Mersin Marina, Green Buildings, Spatial Efficiency

TEKNOLOJİK DÖNÜŞÜMÜN KENTSEL DONATI TASARIMINA ETKİSİ: MERSİN KIYI ŞERİDİ ÖRNEĞİ

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ÖZET

Gelişen bilgi teknolojileri, kentsel donatı elemanlarının tasarım, kullanım ve işlevsellik anlayışını dönüştürmektedir. Bu çalışma, teknolojik dönüşümün kentsel donatı tasarımına etkilerini Mersin kıyı şeridi üzerinden incelemektedir. Alan incelemeleri kapsamında, kıyı boyunca konumlanan kiosk türü teknolojik donatılar; kullanıcı etkileşimi, erişilebilirlik, estetik uyum ve kamusal deneyim açısından değerlendirilmiştir. Bulgular, teknolojik donatıların bilgiye erişimi kolaylaştırarak kamusal alanlarda etkileşimi artırdığını göstermektedir. Mersin kıyı şeridi örneği, teknolojik yeniliklerin kentsel mekân kimliğini güçlendirdiği, kullanıcı deneyimini zenginleştirdiği ve kentle insan arasındaki ilişkiyi yeniden tanımladığı bir dönüşümü ortaya koymaktadır. Bu bağlamda çalışma, gelecekteki kentsel donatı tasarımlarında teknolojinin yönlendirici bir unsur olarak ele alınmasının önemini vurgulamaktadır.

Anahtar Kelimeler: Kentsel Donatı, Teknolojik Dönüşüm, Kiosk, Mersin Kıyı Şeridi, Kamusal Alan

*Bu çalışma, Toros Üniversitesi tarafından desteklenen, “MERSİN KENT MERKEZİ KIYI DÜZENLEMESİNİN EVRENSEL TASARIM İLKELERİ BAĞLAMINDA ANALİZİ VE İYİLEŞTİRME ÖNERİLERİ” başlıklı bilimsel araştırma projesinin bulgularından yararlanılarak hazırlanmıştır. (Yürütücü Doç. Dr. Sevinç ALKAN KORKMAZ).

THE IMPACT OF TECHNOLOGICAL TRANSFORMATION ON URBAN FURNITURE DESIGN: THE CASE OF MERSIN COASTAL STRIP

ABSTRACT

Advancements in information technologies are transforming the design, use, and functionality of urban furniture. This study examines the effects of technological transformation on urban furniture design through the example of the Mersin coastal strip. Field observations focus on kiosk-type technological installations positioned along the coastline, evaluated in terms of user interaction, accessibility, aesthetic integration, and public experience. Findings indicate that technological installations enhance interaction in public spaces by facilitating access to information.

The Mersin coastal strip exemplifies how technological innovation strengthens urban identity, enriches user experience, and redefines the relationship between people and the city. Accordingly, this study emphasizes the importance of considering technology as a guiding element in future urban furniture design processes.

Keywords: Urban Furniture, Technological Transformation, Kiosk, Mersin Coastal Strip, Public Space

SUBSTITUTION BIAS ACROSS INCOME GROUPS: EVIDENCE FROM ARGENTINA'S CONSUMER PRICE INDEX¹

GELİR GRUPLARI ARASINDA İKAME YANLILIĞI: ARJANTİN TÜKETİCİ FİYAT ENDEKSİNDEN KANITLAR

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ABSTRACT

The National Institute of Statistics and Census of Argentina and many other statistical institutions use the Laspeyres index to estimate the Consumer Price Index; however, it measures the proportional change in the cost of buying a fixed consumption basket as prices alter. Hence, this kind of price index overlooks the fact that consumers can mitigate the impact of price rises on their cost of living by adjusting their spending patterns. Consumers substitute away from goods that have become more expensive towards those that have become relatively cheaper. The aim of this paper is to calculate the substitution bias in the Laspeyres index by comparing it with the cost-of-living index estimated by the Törnqvist index.

To calculate the Laspeyres and Törnqvist indices, this analysis utilises the Argentinian Household Expenditure Surveys for 2004/05, 2012/12, and 2017/18, prepared by the National Institute of Statistics and Census of Argentina (INDEC). The Argentinian household expenditure survey does not record any price data; therefore, quality-adjusted unit values for each product are constructed. In the following step, the national averages and income-specific price indices are calculated by using plutocratic weights.

The findings show that bias was low and relatively homogeneous during the 2004–2012 period, but increased significantly after 2012, with the acceleration of inflation. Long-term substitution bias reached 0.36–0.48 index points in some income groups. Interestingly, the highest bias is observed in middle-income groups and the lowest in upper-income groups in the post-2012 period; this may be related to the consumption elasticities and budget share dynamics of different income groups. The results suggest that the official price index in Argentina can overstate the cost of living, particularly in high-inflation regimes, and lead to measurement errors in price indexing, real wage negotiations, and fiscal policy design.

Keywords: Argentina, Substitution Bias, Laspeyres Index, Törnqvist Index, Price Indexing Policy

ÖZET

Arjantin Ulusal İstatistik ve Nüfus Sayımı Enstitüsü ve diğer birçok istatistik kurumu, Tüketici Fiyat Endeksi'ni tahmin etmek için Laspeyres endeksini kullanır; ancak bu endeks, fiyatlar değiştikçe sabit bir tüketim sepeti satın alma maliyetindeki orantılı değişimi ölçer. Dolayısıyla,

¹ This paper is based on my doctoral thesis, which was conducted at King's College London. I am heavily indebted to my supervisor, Paul Segal, for his guidance during my PhD journey. I am also grateful to Ian Crawford and Brian Nolan for their helpful comments.

bu tür bir fiyat endeksi, tüketicilerin harcama kalıplarını ayarlayarak fiyat artışlarının yaşam maliyetleri üzerindeki etkisini azaltabilecekleri gerçeğini göz ardı eder. Tüketiciler, daha pahalı hale gelen mallardan uzaklaşarak nispeten daha ucuz olanlara yönelirler. Bu çalışmanın amacı, Laspeyres endeksindeki ikame eğilimini, Törnqvist endeksi tarafından tahmin edilen yaşam maliyeti endeksiyle karşılaştırarak hesaplamaktır.

Laspeyres ve Törnqvist endekslerini hesaplamak için bu analiz, Arjantin Ulusal İstatistik ve Nüfus Sayımı Enstitüsü (INDEC) tarafından hazırlanan 2004/05, 2012/12 ve 2017/18 Arjantin Hanehalkı Harcama Anketleri'nden yararlanmaktadır. Arjantin hanehalkı harcama anketi herhangi bir fiyat verisi kaydetmemektedir; bu nedenle, her ürün için kaliteye göre ayarlanmış birim değerleri oluşturulmuştur. Sonraki adımda, ulusal ortalamalar ve gelire özgü fiyat endeksleri plütokratik ağırlıklar kullanılarak hesaplanmıştır.

Bulgular, sapmanın 2004-2012 döneminde düşük ve nispeten homojen olduğunu, ancak enflasyonun hızlanmasıyla 2012'den sonra önemli ölçüde arttığını göstermektedir. Uzun vadeli ikame sapması bazı gelir gruplarında 0,36-0,48 endeks puanına ulaşmıştır. İlginç bir şekilde, 2012 sonrası dönemde en yüksek sapma orta gelir gruplarında, en düşük sapma ise üst gelir gruplarında gözlenmiştir; bu durum, farklı gelir gruplarının tüketim esneklikleri ve bütçe payı dinamikleriyle ilişkili olabilir. Sonuçlar, Arjantin'deki resmi fiyat endeksinin, özellikle yüksek enflasyon rejimlerinde yaşam maliyetini abartabileceğini ve fiyat endekslemesinde, reel ücret müzakerelerinde ve mali politika tasarımıyla ölçüm hatalarına yol açabileceğini göstermektedir.

Anahtar Kelimeler: Arjantin, İkame Yanlılığı, Laspeyres Endeksi, Törnqvist Endeksi, Fiyat Endeksleme Politikası

ÖĞRETMEN ADAYLARININ “ÖĞRETMENİN TOPLUMDAKİ YERİ”NE İLİŞKİN METOFORİK ALGILARI METAPHORICAL PERCEPTIONS OF PROSPECTIVE TEACHERS REGARDİNG THE "PLACE OF TEACHERS İN SOCIETY"

Gülşen ALTINTAŞ

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Özet

Bu araştırmanın amacı; sınıf öğretmenliği bölümü öğretmen adaylarının “Öğretmenin Toplumdaki Yeri” ne ilişkin algılarını metaforlar aracılığı ile ortaya çıkarmaktır. Bu amaç doğrultusunda öğretmen adaylarından “ Öğretmenlerin Toplumdaki Yeri” ne ilişkin metafor üretmeleri istenmiştir. Nitel olarak desenlenen araştırmanın katılımcılarını, 2023-2024 öğretim yılında Balıkesir ili Balıkesir Üniversitesi Necati Bey Eğitim Fakültesi ve Manisa Celal Bayar Üniversitesi Demirci Eğitim Fakültesinde okuyan sınıf öğretmenliğinde çeşitli sınıflarda okuyan öğretmen adayları oluşturmaktadır. Araştırma verileri katılımcıların “öğretmenin toplumdaki yeri benzer; çünkü” cümlesini tamamlayarak öğretmenin toplumdaki yeri ile ilgili düşüncelerini yansıtan metaforlarla elde edilmiştir. Araştırmada, toplanan veriler içerik analizi yöntemi ile analiz edilmiştir. Araştırma sonucunda, öğretmen adayları tarafından “öğretmenin toplumdaki yeri” kavramına yönelik toplam 189 metafor geliştirilmiştir. Öğretmen adaylarının öğretmenlik mesleğinin toplumdaki statüsüne ilişkin algılarını ortaya koyan zengin ve çeşitli bir metafor yelpazesi oluşturdukları görülmüştür. Manisa Celal Bayar Üniversitesi ve Balıkesir Necatibey Eğitim Fakültesi'nden farklı sınıf düzeylerindeki öğretmen adaylarından toplanan verilerin analizi sonucunda, metaforlar dört ana tema altında toplanmıştır. Bunlar, yol gösterici ve aydınlatıcı, şekillendirici ve temel oluşturucu, ailevi ve koruyucu ile olumsuz ve sorunlu statü olarak belirlenmiştir. Öğretmen adayları öğretmenlik mesleğinin en temel ve idealize edilmiş misyonunun, zihinlerinde halen çok canlı olduğunu görülmüştür. Yine öğretmen adayları, öğretmeni besleyici ve hayat verici bir kaynak olarak konumlandırarak, mesleğin toplum için vazgeçilmez olduğunu, mesleği sıklıkla ailevi bağlarla ilişkilendirmelerinin yanında öğretmenlik mesleğinin toplumdaki statüsüne ilişkin kaygı, hayal kırıklığı ve eleştiri, mesleğin hak ettiği değeri görmediği inancını açıkça ortaya koyan metaforlar izlenmiştir. Ayrıca kadın öğretmen adayları ailevi ve koruyucu metaforlara daha yatkınken, erkek öğretmen adayları şekillendirici ve olumsuz metaforları daha sık kullandıkları görülmüştür. Balıkesir Necati Bey eğitim fakültesi öğretmen adaylarının oluşturdukları mesleğin teknik ve sistemsal boyutuna daha fazla vurgu yaparlarken, Manisa Celal Bayar Üniversitesi eğitim fakültesi öğretmen adayları duygusal bağ vurgusunun daha güçlü olduğu görülmektedir. Her iki üniversite arasında metafor tercihlerinde belirgin bir kültürel fark olduğu söylenebilir.

Anahtar Kelimeler: Statü, Toplum, Metafor, Öğretmen, Öğretmen Adayı

METAPHORICAL PERCEPTIONS OF PROSPECTIVE TEACHERS REGARDING THE "PLACE OF TEACHERS IN SOCIETY"

Abstract

The purpose of this study is to reveal the perceptions of teacher candidate classroom teachers regarding the “Role of the Teacher in Society” through metaphors. For this purpose, the teacher candidate teachers were asked to produce metaphors related to the “Role of Teachers in Society.” The participants of this qualitatively designed study consisted of teacher candidate classroom teachers studying at various grade levels in the Departments of Classroom Teaching at Necati Bey Faculty of Education, Balıkesir University, and Demirci Faculty of Education, Manisa Celal Bayar University, during the 2023–2024 academic year. The research data were obtained through metaphors produced by the participants by completing the sentence: “The role of the teacher in society is like because” The collected data were analyzed using content analysis. As a result of the study, a total of 189 metaphors were generated by the teacher candidate teachers regarding the concept of “the role of the teacher in society.” It was observed that the participants produced a rich and diverse range of metaphors that reflected their perceptions of the social status of the teaching profession. The analysis of the data collected from teacher candidate teachers across different grade levels at Manisa Celal Bayar University and Balıkesir University revealed that the metaphors clustered under four main themes: guiding and enlightening, shaping and foundational, familial and protective, and negative and problematic status. The findings suggest that the most fundamental and idealized mission of the teaching profession remains vivid in the minds of teacher candidate teachers. Moreover, by positioning teachers as a nurturing and life-giving source, the participants emphasized the indispensable nature of the profession for society. Alongside metaphors frequently associated with familial ties, metaphors revealing concerns, disappointment, and criticism about the social status of the teaching profession—reflecting the belief that the profession does not receive the appreciation it deserves—were also evident. Additionally, female teacher candidate teachers tended to use more familial and protective metaphors, whereas male teacher candidate teachers more frequently employed shaping and negative metaphors. It was also observed that teacher candidate teachers from Necati Bey Faculty of Education, Balıkesir University placed greater emphasis on the technical and systemic aspects of the profession, while those from Manisa Celal Bayar University highlighted emotional bonds more strongly. These findings indicate a notable cultural difference between the two universities in terms of metaphor preferences.

Keywords: Status, Society, Metaphor, Teacher, Teacher Candidate

**TÜRKİYE’DE EKONOMİK BÜYÜME, SERMAYE BİRİKİMİ, AR-GE
HARCAMALARI VE BEŞERİ SERMAYE ARASINDAKİ İLİŞKİNİN AMPİRİK BİR
İNCELENMESİ**

AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN ECONOMIC
GROWTH, CAPITAL ACCUMULATION, R&D EXPENDITURES AND HUMAN
CAPITAL IN TÜRKİYE

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ÖZET

Ekonomik büyümenin sağlanması, alan araştırmalarının önemli bir konusunu oluşturmuş ve iktisat alanında çalışan bilim insanları tarafından dönemler boyunca ekonomik büyüme üzerinde belirleyici olan değişkenler arasındaki neden-sonuç ilişkileri incelenmiştir. Ülkelerin büyümelerini sürdürmeleri ve özellikle gelişmekte olan ülkelerin potansiyellerini ortaya çıkarmaları amacıyla yapılan bu çalışmalar giderek önem kazanmış; bu doğrultuda çeşitli büyüme teorileri ortaya atılmıştır. Özellikle Neoklasik Büyüme Teorisi ile İçsel Büyüme Teorisi ön plana çıkarken, bu teoriler teknoloji, beşerî sermaye ve Ar-Ge harcamaları gibi kavramları ekonomi literatürüne kazandırarak ülkelerin büyüme dinamiklerini daha sağlam temellere oturtmayı hedeflemiştir. Bu çerçevede çalışmanın amacı, Türkiye’de ekonomik büyüme ile sermaye birikimi, Ar-Ge harcamaları ve beşerî sermaye arasındaki ilişkiyi incelemektir. 1996-2022 dönemine ait yıllık verilerin kullanıldığı modelde ekonomik büyüme bağımlı değişken olarak ele alınmış; sermaye birikimi, Ar-Ge harcamaları ve beşerî sermaye ise bağımsız değişkenler olarak analiz edilmiştir. Genişletilmiş VAR modeli kapsamında Toda-Yamamoto nedensellik testi kullanılarak yapılan analizler sonucunda sermaye birikimi ile ekonomik büyüme arasında çift yönlü, Ar-Ge harcaması ile ekonomik büyüme arasında çift yönlü ve Ar-Ge harcaması ile sermaye birikimi arasında yine çift yönlü nedensellik ilişkisi tespit edilmiştir. Bunun yanında beşerî sermayeden ekonomik büyümeye, sermaye birikimine ve Ar-Ge harcamalarına doğru tek yönlü nedensellik ilişkisi olduğu sonucuna ulaşılmıştır. Elde edilen bulgular, beşerî sermaye düzeyinin artırılması, Ar-Ge faaliyetlerinin teşvik edilmesi ve değişkenler arasındaki entegrasyonun güçlendirilmesi gerektiğine işaret ederek politika yapımcılar için önemli çıkarımlar sunmaktadır.

Anahtar Kelimeler: Ekonomik Büyüme, Beşerî Sermaye, Ar-Ge Harcamaları, Toda-Yamamoto Nedensellik.

ABSTRACT

Achieving economic growth has become a significant topic of research, and economics scholars have examined the cause-and-effect relationships between the variables that determine economic growth over time. These studies, aimed at ensuring that countries maintain their growth and, in particular, to uncover the potential of developing countries, have increasingly gained importance; various growth theories have been proposed in this regard. Neoclassical Growth Theory and Endogenous Growth Theory, in particular, have come to the fore. These theories have introduced concepts such as technology, human capital, and R&D expenditures to the economic literature, aiming to establish a more robust foundation for

countries' growth dynamics. Within this framework, the study aims to examine the relationship between economic growth and capital accumulation, R&D expenditures, and human capital in Türkiye. In the model using annual data for the period 1996-2022, economic growth is treated as the dependent variable, while capital accumulation, R&D expenditures, and human capital are analyzed as independent variables. Analyses using the Toda–Yamamoto causality test within the extended VAR model revealed a bidirectional causality relationship between capital accumulation and economic growth, a bidirectional causality relationship between R&D expenditure and economic growth, and a bidirectional causality relationship between R&D expenditure and capital accumulation. Furthermore, a unidirectional causality relationship running from human capital to economic growth, capital accumulation, and R&D expenditure was also found. The findings offer important implications for policymakers, pointing to the need to increase human capital levels, encourage R&D activities, and strengthen the integration between variables.

Keywords: Economic Growth, Human Capital, R&D Expenditures, Toda-Yamamoto Causality.

**ELMALILI HAMDİ YAZIR'IN 'HAK DİNİ KUR'AN DİLİ' TEFSİRİ BAĞLAMINDA
KUR'AN'DA SÖZLÜ İLETİŞİM İLKELERİ**

**THE PRINCIPLES OF VERBAL COMMUNICATION IN THE QUR'AN IN THE
CONTEXT OF ELMALILI HAMDİ YAZIR'S EXEGESIS OF THE 'TRUE
RELIGION OF THE QUR'AN'**

Hatice AKBAŞ

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ÖZET

İnsan hayatının temel unsurlarından biri olan sözlü iletişim, bireysel ve toplumsal ilişkilerin sağlıklı yürütülmesinde kritik bir öneme sahiptir. İnsanın kendini ifade etme, anlam kurma ve ilişki inşa etme süreçlerinin merkezinde sözlü dil yer alır. Aile içinden toplumsal hayata, eğitimden din hizmetlerine kadar hemen her alanda sözlü dilin niteliği, birey ve toplum üzerinde doğrudan etkiye sahiptir. Kur'an-ı Kerim, insanı muhatap alan ilahî bir hitap olarak sözlü iletişime dair pek çok ilke ve ölçü sunmakta; hikmetle davet, güzel öğüt, yumuşak söz, doğru ve dosdoğru konuşma gibi kavramlarla iletişimin hem içeriğini hem de üslubunu düzenleyen bir çerçeve ortaya koymaktadır. Kur'an, sözlü iletişimde kullanılacak dilin nazık, yumuşak, anlaşılır ve kuşatıcı bir üslup üzerine bina edilmesini ister; kaba, incitici ve sert ifadelerle kurulan bir hitabın ne muhatabın gönlünde karşılık bulacağını ne de verilmek istenen mesajı etkili biçimde ulaştıracağını belirtir. Bu nedenle kime hitap edilirse edilsin, sözlü iletişim dili muhatabın kalbine nüfuz edebilecek bir incelik ve güzellik taşımalıdır.

Bu tebliğin amacı, Elmalılı Hamdi Yazır'ın Hak Dini Kur'an Dili adlı tefsirinden hareketle Kur'an'da sözlü iletişimle ilgili ilkeleri tespit etmek ve bu ilkeleri güncel dinî ve sosyal iletişim bağlamında yeniden düşünmektir. Çalışmanın temel hedefi, klasik bir tefsir metnini yalnızca lafız ve hüküm merkezli değil, aynı zamanda iletişim ve muhatapla ilişki ekseninde okumak; böylece ilahiyat ve sosyal bilimler arasında köprü kuran, iletişim odaklı bir bakış açısı geliştirmektir. Yöntem olarak, sözlü iletişimle doğrudan ilişkilendirilebilecek âyetler seçilerek, Elmalılı'nın bu âyetlere getirdiği yorumlar nitel içerik analiziyle değerlendirilecektir. Sonuç olarak, Elmalılı'nın tefsirinde temellendirilen Kur'an merkezli sözlü iletişim ilkelerinin, günümüz vaaz ve irşad faaliyetleri, din eğitimi, aile içi dinî iletişim ve dijital mecralardaki dinî söylem için önemli imkânlar sunduğu ortaya konulmakta; ilahiyat alanında sosyal bilimlerle irtibatlı, iletişim odaklı yeni okuma imkânlarına işaret edilmektedir.

Anahtar Kelimeler: Tefsir, Kur'ân-ı Kerim, Elmalılı Hamdi Yazır, Hak Dini Kur'an Dili, Sözlü İletişim.

ABSTRACT

Verbal communication, one of the fundamental elements of human life, holds critical importance in the healthy conduct of individual and social relations. Spoken language lies at the center of the processes through which a person expresses themselves, constructs meaning, and builds relationships. From family life to social life, from education to religious services, the quality of spoken language has a direct impact on both the individual and society. As a divine address directed to humankind, the Qur'an presents numerous principles and measures regarding verbal communication; with concepts such as inviting with wisdom, giving good advice, speaking gently, and speaking truly and uprightly, it offers a framework that regulates both the content and the style of communication. The Qur'an requires that the language used in verbal communication be built upon a gentle, soft, understandable, and inclusive style; it states that speech formed with harsh, hurtful, and coarse expressions will neither find a place in the heart of the addressee nor effectively convey the intended message. Therefore, regardless of whom one addresses, the language of verbal communication should carry a delicacy and beauty capable of penetrating the heart of the listener.

The aim of this paper is to identify the principles of verbal communication in the Qur'an based on Elmalılı Hamdi Yazır's tafsir *Hak Dini Kur'an Dili*, and to reconsider these principles within the context of contemporary religious and social communication. The main objective of the study is to read a classical tafsir text not only with a focus on wording and rulings, but also from the perspective of communication and the relationship with the addressee, thereby developing a communication-oriented perspective that builds a bridge between theology and the social sciences. Methodologically, verses directly related to verbal communication will be selected, and Elmalılı's interpretations of these verses will be evaluated through qualitative content analysis. As a result, it is demonstrated that the Qur'an-centered principles of verbal communication grounded in Elmalılı's tafsir offer significant opportunities for contemporary preaching and guidance activities, religious education, intra-family religious communication, and the religious discourse used in digital platforms; and it points to new communication-oriented reading possibilities in the field of theology that are connected with the social sciences.

Keywords: Tafsir, Qur'an, Elmalılı Hamdi Yazır, *Hak Dini Kur'an Dili*, Verbal Communication.

GELENEKSEL RİTÜELDEN KENTSEL MEKÂNA: DİYARBAKIR'DA TAZİYE KÜLTÜRÜNÜN YENİDEN BİÇİMLENİŞİ

FROM TRADITIONAL RITUAL TO URBAN SPACE:
THE RESHAPING OF CONDOLENCE (TAZİYE) CULTURE IN DIYARBAKIR

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ÖZET

Ölüm, bilimsel olarak bir sonu ifade etse de insanların dini inanışlarında ve kültürlerinde birçok farklı anlam taşımaktadır. Geçmişten günümüze bütün toplumlarda ölüm sonrası, farklı biçimlerde yürütülen törensel formların olduğu görülmektedir. Ölüm sonrası şekillenen bu törensel şemanın önemli bir kısmını “taziye” adı verilen, ölünün arkasından yakınlarının acılarını paylaşmak için yapılan ziyaretler oluşturmaktadır. Toplumsal yaşamda görülen taziye kültürü, Diyarbakır'daki kentleşme ve kentlileşme ile geleneksel yapıdan farklılaşmaya başlamıştır. Bu çalışmanın amacı da farklılaşan bu kültürün toplumdaki yerini, kent içerisindeki değişim ve gelişimini tespit etmektedir. Kentlileşme ile başlayan apartman hayatının dayattığı kurallar çerçevesinde yaşam alanlarında görülen mekânsal farklılaşmalar, eskiden beri süre gelen taziye kültürünü yaşatmakta güçlük yaratmıştır. Ölen kişinin toplum içindeki statüsüne bağlı olarak çok sayıda kişinin gelebildiği taziye törenlerinde konut tipinde görülen farklılaşmayla beraber binaların bodrum veya zemin katları, toplantı veya düğün salonları, spor salonları, kıraathaneler gibi sosyo-kültürel etkinlikler için ayrılmış yerler taziye evlerinin bağımsız olarak oluşumuna giden yolda kendine yer bulmaya başlamıştır. Diyarbakır'da taziye evleri için “yas evi” kelimesi de kullanılmaktadır. Genel olarak taziye evlerinin inşasının; dernekler, hayırseverler, sivil toplum örgütleri ve belediyeler tarafından yapıldığı görülmektedir. Taziye evlerinin başında imam, vaiz, seyda¹, mele², dernek başkanları gibi kişiler vardır. Taziye genel olarak 3 gün sürmektedir. Taziye sahipleri bu süreçte sıcak veya soğuk içecek ikramlarında³ bulunmaktadır. Taziye süresince sunulan hizmetlerin maliyetleri ise taziye sahipleri, dernekler ve gönüllüler tarafından karşılanmaktadır. Bu çalışmada yazılı ve basılı kaynaklardan literatür taraması yapılarak; belediye arşivleri, sözlü görüşmeler, yerinde gözlem/inceleme metotlarıyla çalışma tamamlanmıştır. Diyarbakır kent merkezine bağlı ilçelerinde bulunan 47 mahalle bu çalışmanın sınırlarını oluşturmaktadır. Taziye evlerinin kentin içinde sayılarının sürekli artması ve mimarisinin özelleşmesi toplumda önemli bir yer edindiğinin ve bu mekânların incelenmesi gerektiğinin önemini ortaya koymaktadır. Taziye evleri, kentlileşme odağında, önce çadırlarda, sonra bina altlarında ve camii bağlantılı

¹ Seyda: Etimolojisi hakkında kesin bilgi olmasa da Arapça “Seyyid” kelimesinin, önce Farsça bir seslenme formunda: “Efendim!” “Büyüğüm!” anlamındaki “Seyyida!” şeklinde kullanıldıktan sonra Kürtçe dili telaffuza uyum sağlamış ve bugünkü şeklini almıştır (Yalar, 2011, sf: 459).

² Mele: Daha çok Kürtçede “Mela” olarak kullanılan Mele; Farsça ve Türkçede kullanılan “Molla”nın Kürtçe kullanışdır (Yalar, 2011, sf:464).

³ Türkiye’de değişen sosyo-ekonomik hayat sebebiyle taziye sahipleri özellikle yemek ikramı için kredi dahi çekmeye başlamış ve birçok insan için büyük külfete dönmüştür. Bu sebeptendir ki yemek verme uygulaması kentin önde gelen kurum ve kuruluşları ile hayırseverleri tarafından kaldırılmış, sadece sıcak ya da soğuk içecek ikramları yapılmaktadır.

oluşturulurken bugün fonksiyonel olarak daha büyük ve özelleşmiş alanlara ihtiyaç duyulmuş ve bağımsız binalar biçiminde kentte kendine yeni bir yer edinmiştir.

Anahtar Kelimeler: Ölüm; Taziye/Yas; Taziye/Yas Evleri; Diyarbakır

ABSTRACT

While death scientifically signifies an end, it carries many different meanings in people's religious beliefs and cultures. From past to present, all societies have had various forms of ceremonial activity following death. A significant part of this post-mortem ritualistic scheme consists of visits called "tayyat" (condolences), which are made to share the grief of the deceased's relatives. The culture of condolence, seen in social life, began to differentiate from the traditional structure with the urbanization and growing urbanization of Diyarbakır. This study aims to identify the place of this differentiated culture in society and its changes and development within the city. The spatial differentiation observed in living spaces, within the framework of the rules imposed by apartment living that began with urbanization, has created difficulties in maintaining the long-standing culture of condolence. Condolence ceremonies, which can attract large numbers of people depending on the deceased's status within society, have seen a shift in housing types, leading to the independent formation of condolence houses. In Diyarbakır, the term "mourning house" is also used for condolence houses. Generally, the construction of condolence houses is undertaken by associations, philanthropists, non-governmental organizations, and municipalities. Condolence houses are headed by individuals such as imams, preachers, seydas, meles, and association presidents. Condolences generally last three days. Condolence recipients are offered hot or cold beverages during this period. The costs of services provided during the condolence are covered by the condolence recipients, associations, and volunteers. This study was completed by conducting a literature review of written and printed sources, using municipal archives, oral interviews, and on-site observation/investigation methods. The 47 neighborhoods within the districts of Diyarbakır's city center constitute the boundaries of this study. The continuous increase in the number of condolence houses within the city and the specialized architecture of these spaces highlight their significant place in society and the importance of examining them. While condolence houses were initially established in tents, later under buildings and connected to mosques as urbanization progressed, today the need for functionally larger and more specialized spaces has led to a new place in the city in the form of independent buildings.

Keywords: Death; Condolence/Mourning; Condolence/Mourning Houses; Diyarbakır.

ANTICANCER ACTIVITY OF ALOE VERA

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ABSTRACT

Aloe vera (*Aloe barbadensis* Miller) has therapeutic activity on various diseases such as cancer, diabetes, hemorrhoids, injuries, and insomnia. Aloe vera also exhibits antioxidant, antifungal, and antibacterial activity. Thanks to these properties, it was known as the “plant of immortality” in Ancient Egypt and is referred to as the “miracle plant” today (1,2). Aloe vera is particularly noteworthy in cancer treatment because it does not have significant adverse effects. This is because the active ingredients used in cancer treatment today have a very negative impact on patients’ quality of life and increase mortality. Some frequently observed adverse effects include hair loss, infertility, fatigue, and cardiovascular diseases (8, 6, 4). In a toxicity study conducted by the IASC on experimental animals, aloe vera was tested for genotoxicity, subacute, acute, and subchronic toxicity, and no toxicity was found (3). However, in human oral use, side effects such as nausea, hypokalemia, jaundice, and abdominal pain have been encountered over a period of more than 2 weeks (7). Aloe Barbadensis Miller may exhibit anticancer activity by inducing both apoptosis and autophagy in cancer cells (8). This activity is mediated by mTOR/AKT, FOXp3, TGF-beta, p53 pathways, BCL2 downregulation, Bax proteins, and caspase upregulation, among others (4,9,10,11). Aloe vera may exhibit anticancer activity due to its effects on inducing apoptosis, antiproliferative activity, antigrowth activity, antiangiogenesis activity, regulation of glucose metabolism, inhibition of telomerase activity, and cellular immunity (12). Furthermore, it has been determined that Aloe vera affects the phases of the cell cycle, thereby preventing proliferation, and this effect has been found to be related to various genetic pathways. This activity has been reported to occur on the G0/G1 phases of the cell cycle, while in the S phase, it supports cell proliferation. Aloe vera also contributes to anticancer activity through the immune system by increasing the number of T helper-1 cells and the amount of IL-4, thereby suppressing tumor growth. The study also showed that glucomannan, a component of aloe vera, supports this activity by facilitating the uptake of other anticancer agents (4). Consequently, investigating the anticancer activity of aloe vera in various formulations may offer a new strategy against cancer.

Keywords: Anticancer activity, Aloe vera, Cancer Pathway

OTOİMMÜN HASTALIKLARIN PATOGENEZİNDE TÜMÖR NEKROZ FAKTÖRÜNÜN ROLÜNE BİYOENFORMATİK BİR YAKLAŞIM

A BIOINFORMATIC APPROACH TO THE ROLE OF TUMOR NECROSIS FACTOR IN THE PATHOGENESIS OF AUTOIMMUNE DISEASES

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Özet

Giriş: Tümör nekroz faktörü-alfa (TNF- α), monositler/makrofajlar tarafından üretilen ve endotel veya tübüler hücrelerdeki TNF reseptörlerine bağlanan, TNF süper ailesine ait proinflamatuvar bir sitokindir. İnflamatuvar yanıtların önemli bir düzenleyicisi olarak tanımlanmıştır ve birçok homeostatik ve inflamatuvar süreçte rol oynar. Otoimmün ve inflamatuvar hastalıkların patogeneziinde rol oynadığı bilinmektedir.

Amac: Çalışmamızda biyoinformatik veri tabanları kullanılarak TNF- α 'nın işlevi, genlerle bağlantısını ve otoimmün ve inflamatuvar hastalıkların patogeneziindeki rolünü incelemektir.

Yöntem: TNF- α sitokin geninin diğer genlerle ilişkisini tespit etmek için Genemania/Gwas veritabanı, diğer genlerle olan fiziksel etkileşimleri göstermek, kullanılan yolları belirlemek için String veritabanı kullanıldı. Aynı zamanda GeneCard, String, MalaCards, GenCards ve Gwas veri tabanları kullanılarak hastalıklar ile ilişkisi belirlendi. TNF- α sitokininin moleküler fonksiyonlarını belirlemek içinde String ve UniProtKB/Swiss-Prot veritabanları kullanıldı.

Sonuc: String veritabanları kullanılarak yapılan analizde, TNF'nin TNFRSF1B, NFKB1, TRAF2, RIPK1, TRADD (Tumor necrosis factor receptor type 1-associated DEATH domain protein), CASP8, TAB2, MAP3K7, CHUK, TNFRSF1B ve ADAM17 gibi moleküllerle ilişkili olduğu bulundu. Ayrıca Genemania veritabanı ile analizde ise 20 protein ile ilişkili olduğu bulundu. String veritabanı kullanılarak yapılan analizde, T lenfosit, idrar, lökosit, kan, lenfoid doku ve uterusda, aşırı eksprese edildiği gösterildi. GeneCards veritabanı kullanılarak yapılan analizde ise, TNF'nin beyaz kan hücreleri, dalak, bağırsak, lenf nodu, adrenal bez, böbrek ve kanda yüksek düzeyde ifade edildiği ortaya konuldu. TNF- α sitokininin GWAS'da 59 gen ile ilişkisi saptanmıştır. String ve Genecards veritabanı kullanılarak yapılan analizde; TNF-alpha signaling (FDR:1.08e-22), NF-kappa B signaling pathway (1.72e-17), IL-17 signalig pathway (2.37e-15), apoptosis (1.50e-17) gibi yollarla bağlantılı olduğu saptandı. TNF- α sitokininin Malacards, Genecards ve Gwas veri tabanları kullanılarak yapılan anlizde; Rheumatoid Arthritis (Score=48.24), Astım (Score= 27.77), Psoriasis (Score=28.68), Chron's Disease (Score=37.31), Autoimmune Disease (Score=29.09), Colitis (Score=33.02) gibi hastalıklar ile bağlantısı bulunmaktadır.

Sonuç: Elde edilen bilgilerin doğrultusunda birçok yolakta farklı rolleri olan TNF- α sitokininin başka genlerle bağlantısı, işlevini ve hastalıklardaki rolünü anlamak ve bu sitokini hedef alan yeni tedavi yöntemlerinin geliştirilmesine katkıda bulunacağı düşünülmektedir.

Anahtar Kelimeler: Kemokin, TNF- α , biyoinformatik, hastalık patogenezi.

Abstract

Introduction: Tumor necrosis factor-alpha (TNF- α) is a proinflammatory cytokine belonging to the TNF superfamily, produced by monocytes/macrophages and binding to TNF receptors on endothelial or tubular cells. It has been identified as a key regulator of inflammatory responses and plays a role in many homeostatic and inflammatory processes. It is known to play a role in the pathogenesis of autoimmune and inflammatory diseases.

Objective: Our study used bioinformatics databases to investigate the function of TNF- α , its association with genes, and its role in the pathogenesis of autoimmune and inflammatory diseases.

Method: The Genemania/Gwas database was used to identify the association of the TNF- α cytokine gene with other genes, and the String database was used to demonstrate physical interactions with other genes and identify the pathways involved. Furthermore, the GeneCard, String, MalaCards, GenCards, and Gwas databases were used to determine its association with diseases. String and UniProtKB/Swiss-Prot databases were used to determine the molecular functions of the TNF- α cytokine.

Results: Analysis using the String databases revealed that TNF- α was associated with molecules such as TNFRSF1B, NFKB1, TRAF2, RIPK1, TRADD (Tumor necrosis factor receptor type 1-associated DEATH domain protein), CASP8, TAB2, MAP3K7, CHUK, TNFRSF1B, and ADAM17. Analysis using the Genemania database also revealed associations with 20 proteins. Analysis using the String database showed that TNF- α was overexpressed in T lymphocytes, urine, leukocytes, blood, lymphoid tissue, and uterus. Analysis using the GeneCards database revealed that TNF- α was highly expressed in white blood cells, spleen, intestine, lymph nodes, adrenal glands, kidneys, and blood. TNF- α cytokine was associated with 59 genes in GWAS. Analysis using the String and Genecards databases revealed that it is linked to pathways such as TNF-alpha signaling (FDR: 1.08e-22), NF-kappa B signaling pathway (1.72e-17), IL-17 signaling pathway (2.37e-15), and apoptosis (1.50e-17). Analysis using the Malacards, Genecards, and GWAS databases revealed that TNF- α cytokine is associated with diseases such as Rheumatoid Arthritis (Score=48.24), Asthma (Score=27.77), Psoriasis (Score=28.68), Crohn's Disease (Score=37.31), Autoimmune Disease (Score=29.09), and Colitis (Score=33.02).

Conclusion: The information obtained is expected to contribute to understanding the TNF- α cytokine's relationship with other genes, its function, and its role in diseases, which play diverse roles in many pathways, and to the development of new therapeutic methods targeting this cytokine.

Keywords: Chemokine, TNF- α , bioinformatics, disease pathogenesis.

KENT PLANLAMA SÜREÇLERİNE KATILIMIN ENDÜSTRİ DEVRİMLERİ İLE DÖNÜŞÜMÜ TRANSFORMATION OF PARTICIPATION IN URBAN PLANNING THROUGH THE INDUSTRIAL REVOLUTIONS

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ÖZET

Kentler, yalnızca yapılar, donatı, altyapı alanları ve nüfusun yoğunlaştığı yerler değil; toplumsal ilişkilerin şekillendirdiği, yurttaşların toplumsal karar alma süreçlerine doğrudan veya dolaylı olarak katıldığı, çoğulculuğun, eşitliğin ve kamusal yaşamın biçimlendiği dinamik sosyal mekânlardır. Kentin bu işlevi, planlama süreçlerinin yalnızca teknik düzenleme ile değil, aynı zamanda toplumsal uzlaşma ve meşruiyet üretme pratiği olmasını zorunlu kılmaktadır. Bu çok katmanlı yapıyı yönlendiren kent planlama disiplini, tarihsel süreç içerisinde özellikle Endüstri Devrimlerinin yarattığı üretim şekillerinin değişimi ve teknolojik gelişmeler ile sosyo-ekonomik dönüşümlere ve önemli paradigma değişimlerine sahne olmuştur.

Birinci ve İkinci Endüstri Devrimlerinin tetiklediği hızlı kentleşme ile birlikte oluşan sağlıklı yerleşimler, merkeziyetçi ve rasyonel, modernist planlama yaklaşımlarını öne çıkarmıştır. Bu dönemde gelişen akılcı yaklaşımların etkisinde yurttaş katılımı sınırlı kalmıştır. Ancak postmodern dönemde iletişimsel aklın yükselişiyle birlikte, toplumsal çeşitliliği ve yerel bilgiyi planlama süreçlerine dâhil etme gerekliliği belirginleşmiş, katılım demokratik meşruiyetin, sosyal adaletin ve mekânsal kalitenin artırılmasında önemsenmiştir.

Üçüncü ve özellikle Dördüncü Endüstri Devrimi ile birlikte gelişen dijital teknolojiler, yapay zekâ, büyük veri ve siber-fiziksel sistemler, planlamada katılımın biçim ve ölçeğini genişletmiştir. Toplum 5.0 ise Endüstri 4.0 teknolojilerinin insan odaklı olarak kullanıldığı yeni bir yaklaşım öne sürmektedir. Son dönemlerde planlama anlayışı da temsil ötesi yaklaşımlar ile şekillenmektedir. Mekânın ve toplumsal ilişkilerin sadece somut ve dilsel temsillerle değil, duymasal deneyimler, duygular ve gündelik pratiklerle de şekillendiğini yeni paradigmlar öne çıkarmaktadır. Endüstri 4.0 ve Toplum 5.0'ın sunduğu yenilikler, vatandaşların mekânsal karar süreçlerine daha etkin biçimde katılımını mümkün kılarak planlamada bilgi tabanlı, esnek, kapsayıcı ve daha demokratik bir yaklaşımın gelişmesine olanak tanımıştır. Bu sayede de günümüzde planlama anlayışında tartışılan temsil ötesi kuramlar ve yeni planlama anlayışları teknolojinin sunduğu bu imkanlar ile yeni bir boyut kazanacaktır.

Bu çalışma, endüstri devrimlerinin kent planlama anlayışını katılım perspektifinden nasıl dönüştürdüğünü incelemekte; dijitalleşme sürecinin ve toplum 5.0 anlayışının katılımın niteliğini, erişilebilirliğini ve planlama süreçlerine katkısını ortaya koymaktadır.

Anahtar Kelimeler: Kent Planlama, Yurttaş Katılımı, Endüstri Devrimleri, Yapay Zeka, Toplum 5.0

ABSTRACT

The city is not merely a place where structures, amenities, infrastructure areas, and population are concentrated; it is a social space shaped by social relations, where citizens directly or indirectly participate in social decision-making processes, and where pluralism, equality, and

public life are configured. This function of the city necessitates that planning processes are not only acts of technical regulation but also practices that generate social consensus and legitimacy. The urban planning discipline, which guides this multi-layered structure, has undergone significant paradigm shifts throughout its history, particularly due to the technological and socio-economic transformations brought about by the Industrial Revolutions. The rapid urbanization triggered by the First and Second Industrial Revolutions led to the formation of unhealthy settlements, which gave rise to centralized, rational, and modernist planning approaches. During this era, citizen participation remained limited, and planning processes progressed largely in a top-down manner. However, with the rise of communicative rationality in the postmodern period, the need to incorporate social diversity and local knowledge into planning processes became evident. Consequently, participation has become a fundamental tool for enhancing democratic legitimacy, social justice, and spatial quality.

The digital technologies that have developed with the Third and especially the Fourth Industrial Revolution—including Artificial Intelligence (AI), Big Data, and Cyber-Physical Systems—have expanded the form and scope of participation in planning. Society 5.0 introduces a human-centered paradigm that harnesses these technologies for public benefit. In parallel, planning theory has recently been influenced by post-representational approaches, which argue that space and social relations are shaped not only through concrete or linguistic representations but also through sensory experiences, emotions, and everyday practices. The opportunities provided by Industry 4.0 and Society 5.0 enable more active citizen involvement in spatial decision-making, supporting the emergence of a more flexible, inclusive, knowledge-based, and democratic planning framework.

This study examines how the industrial revolutions have transformed the understanding of urban planning from a participation perspective and reveals how digitalization increases the quality, accessibility, and contribution of participation to planning processes.

Keywords: Urban Planning, Citizen Participation, Industrial Revolutions, Artificial Intelligence, Society 5.0

**MAIRCA VE MARCOS YÖNTEMLERİYLE FİNANSAL PERFORMANS ANALİZİ:
TÜRKİYE'DE BİLİŞİM VE YAZILIM SEKTÖRÜ**
FINANCIAL PERFORMANCE ANALYSIS WITH MAIRCA AND MARCOS METHODS:
INFORMATION AND SOFTWARE SECTOR IN TURKEY

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ÖZET

Yapay zekâ teknolojilerinin her geçen gün gelişme göstermesiyle bilişim ve yazılım sektörü ön plana çıkmakta ve teknolojik gelişme alanında faaliyet gösteren firmaların piyasa değerini etkilemektedir. Firmaların finansal performansının değerlendirilmesi ise hisse senedi yatırımcıları başta olmak üzere kreditorler ve işletme yöneticileri açısından önem arz etmektedir. Bu çalışmada son yıllarda yaşanan hızlı teknolojik gelişmelerin en fazla öne çıktığı sektörlerin başında gelen bilişim ve yazılım sektöründe faaliyet gösteren firmaların finansal performansının incelenmesi amaçlanmaktadır. Literatürde, bilişim ve yazılım sektörü firmalarının finansal performansının çok kriterli karar verme teknikleriyle incelendiği çalışmalar yer almakla birlikte, MAIRCA ve MARCOS tekniklerinin kullanıldığı çalışmaya rastlanılmamıştır. Dolayısıyla bu çalışmada bilişim ve yazılım sektöründeki firmalarının finansal performansının çok kriterli karar verme tekniklerinden MAIRCA ve MARCOS teknikleriyle incelenmesi çalışmanın özgün yönünü ortaya koymaktadır.

Çalışmada, Borsa İstanbul (BIST)'da işlem gören, bilişim ve yazılım sektöründe faaliyet gösteren 26 firma verisi incelenmiştir. Bu firmaların finansal performansının karşılaştırmalı olarak değerlendirilmesi amacıyla iki farklı yöntem kullanılmıştır. Bu doğrultuda firmaların finansal performansının ortaya koyulmasında çok kriterli karar verme tekniklerinden standart sapma temeline dayalı MAIRCA ve MARCOS yöntemlerinden faydalanılmıştır. Firmaların, 2024 yılı finansal performansının belirlenmesinde nakit oranı, piyasa değeri/defter değeri, likidite oranı, aktif karlılık oranı, faiz ve vergi öncesi kar, net kar marjı, özsermaye karlılığı, aktif devir hızı, alacak devir hızı, özsermaye devir hızı, kaldıraç oranı ve borç-öz sermaye oranı olmak üzere 12 farklı kriter kullanılmıştır. Çalışmanın analiz sürecinde, 26 firma (alternatif karar verme birimi) ile bu firmalara ilişkin 12 finansal tablo verisi (kriterler) ile bir karar matrisi oluşturulmuştur. Kriterlerin önem ağırlığının belirlenmesinde ise objektif yöntemlerden biri olan standart sapma yönteminden faydalanılmıştır. Normalize edilmiş karar matrisinin belirlenmesinin ardından standart sapma değerleri hesaplanarak, kriter ağırlıkları tespit edilmiştir. Buna göre, aktif devir hızının önem ağırlığının en yüksek, likit oranının ise önem ağırlığının en düşük olduğu bulgusu elde edilmiştir. Kriterlerin önem ağırlıklarının belirlenmesinin ardından MAIRCA yönteminin aşamaları uygulanmıştır. Bu yönteminin işlem adımları kapsamında alternatiflerin önceliklendirmesi yapılarak teorik, gerçek derecelendirme ve toplam boşluk matrisi oluşturulmuştur. Son olarak kriterlerin nihai değerleri tespit edilerek firmaların sıralamaları tespit edilmiştir. Bu yöntemin sonuçlarından elde edilen bulgulara göre, finansal performans açısından Bin Ulaşım Ve Akıllı Şehir Teknolojileri A.Ş.'nin birinci sırada, MİA Teknoloji A.Ş.'nin ikinci sırada, Matriks Finansal Teknolojiler A.Ş.'nin ise üçüncü sırada yer aldığı tespit edilmiştir. Manas Enerji Yönetimi Sanayi Ve Ticaret A.Ş.'nin ise yirmi altıncı sırada olduğu bulgusu elde edilmiştir.

2024 yılında bilişim ve yazılım sektöründe faaliyet gösteren 26 firmanın finansal performansı çok kriterli karar verme tekniklerinden MARCOS yöntemiyle de incelenmiştir. MARCOS yönteminin işlem adımları kapsamında genişletilmiş, normal ve ağırlıklandırılmış matrisler oluşturularak alternatiflerin fayda derecesi ve fayda fonksiyonları hesaplanmıştır. MARCOS yönteminden elde edilen bulgulara göre, finansal performans bakımından MİA Teknoloji A.Ş.'nin birinci sırada, İnnosa Teknoloji A.Ş.'nin ikinci sırada, Fonet Bilgi Teknolojileri A.Ş.'nin ise üçüncü sırada yer aldığı tespit edilmiştir. Yirmi altıncı sırada yer alan firmanın ise MAIRCA yönteminden elde edilen bulguya benzer şekilde Manas Enerji Yönetimi Sanayi ve Ticaret A.Ş. olduğu saptanmıştır.

Anahtar Kelimeler: Finansal Performans, Mairca, Marcos, Bilişim ve Yazılım, Çok Kriterli Karar Verme Teknikleri

ABSTRACT

As artificial intelligence technologies advance, the IT and software sector becomes increasingly prominent and influences the market value of firms involved in technological development. Evaluating the financial performance of firms is important for stock investors, creditors, and business managers. This study aims to examine the financial performance of firms operating in the IT and software sector, one of the sectors where rapid technological developments have been most prominent in recent years. Although studies in the literature examine the financial performance of IT and software sector firms using multi-criteria decision-making techniques, no study using the MAIRCA and MARCOS techniques has been found. Therefore, this study's examination of the financial performance of firms in the IT and software sector using MAIRCA and MARCOS, which are multi-criteria decision-making techniques, demonstrates the study's originality.

In this study, data from 26 firms operating in the IT and software sectors and traded on Borsa Istanbul (BIST) were examined. Two different methods were used to comparatively evaluate the financial performance of these firms. In this respect, the MAIRCA and MARCOS methods, which are multi-criteria decision-making techniques based on standard deviation, were used to reveal the financial performance of the firms. To determine the financial performance of the firms in 2024, 12 different criteria were used: cash ratio, market value/book value, liquidity ratio, return on assets ratio, profit before interest and taxes, net profit margin, return on equity, asset turnover, receivables turnover, equity turnover, leverage ratio, and debt-to-equity ratio. In the analysis process of the study, a decision matrix was created with 26 firms (alternative decision-making units) and 12 financial statement data points (criteria) related to these firms. To determine the importance weight of the criteria, the standard deviation method, an objective approach, was used. After calculating the standard deviation values from the normalized decision matrix, the criterion weights were determined. The asset turnover rate had the highest criterion weight, while the liquid ratio had the lowest criterion weight. After determining the criteria weights, the MAIRCA method was applied. As part of this method's process steps, alternatives were prioritized, and theoretical, actual rating, and total gap matrices were created. Finally, the values of the criteria were determined to establish the firms' rankings. The findings from this method revealed that Bin Ulaşım Ve Akıllı Şehir Teknolojileri A.Ş. ranked first in financial performance, MİA Teknoloji A.Ş. ranked second, and Matriks Finansal Teknolojiler A.Ş. ranked third. Manas Enerji Yönetimi Sanayi ve Ticaret A.Ş. ranked twenty-sixth.

The financial performance of 26 firms' operating in the IT and software sectors in 2024 was also examined using the MARCOS method, a multi-criteria decision-making technique. As part of the MARCOS method's process steps, the utility ratings and utility functions of the alternatives were calculated by creating expanded, normalized, and weighted matrices. According to the findings from the MARCOS method, MİA Teknoloji A.Ş. ranked first in

financial performance, İnnosa Teknoloji A.Ş. ranked second, and Fonet Bilgi Teknolojileri A.Ş ranked third. Manas Enerji Yönetimi Sanayi ve Ticaret A.Ş ranked twenty-sixth, consistent with the findings from the MAIRCA method.

Keywords: Financial Performance, Mairca, Marcos, Information and Software, Multi-Criteria Decision Making Techniques

OPTIMIZATION OF THE INDUSTRIAL TREATMENT SLUDGE USE IN VERMICOMPOST PRODUCTION

OPTIMIZATION OF THE INDUSTRIAL TREATMENT SLUDGE USE IN VERMICOMPOST PRODUCTION

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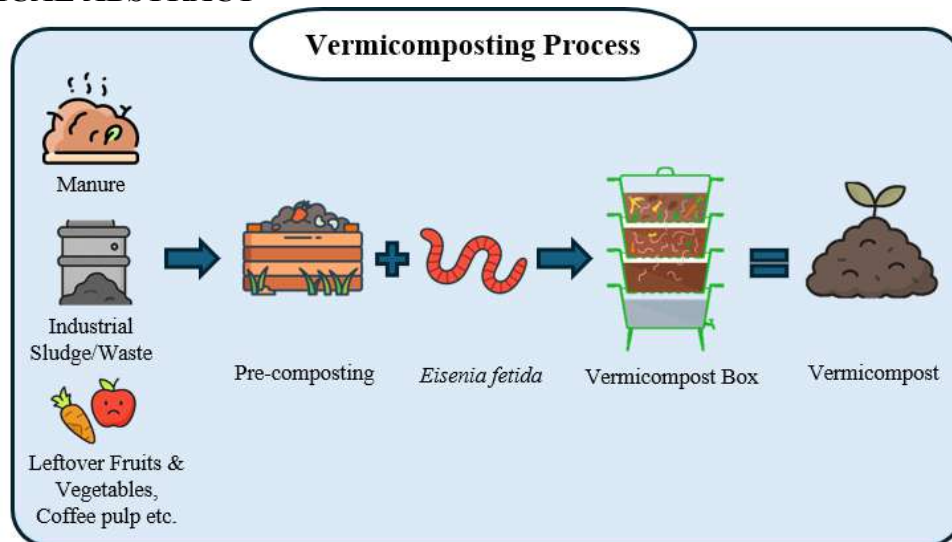
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GRAPHICAL ABSTRACT



ABSTRACT

In this study, the optimization of the usage rates of Industrial Treatment Sludge (ITS) in vermicompost production was aimed. The sludge formed in wastewater treatment plants contains high amounts of organic matter. However, the direct application of Industrial Treatment Sludge to agricultural soils poses significant environmental risks due to its heavy metal and pathogen content. Therefore, its use is restricted or prohibited under current regulations, and safe disposal is mandatory. Thus, the incorporation of treatment sludge into vermicompost production is increasingly regarded as a sustainable recycling strategy within circular agriculture and industrial resource management. In this study, three experimental

groups were established by blending animal manure, organic waste (banana, apple, cardboard, carrot, and coffee pulp), and industrial treatment sludge at different proportions. *Eisenia fetida* earthworms were added to the mixtures to initiate the vermicomposting process, and the system was monitored over a 50-day period. To monitor the optimal living conditions for *Eisenia fetida*, ambient and vermicompost bed temperatures were measured daily, while pH and electrical conductivity (EC) were monitored at regular intervals. The progression of the vermicomposting process was evaluated based on the obtained data. According to the results obtained, the approach of electrical conductivity and pH values to the pH and electrical conductivity values of mature vermicompost was evaluated. From a physicochemical perspective, the feasibility of monitoring the process through electrical conductivity and pH parameters was evaluated. According to the results obtained, a decrease in electrical conductivity was observed during the vermicomposting process. This situation, when compared with the literature, indicates that the vermicompost progressed toward maturity. pH values showed only slight variations of around $\pm 0,1$, consistently remaining within the range suitable for optimal *Eisenia fetida* performance. Temperature values have been observed to be at an optimal level for *Eisenia fetida* life.

Keywords: *Eisenia fetida*, Industrial Treatment Sludge, Optimization, Organic Waste Management, Vermicompost.

**CeO₂ NANOYAPILARININ ETANOL ELEKTRO-OKSİDASYONU AKTİVİTESİ
ÜZERİNE Pd NANOPARÇACIKLARININ ETKİSİ**
EFFECT OF Pd NANOPARTICLES ON ETHANOL ELECTRO-OXIDATION ACTIVITY
OF CeO₂ NANOSTRUCTURES

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ÖZET

Artan nüfus, sanayileşme ve teknolojik gelişmeler her geçen gün enerji ihtiyacının da artmasına neden olmuştur. Üstelik fosil yakıtların da giderek tükenmesi ve bu yakıtların küresel ısınma gibi olumsuz etkileri alternatif enerji arayışlarını zorunlu kılmıştır. Hidrojen veya çeşitli yakıtların (etanol, metanol gibi) kullanıldığı yakıt pilleri, günümüzde alternatif enerji üretim teknolojileri arasında önemli bir yere sahiptir. Doğrudan alkol yakıt hücreleri enerji verimliliği açısından iyi bir alternatif olarak ön plana çıkmaktadır. Ancak alkol kaynağı ve hücrede kullanılacak elektrot materyalinin özelliği enerji verimliliğine etki etmektedir. Seryum oksit (CeO₂) yüksek katalitik etkiye sahip bir nadir toprak metali oksididir ve elektrokimyasal çalışmalarda da sıklıkla kullanılır.

Bu çalışmada, kalem ucu grafit elektrot (PGE) yüzeyinde CeO₂ nanoyapılarının elektrokimyasal sentezi gerçekleştirildi. Hazırlanan CeO₂ nanoyapıları x-ışını kırınımı, x-ışını fotoelektron spektroskopisi, Raman spektroskopisi ve alan emisyon mikroskobu gibi farklı teknikler kullanılarak karakterize edildi. Sentezlenen CeO₂ nanoyapılarının yüzeyleri elektrokimyasal teknik kullanılarak Pd nanoparçacıkları ile dekore edilmesi sağlandı. Pd nanoparçacıkları ilave edilmiş CeO₂ nanoyapılarının etanol elektro-oksidadasyonundaki aktivitesi araştırıldı.

Anahtar kelimeler: CeO₂ nanoyapı, Etanol elektro-oksidadasyonu, Pd nanoparçacık.

ABSTRACT

Increasing population, industrialization, and technological advancements have driven an ever-growing energy demand. Furthermore, the gradual depletion of fossil fuels and their adverse effects, such as global warming, have necessitated the search for alternative energy sources. Fuel cells, which utilize hydrogen or various fuels (such as ethanol and methanol), hold a significant place among today's alternative energy production technologies. Direct alcohol fuel cells are a good alternative for energy efficiency. However, the characteristics of the alcohol source and the electrode material used in the cell affect energy efficiency. Cerium oxide (CeO₂) is a rare-earth metal oxide with high catalytic activity and is frequently used in electrochemical studies.

In this study, CeO₂ nanostructures were electrochemically synthesized on a pencil graphite electrode (PGE). The prepared CeO₂ nanostructures were characterized using various techniques, including X-ray diffraction, X-ray photoelectron spectroscopy, Raman spectroscopy, and field emission microscopy. The surfaces of the synthesized CeO₂ nanostructures were decorated with Pd nanoparticles using electrochemical techniques. The activity of Pd nanoparticles-decorated CeO₂ nanostructures in ethanol electro-oxidation was investigated.

Keywords: CeO₂ nanostructure, Ethanol electro-oxidation, Pd nanoparticle

TÜRKÇE KURUMSAL BİLGİ TABANLARINDA RAG VE YEREL LLM ENTEGRASYONU: DESTEK SÜREÇLERİNİN HIZLANDIRILMASI

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ÖZET

Endüstri 4.0 ve dijital dönüşüm süreçlerinde, kurumsal bilgi birikiminin (know-how) etkin yönetimi, depolanması ve gerektiğinde hızlıca erişilebilir olması işletmeler için kritik bir rekabet unsuru haline gelmiştir. Özellikle karmaşık üretim ve yazılım süreçlerine sahip organizasyonlarda, çalışanların teknik prosedürler, hata kodları ve çözüm adımlarına ulaşmak için harcadığı zaman, kurumlar için ölçülmesi güç ancak önemli bir maliyet kalemi oluşturmaktadır. Geleneksel bilgi yönetim sistemleri ve statik dokümantasyon yapıları, artan veri hacmi ve hızla değişen teknik gereksinimler karşısında yetersiz kalmaktadır. Bu çalışma, kurumsal verilerin dış kaynaklı (Cloud) yapay zeka servisleriyle paylaşılmasının yarattığı güvenlik risklerini ortadan kaldıran, tamamen iç ağda (On-Premise) çalışan, RAG (Retrieval-Augmented Generation) tabanlı bir akıllı asistan mimarisini sunmaktadır. Geliştirilen sistem, ChromaDB vektör veritabanı ve Multilingual-E5-Large embedding modellerini kullanarak, kurum içi yapılandırılmamış veriyi ve geçmiş teknik destek kayıtlarını anlamlandırmaktadır. Gemma 3 - 12b it dil modeli üzerinde gerçekleştirilen ince ayar (fine-tuning) çalışmalarıyla, modelin kurumsal bir üslupla, halüsinasyon riskinden arındırılmış adım adım çözüm rehberliği sunması sağlanmıştır. Çalışma kapsamında veri ön işleme, vektörleştirme stratejileri ve çok modlu (görsel ve metin) etkileşim süreçleri detaylandırılmıştır. Elde edilen bulgular, bilgiye erişim süresinin dakikalardan saniyelere indiğini, operasyonel verimliliğin arttığını ve veri gizliliğinin tam olarak sağlandığını göstermektedir.

Anahtar Kelimeler: RAG, Yerel LLM, Kurumsal Hafıza, Yapay Zeka, Müşteri Destek Otomasyonu, ChromaDB, Veri Gizliliği.

ABSTRACT

In Industry 4.0 and digital transformation processes, the effective management, storage, and rapid accessibility of corporate know-how have become a critical competitive element for businesses. Especially in organizations with complex production and software processes, the time employees spend accessing technical procedures, error codes, and solution steps constitutes a significant cost item that is difficult to measure. Traditional knowledge management systems and static documentation structures remain insufficient in the face of increasing data volumes and rapidly changing technical requirements. This study presents a RAG (Retrieval-Augmented Generation) based smart assistant architecture that runs entirely on the internal network (On-Premise), eliminating the security risks created by sharing corporate data with external (Cloud) AI services. The developed system interprets internal unstructured data and past technical support records using the ChromaDB vector database and Multilingual-E5-Large embedding models. Through fine-tuning studies performed on the

Gemma 3 - 12b it language model, the model is enabled to provide step-by-step solution guidance in a corporate tone, free from the risk of hallucination. Within the scope of the study, data preprocessing, vectorization strategies, and multi-modal (visual and text) interaction processes are detailed. The findings indicate that the time to access information has decreased from minutes to seconds, operational efficiency has increased, and data privacy is fully ensured.

Keywords: RAG, Local LLM, Corporate Memory, Artificial Intelligence, Customer Support Automation, ChromaDB, Data Privacy.

ENDÜSTRİYEL ÜRETİMDE KESTİRİMCİ BAKIM VE OPTİMİZASYON: KALAN FAYDALI ÖMÜR TAHMİNİ VE PARAMETRE YÖNETİMİ

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ÖZET

Endüstri 4.0 dönüşümü ile birlikte imalat sanayisinde kestirimci bakım uygulamaları, üretim verimliliğini artırmak ve maliyetleri düşürmek adına kritik bir rol oynamaktadır. Bu çalışmada, talaşlı imalatın temel bileşenlerinden olan şerit testere makineleri için LightGBM algoritması ve kural tabanlı uzman sistemleri birleştiren hibrit bir kestirimci bakım modeli geliştirilmiştir. Çalışma kapsamında kurulan heterojen sensör ağı ve IoT altyapısı ile toplanan gerçek zamanlı veriler (akım, hız, titreşim), ileri seviye özellik mühendisliği yöntemleriyle işlenmiştir. Geliştirilen model, sadece makine öğrenmesi tabanlı bir sağlık endeksi üretmekle kalmayıp, endüstriyel saha gerçeklerine (Survivor Bias) uygun "Koşullu Beklenti" ve "Stabilizasyon" algoritmalarıyla entegre edilerek operatörler için anlamlı bir Kalan Faydalı Ömür (RUL) bilgisine dönüştürülmüştür. Ayrıca, kritik eşik aşımalarında devreye giren çok kanallı bildirim sistemi (SMS/E-posta) ve görsel uyarı mekanizmaları ile bütünlük bir karar destek sistemi sunulmuştur. Elde edilen bulgular, önerilen sistemin ani duruşları engellemede ve kesici takım ömrünü optimize etmede yüksek başarı sağladığını göstermektedir.

Anahtar Kelimeler: Kestirimci Bakım, RUL Tahmini, LightGBM, Şerit Testere, Endüstriyel IoT.

ABSTRACT

With the Industry 4.0 transformation, predictive maintenance applications in the manufacturing industry play a critical role in enhancing production efficiency and reducing costs. In this study, a hybrid predictive maintenance model combining the LightGBM algorithm and rule-based expert systems has been developed for band saw machines, which are fundamental components of machining operations. Real-time data (current, speed, vibration) collected through a heterogeneous sensor network and IoT infrastructure established within the scope of the study were processed using advanced feature engineering methods. The developed model not only generates a machine learning-based health index but also transforms this into meaningful Remaining Useful Life (RUL) information for operators by integrating "Conditional Expectation" and "Stabilization" algorithms tailored to industrial field realities (Survivor Bias). Furthermore, an integrated decision support system is presented, featuring multi-channel notification systems (SMS/E-mail) and visual warning mechanisms that activate upon critical threshold breaches. The findings indicate that the proposed system achieves high success in preventing unplanned downtime and optimizing cutting tool life.

Keywords: Predictive Maintenance, RUL Estimation, LightGBM, Band Saw, Industrial IoT.

SONSUZ DİŞLİLER İÇİN KARŞILAŞTIRMALI GÜVENİLİRLİK ANALİZİ COMPARATIVE RELIABILITY ANALYSIS FOR WORM GEARS

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ÖZET

Sonsuz dişli redüktörler, kompakt tasarımları, geniş dişli oranları, yüksek kendi kendine kilitleme, düşük gürültü ve yumuşak şanzımanları nedeniyle modern makine ve ekipmanların tahriklerinde yaygın olarak kullanılmaktadır. Öte yandan, bu redüktörler, yüksek aşınma ve yıpranma nedeniyle sonsuz dişli üretimi için pahalı malzemelerin kullanılması ile karakterize edilir. Bu nedenle sonsuz dişlilerin kullanım ömrünün değerlendirilmesine ilişkin çalışmalar büyük önem taşımaktadır. Bu çalışmada karşılıklı etkileşimleri olan sonsuz dişlilerin arıza kriterlerine göre diş kırılması ve aşınması karşılaştırmalı hizmet ömrü ve güvenilirlik analizi yapılmıştır. Bu analize dayanarak, sonsuz dişlinin modülünü düzgün seçmek için bir yöntem geliştirilmiştir. Çalışmalar, dişlerin eğilme mukavemetinin artırılmasının hem tek taraflı hem de iki taraflı yüklerle büyük pratik öneme sahip olduğunu göstermiştir. Bu aynı zamanda, çalışma profillerini çalışmayanlarla değiştirerek bir tarafa yüklenen sonsuz dişlilerin hizmet ömrünü önemli ölçüde artırmayı mümkün kılar. Dişin çalışma yüzeyinin yoğun aşınması, kalınlığında bir azalmaya ve sonuç olarak eğilme mukavemeti kaybının bir sonucu olarak kırılmaya neden olabilir. Bu nedenle, dişin eğilme gerilmeleri ve aşınması kriterlerine göre hizmet ömrünün karşılaştırmalı bir analizi özellikle önemlidir. Yük yönünün değiştirilmesinin bronz alaşımlı sonsuz dişli çarkın dişlerinin eğilme dayanımı üzerindeki etkisini incelemek için testler yapıldı. Testler sırasında, her iki yöne yüklendiğinde beş milyon yük döngüsünden sonra bile çalışan ve zıt diş profillerinin arızalanmadığı tespit edildi. Eğilme dayanımı kriterine göre servis ömrü, dişlerin temas dayanımı kriterine göre servis ömrünü yeterince aşarsa, dişlerin çalışma profillerini belirli bir çalışma süresinden sonra çalışmayan profillerle değiştirerek, sonsuz dişlinin servis ömrünü yaklaşık % 30-50 oranında uzatmak mümkündür.

Anahtar Kelimeler: Sonsuz Dişli, Arıza Analizi, Aşınma, Pitting, Diş Kırılması

ABSTRACT

Worm gears are widely used in the drives of today's machinery and equipment thanks to their compactness, large gear ratio, high self-locking, low noise and smooth gearing. On the other hand, these gearboxes are characterized by the use of the expensive material for the worm gear due to high wear. Therefore, studies on the lifetime evaluation of worm gears are of great importance. In this work, a comparative lifetime and reliability analysis of worm gears according to failure criteria tooth breakage and wear, which have mutual interactions, was carried out. Based on this analysis, a method for selecting the module on which the tooth root stress depends was developed. Studies have shown that increasing the bending strength of teeth is of great practical importance both with one-sided and with two-sided loads. This also makes it possible to significantly increase the service life of worm gears loaded on one side by replacing their working flanks with non-working ones. Intensive wear of the tooth's working

surface can lead to a decrease in its thickness and, consequently, to breakage as a result of loss of bending strength. For this reason, a comparative analysis of the service life according to the criteria of bending stresses and wear of the worm gear tooth is of particular importance. In order to study the effect of changing the direction of the load on the bending strength of the teeth of a bronze alloy worm wheel, tests were carried out. During the tests, it was found that the working and opposite tooth profiles do not fail even after five million load cycles when loaded in both directions. If the service life according to the criterion of bending strength sufficiently exceeds the service life according to the criterion of contact strength of the teeth, by replacing the working profiles of the teeth of the wheels with non-working profiles after a certain period of operation, it is possible to increase the service life of worm gears by about 30-50%.

Keywords: Worm Gear, Failure Analysis, Wear, Pitting, Tooth Breakage

THE COLLECTIVE MANAGEMENT ORGANIZATIONS IN ALBANIA. PRESENT EXPERIENCES AND FUTURE CHALLENGES.

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Abstract

The widespread digitization of content in the current internet age has transformed the distribution and use of creative works, raising concerns about the potential exploitation of copyrighted works. Authorization of utilization and fair compensation for authors or right holders are essential components of copyright. The lack of appropriate remuneration diminishes the drive for innovation, posing a challenge for the creative community. Collective management organizations facilitate licensing, protect and administer copyright, and guarantee that authors and rights holders receive equitable compensation. They therefore play an essential role in addressing these issues.

This article explores the vital role of Collective Management Organizations (CMAs) in Albania's creative and cultural sectors. It aims to provide readers with a comprehensive understanding of collective management's role in copyright and related rights in Albania, while emphasizing the essential functions these organizations perform. Nevertheless, it's important to recognise the practical difficulties these organizations face due to evolving market conditions and regulatory frameworks, which can considerably affect their efficiency. By addressing these challenges and improving the functionality of CMAs, there is a potential for increased innovation, better protection of authors and rights holders, and a more robust creative economy. This paper examines the operational mechanisms of CMAs in Albania, emphasizing their impact on rights holders, the economy, and overall social development. In addition, the article offers recommendations to improve the functionality and effectiveness of CMAs in Albania, particularly in the online environment.

Keywords: *collective administration, copyright and related rights, one-stop-shop, remuneration, right holders.*

**A DISCRIMINANT ANALYSIS BASED ON FINANCIAL INDICATORS FOR
CLASSIFYING SME GROWTH IN ALBANIA**

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Abstract

This study investigates the growth patterns of 75 SMEs operating in the trade, construction, services, and manufacturing sectors across various Albanian cities. Utilizing key financial indicators collected from 2010 to 2024, the research examines metrics such as growth rate, return on assets and equity, profit margins, turnover, liquidity, and financial structure. To evaluate performance, the study employs ROC analysis on three growth ratios: Growth Rate of Sales Revenue (GRSR), Rate of Net Profit Growth (RNPG), and Growth Rate of Total Assets (GRTA), with the Area Under the Curve (AUC) serving as a primary performance metric. Findings reveal that profitability and liquidity indicators—specifically, Equity Return Rate (ERT) and Net Profit per Sales (Npsales)—demonstrate high predictive accuracy, particularly within the RNPG metric, with AUCs of 0.896 and 0.856. Additionally, liquidity measures such as Current Liquidity and Quick Liquidity show strong performance, underscoring their significance in growth prediction (GRSR and RNPG). Conversely, variables like Asset Turnover Ratio (ATR), Return on Assets (ROA), and Profit Rate exhibit limited predictive power regarding growth (GRTA). The results highlight the importance for SMEs to prioritize monitoring profitability and liquidity metrics, integrating these into strategic planning and regularly updating indicators to improve growth forecasting amidst evolving market conditions.

Keywords: Financial indicators, ROC analysis, SMEs growth prediction

**İNSAN KAYNAKLARI YÖNETİMİ ALANINDA YAPAY ZEKÂ ÇALIŞMALARININ
KEŞFİ: BIBLİYOMETRİK EŞLEME ANALİZİ**
EXPLORATION OF ARTIFICIAL INTELLIGENCE STUDIES IN HUMAN RESOURCES
MANAGEMENT: BIBLIOMETRIC COUPLING ANALYSIS

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ÖZET

İnsan Kaynakları Yönetimi (İKY), organizasyonların en değerli varlığı olan insan kaynaklarını stratejik bir yaklaşımla yönetme sürecidir. Bu alan, çalışanların yeteneklerinin geliştirilmesi, işe alım, eğitim, performans değerlendirmesi, motivasyon ve ödüllendirme gibi temel işlevleri içerir. İKY'nin etkin yönetimi, organizasyonun hedeflerine ulaşmasını kolaylaştırarak rekabet avantajı sağlamaktadır. Günümüzde yapay zekâ (YZ), bu alanda devrim niteliğinde yenilikler sunmakta ve İKY süreçlerinde önemli bir dönüşüm yaratmaktadır. YZ teknolojileri, veri analitiği, otomasyon ve karar destek sistemleri gibi unsurlar, insan kaynakları işlevlerinin daha etkin ve verimli bir şekilde yürütülmesine olanak tanımaktadır.

Son yıllarda, akademik literatürde YZ ile ilgili çalışmaların sayısında gözle görülür bir artış yaşanmakta olup, bu çalışmalar, YZ'nin sağlık, finans, eğitim ve İKY gibi çeşitli sektörlerdeki uygulamalarını kapsamaktadır. YZ uygulamalarının etkinliği ve potansiyel faydaları, akademik araştırmaların merkezinde yer almakta; bu durum, araştırmacılar için yeni alanlar ve konular oluşturma fırsatları sunmaktadır. İş gücü verimliliğini artırma ve karar verme süreçlerini optimize etme potansiyeli, İKY'de YZ araştırmalarını daha da önemli hale getirmektedir.

Bu çalışma, İKY alanında yapılan YZ çalışmalarının bibliyometrik eşleme analizi metodolojisi ile incelenmesini amaçlamaktadır. Çalışma, Web of Science (WOS) veritabanında yer alan İKY konulu makaleleri analiz ederek, YZ uygulamalarının oluşturduğu alt alanları ve bu alanların entelektüel yapılarını belirlemeyi hedeflemektedir. Araştırmada elde edilecek makaleler, bibliyometrik eşleme analizi çerçevesinde ele alınacaktır. Böylece alandaki bilgi yapıları, yazar iş birlikleri ve atıf ilişkileri detaylı bir şekilde incelenecektir.

Metodoloji olarak, bu çalışma bibliyometrik eşleme analizi yöntemini benimsemekte olup, geniş bir literatür taraması ve veri toplama sürecine dayanmaktadır. "İnsan kaynakları yönetimi" ve "yapay zeka" anahtar kelimeleri kullanılarak gerçekleştirilen arama ile elde edilen makaleler, belirli kriterler çerçevesinde değerlendirilecek; makalelerin atıf ağları oluşturularak, disiplinler arası ilişkiler ve araştırma eğilimleri hakkında kapsamlı veriler toplanacaktır. Bu süreçte, ilişkisel veri analizi teknikleri kullanılarak, YZ'nin İKY üzerindeki etkileri ve geliştirilen alt alanların dinamikleri ortaya konulacaktır.

Sonuç olarak, bu çalışmanın İKY ve YZ arasındaki ilişkiye dair önemli katkılarda bulunması beklenmektedir. Elde edilen bulgular, YZ uygulamalarının İKY süreçlerine entegrasyonunun daha iyi anlaşılmasına olanak tanıyacak ve gelecekteki araştırmalar için yeni yönelimler ortaya koyacaktır. Ayrıca, çalışmanın İKY profesyonelleri için pratik öneriler geliştirerek, alanın bilimsel ve uygulamalı yönlerine katkı sağlanması hedeflenmektedir. Bu analiz, akademik dünyada İKY ve YZ konusundaki tartışmalara zenginlik kazandırmayı amaçlamaktadır.

Anahtar Kelimeler: İnsan Kaynakları Yönetimi, Yapay Zekâ, Bibliyometrik Analiz, Atıf Analizi, Bibliyometrik Eşleme Analizi

ABSTRACT

Human Resources Management (HRM) is the process of strategically managing human resources, an organization's most valuable asset. This field encompasses core functions such as employee talent development, recruitment, training, performance evaluation, motivation, and rewards. Effective HRM management facilitates the organization's achievement of its goals, providing a competitive advantage. Today, artificial intelligence (AI) is offering revolutionary innovations in this field and significantly transforming HRM processes. Elements such as AI technologies, data analytics, automation, and decision support systems enable human resources functions to be carried out more effectively and efficiently.

In recent years, there has been a noticeable increase in the number of studies on AI in the academic literature, covering applications of AI in various sectors such as healthcare, finance, education, and human resources management (HRM). The effectiveness and potential benefits of AI applications are at the center of academic research, providing opportunities for researchers to develop new fields and topics. Its potential to increase workforce productivity and optimize decision-making processes makes AI research in HRM even more important.

This study aims to examine artificial intelligence studies conducted in the field of human resources management using bibliometric coupling analysis. By analyzing articles on HRM in the Web of Science (WOS) database, the study aims to identify the subfields created by AI applications and the intellectual structures of these fields. Articles obtained by searching for the keywords "artificial intelligence" and "human resources management" will be analyzed within the framework of bibliometric coupling analysis. This will provide a detailed examination of the knowledge structures, author collaborations, and citation relationships within the field.

Ultimately, this study is expected to make significant contributions to the relationship between human resources management and artificial intelligence. The findings will allow for a better understanding of the integration of AI applications into HRM processes and reveal new directions for future research. Furthermore, the study aims to contribute to the scientific and applied aspects of the field by developing practical recommendations for HRM professionals. This analysis aims to enrich academic discussions on HRM and AI.

Keywords: Human Resources Management, Artificial Intelligence, Bibliometric Analysis, Citation Analysis, Bibliometric Coupling Analysis.

THE THREATS OF DEEFAKE CONTENTS REGARDING THE PERSONAL RIGHTS: AN ANALYSIS WITHIN THE FRAMEWORK OF THE CONSTITUTION OF REPUBLIC OF TURKEY

Kaan DÜZDEMİR¹

Abstract

Today, advances in artificial intelligence and digital technology have made it possible to imitate individuals' voices and images. This technology is being used as a means of manipulation to deceive individuals and society. As a result of voice and image imitations which reach a level where they cannot be distinguished from the real ones, they seriously threaten individuals' privacy and personal rights. In particular, the use of artificial intelligence-based systems, referred to as *deepfake technology*, can alter a person's image or voice to that of another person, producing fake videos that are very close to the reality. Deepfake was initially used for entertainment purposes when it first emerged. However, the misuse of its intended purpose poses a serious risk in terms of violating individuals' privacy and causing social disinformation. In accordance with the principles of natural and positive law, it is imperative that individuals' privacy and personal rights are protected comprehensively. The inadequacy of legal regulations to prevent the violation of individuals' privacy and personal rights through the use of deepfake technology is an undeniable reality. For this reason, legal regulations must be implemented to prevent the violation of individuals' fundamental rights as a result of current technological developments. Consequently, in the digital age, the protection of individuals' privacy and personal rights is becoming increasingly complex, giving rise to a need for both individual and constitutional protection. This study will examine the effects of deepfake technology on privacy and personal rights within the framework of the Constitution of Turkish Republic.

Keywords: Deepfake, Digital Disinformation, Privacy of Private Life, Personality Rights, 1982 Constitution.

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**AVRUPA İNSAN HAKLARI MAHKEMESİ'NİN SOMUT KARARLARI
BAĞLAMINDA MÜLKİYET HAKKININ İNCELENMESİ**

**ANALYSIS OF THE RIGHT TO PROPERTY IN THE CONTEXT OF CONCRETE
DECISIONS OF THE EUROPEAN COURT OF HUMAN RIGHTS**

Kaan Düzdemir¹

Özet

Avrupa İnsan Hakları Mahkemesi (AİHM) Avrupa İnsan Hakları Sözleşmesi (AİHS), 1950 yılında Roma şehrinde imzalanmıştır. Buna karşın, sözleşme üç sene sonra yani 1953 yılında yürürlüğe girmiştir. AİHS, bireylere ilişkin birçok hak ve hürriyeti içeriğine dahil etmiştir. Ancak, mülkiyet hakkı AİHS kapsamında doğrudan düzenlenmemiştir. Yine de bireyler mülkiyet hakkı açısından korunmasız bırakılmamıştır. Gerçekten de AİHS Ek 1 No'lu Protokol'ün 1. maddesinde mülkiyet hakkının korunmasına yönelik hükümler bulunmaktadır. Bu düzenleme çerçevesinde mülkiyet hakkının ihlaline ilişkin bir iddianın değerlendirilmesinde mahkeme “mülkten yoksun bırakma”, “mülkiyetin kullanımının kontrolü” ve “mülkiyete saygı yükümlülüğü” olmak üzere üç farklı kıstası esas almak suretiyle bir değerlendirme yapacaktır. Çalışmada, Türkiye ve AİHS Ek 1 No'lu protokole taraf olan ülkeler aleyhine verilen kararlar, AİHM tarafından mülkiyet hakkına ilişkin bir uyuşmazlıkta esas alınan içtihatların uygulanma biçimi ve Avrupa İnsan Hakları Mahkemesi'nin “mülkten yoksun bırakma”, “mülkiyetin kullanımının kontrolü” ve “mülkiyete saygı yükümlülüğü” şeklindeki üçlü ayrımını analiz ederek, her bir müdahale türünün hukuka uygunluk kriterleri mahkeme kararları çerçevesinde tartışılacaktır.

Anahtar Kelimeler: Avrupa İnsan Hakları Mahkemesi, Mülkiyet Hakkı, AİHS Ek 1 No'lu Protokol.

Abstract

The European Court of Human Rights (ECtHR) The European Convention on Human Rights (ECHR) was signed in Rome in 1950. However, the convention entered into force three years later, in 1953. The ECHR encompasses many rights and freedoms pertaining to individuals. However, the right to property is not directly regulated under the ECHR. Nevertheless, individuals are not left without protection in terms of their right to property. Indeed, Article 1 of Protocol No. 1 to the ECHR contains provisions for the protection of the right to property.

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Within the framework of this provision, when assessing a claim for a violation of the right to property, the court will base its assessment on three different criteria: "deprivation of property," "control over the use of property," and "obligation to respect property." This study will analyze the legality criteria for each type of intervention within the framework of court decisions, analyzing the decisions rendered against Turkey and countries party to Protocol No. 1 to the ECHR, the application of the jurisprudence adopted by the ECtHR in a dispute concerning property rights, and the European Court of Human Rights' tripartite distinction of "deprivation of property," "control of the use of property," and "obligation to respect property."

Keywords: European Court of Human Rights, Right to Property, Protocol No. 1 to the ECHR.

ENHANCING LEARNERS' GRAMMAR PROFICIENCY WITH THE HELP OF INFORMATION AND TELECOMMUNICATION TECHNOLOGIES IN ENGLISH EDUCATION

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Annotation. The integration of information and telecommunication technologies (ICT) into English language teaching has transformed the process of developing grammatical skills, making instruction more interactive, efficient, and learner-centered. This study examines how ICT tools—such as digital platforms, mobile applications, online communication technologies, and multimedia resources – enhance the acquisition, practice, and consolidation of English grammar.

The article presents the results of a pedagogical experiment on the use of information and communication technologies (ICT) for developing English grammar skills among upper-secondary and college-level students in Astana, Kazakhstan. The research involved 98 learners from Comfort School No. 110 and School-Lyceum No. 78 who initially demonstrated low-to-intermediate (A2–B1) proficiency and serious difficulties in transferring grammar knowledge into real communication. From September to November 2025, the experimental group (n=52) studied grammar through a combination of traditional methods and systematically integrated ICT tools, while the control group (n=46) followed the conventional programme. Pre- and post-testing, analysis of productive speech samples, motivation questionnaires, and classroom observations revealed that the experimental group significantly outperformed the control group in grammatical accuracy (+23.3 vs. +10.7 points), error reduction in speaking and writing (-42%), and motivation indicators. The study provides an extended overview of digital resources actually used and offers detailed methodological recommendations for teachers.

Overall, ICT-based instruction proves to be a powerful pedagogical approach for enhancing grammatical skills in English. The study concludes that digital technologies not only diversify classroom practice but also create favorable conditions for sustained cognitive engagement, independent learning, and improved grammatical proficiency. The findings recommend broader implementation of ICT tools across English language curricula to support active learning, personalization, and effective grammar acquisition.

Keywords: English grammar skills, information and communication technologies (ICT), interactive platforms, immediate feedback, motivation, communicative competence.

YARNS OF ARTIFICIAL INTELLIGENCE: A DEEP LEARNING APPROACH FOR TEXTILE WASTE GENERATION AND MANAGEMENT IN SOME AREAS OF DHAKA

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ABSTRACT

The garment industries produce a huge volume of both material and process waste, and it is a serious environmental and economic problem; effective management and reduction require prompt and correct classification and prediction at the preliminary production stages. This paper proposes a multi-model Artificial Intelligence (AI) framework to solve the problem of garment waste streams classification and quantity prediction. To classify waste images, we use Deep Learning (DL) models such as MobileNetV2, DenseNet121, and EfficientNetB0 (with enhanced variants) and train them with techniques (data augmentation, transfer learning) and hyperparameter optimization to achieve the best possible results (measures of performance, such as accuracy, F1-score, and R^2). Machine Learning (ML) models (Random Forest, Gradient Boosting) and a special-purpose Artificial Neural Network (ANN) are used to predict waste quantities and their efficacy. The findings show that the DL models perform better at classification with the better EfficientNetB0 architecture reaching a maximum validation accuracy of 94.67%. The ANN model was also found to have an excellent predictive performance with an R^2 value approaching 99.78% with smaller data sets, whilst still being 95.17% after being improved with larger data sets. The proposed multi-AI framework is confirmed as a high-quality and efficient solution to the specific detection and estimation of garment waste, which can provide important and constructive data-driven outputs to the garment industry in terms of reducing environmental harm and improving the management of industrial streams of waste.

KEYWORDS

Artificial Intelligence, Deep Learning, Machine Learning, Waste management, Garments sustainability.

FINANCIAL REGULATION AND CORPORATE GOVERNANCE IN THE CONTEXT OF THE BRUSSELS EFFECT

Prof. Asoc. Kristaq Gjyli¹

ABSTRACT

The *Brussels Effect* refers to the European Union's regulatory power that shapes global markets and industries, influencing not only member states but also non-EU countries. This abstract presents a study on the EU's impact on financial regulation and corporate governance, examining how its laws, standards, and directives affect both member and non-member states. Specifically, the research focuses on the influence of EU regulations, such as *MiFID II* and *Solvency II*, on the global financial landscape, including non-EU financial institutions and markets.

Furthermore, the paper explores the broader implications of EU corporate governance rules, including shareholder rights, transparency, and executive compensation, and how these standards have reshaped corporate practices outside the EU. It will assess the strengths and limitations of the *Brussels Effect*, investigating whether EU regulations promote global alignment with European standards or create challenges for non-EU states with different legal frameworks.

Finally, the abstract addresses the future of the *Brussels Effect* in light of ongoing global shifts, such as Brexit and the evolving nature of international trade. This study aims to provide valuable insights into the future trajectory of EU influence, contributing to the broader discourse on regulatory globalization in financial markets and corporate governance.

This paper will be presented at the international conference "The Brussels Effect: Strengths, Limits, and the Future of EU Influence," organized by the Public Department of the Faculty of Law, University of Tirana, in cooperation with the Faculty of Jurisprudence, University of Turin, and aims to foster an interdisciplinary discussion on the evolving role of EU regulations in global governance.

Keywords: *Brussels Effect, Financial Regulation, Corporate Governance, EU Directives*

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SIÇANLARA UYGULANAN SODYUM PİRİTİONİN HEMATOLOJİK PARAMETRE DÜZEYLERİNE ETKİSİ

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ÖZET

Bu tez çalışması içerisinde 24 ve 96 saat dilimlerinde (akut sürelerde) iki farklı dozda olmak üzere 35mg ve 70 mg sodyum piriton'un (NaPT) Wistar albino sıçanlar üzerinde hematolojik kan parametrelerdeki değişimleri incelenmiştir. Tek doz olarak NaPT ve kontrol gruplarına salın uygulamaları yapılmış ve intrakardiyak delinme ile ETDA içeren tüplere kan örnekleri toplanmıştır. Kan örnekleri, hematolojik parametrelerin belirlenmiş ve ölçüm sonuçları kontrol grubuna göre grup içi ve gruplar arasındaki farklılığın belirlenmesi için istatistiksel analizleri yapılmıştır. Bu çalışmada, sıçanlara intraperitoneal yolla uygulanan NaPT'nin (35 ve 70 mg/kg, ip) ile 24 ve 96 saatlik sürelerde hematolojik değişimler incelenmiştir. Analizler, 24 saatlik sürede her iki doz grubunda WBC ve lenfosit değerlerinde azalma, 96 saatlik ölçümlerde ise her iki doz grubunda artış olduğunu ve bu değişimlerin istatistiksel olarak anlamlı ($p<0,05$) olduğunu göstermiştir. Yine çalışmada 96 saatlik ölçümlerde THR düzeylerindeki artış anlamlıdır($p<0,05$). RBC, Htc ve Hb düzeylerinde gruplar arasında anlamlı bir farklılık bulunmamaktadır.

Steroid hormonlarının WBC üzerinde düşürücü etkisi olduğu bilinmektedir. Mevcut çalışmada, 24 saatlik sürede gözlenen WBC azalmasının kortikosteron artışıyla ilişkili olabileceği, 96 saatte ise kortikosteron seviyelerinin normale dönmesi WBC artışından sorumlu olabileceği düşünülmüştür. THR düzeylerindeki artışın sitokin düzeylerindeki değişimlerin ve histopatolojik olarak konjesyon ve kanamalara bağlı olarak meydana gelmiş olabileceği düşündürtümüştür. Aynı zamanda bu araştırmanın bulguları, sıçanlara intraperitoneal olarak uygulanan NaPT'nin akut sürede organizmada hayatta kalmayı destekleyen adaptasyon mekanizmalarını tetiklediğini düşündürmektedir. Elde edilen veriler, fizyolojik değişimlerin hematolojik parametreler üzerinde belirgin etkiler yaratabileceğini göstermektedir.

Anahtar Kelimeler: Hematolojik parametre, Sıçan, Sodyum piriton.

ABSTRACT

In this thesis, changes in hematological blood parameters were investigated in Wistar albino rats after two different doses of 35 mg and 70 mg sodium pyrithione (NaPT) over 24 and 96 hours (acute periods). Saline was administered as a single dose to the NaPT and control groups, and blood samples were collected into EDTA-containing tubes via intracardiac puncture. Hematological parameters were determined in blood samples, and the measurement results were statistically analyzed to determine the differences within and between groups compared to the control group. In this study, hematological changes were investigated over 24 and 96 hours with intraperitoneal NaPT (35 and 70 mg/kg, ip) administered to rats. Analyses showed that WBC and lymphocyte values decreased in both dose groups over the 24-hour period, while increases occurred in both dose groups at 96 hours, and these changes were statistically significant ($p<0.05$). The increase in THR levels was also significant in the 96-hour measurements in the study ($p<0.05$). There were no significant differences between the groups in RBC, Htc, and Hb levels.

Steroid hormones are known to have a lowering effect on WBC. In the current study, it was thought that the decrease in WBC observed over the 24-hour period may be related to an increase in corticosterone, while the return of corticosterone levels to normal at 96 hours may be responsible for the WBC increase. The increase in THR levels may have been due to changes in cytokine levels and histopathological evidence of congestion and hemorrhage. Furthermore, the findings of this study suggest that intraperitoneal administration of NaPT to rats triggers adaptation mechanisms that support survival in the acute phase. The data obtained indicate that physiological changes can have significant effects on hematological parameters.

Keywords: Hematological parameter, Rat, Sodium pyrithione.

YÖNETİM BİLİŞİM SİSTEMLERİNDE DİJİTAL PAZARLAMA STRATEJİLERİNİ ETKİLEYEN YAPAY ZEKA DESTEKLİ UYGULAMALAR VE YÖNTEMLER

ARTIFICIAL INTELLIGENCE-SUPPORTED APPLICATIONS AND METHODS
AFFECTING DIGITAL MARKETING STRATEGIES IN MANAGEMENT
INFORMATION SYSTEMS

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ÖZET

Teknolojinin gelişimi ve şirketlerin internet kanalları aracılığıyla hedef kitleye ulaşma imkanları, marka tanınırlığı oluşturmaları, satış hedeflerini yakalamak ve planlamak gibi süreçleri dijital pazarlamada önemli bir dönüşüm sağlamıştır. Bu dönüşüm sürecinin en etkili unsurlarından birisi de yapay zeka teknolojileridir. Birçok alanda olduğu gibi dijital pazarlama alanında da yapay zeka etkili olmaktadır. Günümüz yapay zeka teknolojileri sayesinde dijital pazarlama alanında; SEO optimizasyonları, anahtar kelime analizleri, reklam stratejilerinin oluşturulması, içerik üretimi, sanal asistanlarla müşteri iletişimi, trendlerin tespiti, müşteri deneyimlerine bağlı kişiselleştirme olanakları, reklam metinlerinin optimizasyonu gibi pazarlama stratejileri uygulanabilmektedir. Yönetim bilişim sistemleri bu teknolojilerin kurumsal yapılara entegre edilmesinde kritik bir rol oynamakta; veri yönetimi, analitik altyapı, karar destek mekanizmaları ve süreç otomasyonu gibi temel alanlarda yapay zeka temelli yaklaşımların uygulanabilirliğini sağlamaktadır. Bu doğrultuda çalışmanın amacı; dijital pazarlama stratejilerini şekillendiren yapay zeka destekli uygulama ve yöntemleri yönetim bilişim sistemleri bakış açısıyla incelemek ve bu teknolojilerin işletmelerin pazarlama karar süreçlerine etkilerini değerlendirmektir. Çalışma kapsamında dijital pazarlama stratejilerinin kavramsal temeli açıklanarak Google Ads Smart Bidding, Google Analytics 4 (GA4), Meta Advantage+, GPT-5 ve Gemini gibi günümüzde kullanılan yapay zeka uygulamalarının dijital pazarlama alanındaki kullanımları ve yöntemleri yönetim bilişim sistemleri açısından incelenecektir.

Anahtar Kelimeler: Yönetim Bilişim Sistemleri, Dijital Pazarlama Stratejileri, Yapay Zeka.

ABSTRACT

The advancement of technology and companies' ability to reach their target audience through internet channels has brought about a significant transformation in digital marketing, enabling them to build brand awareness, achieve sales targets, and plan effectively. One of the most effective elements of this transformation process is artificial intelligence (AI) technology. As in many other fields, AI is also effective in the field of digital marketing. With today's artificial intelligence technologies in the field of digital marketing, marketing strategies such as SEO optimization, keyword analysis, advertising strategy development, content creation, customer communication with virtual assistants, trend identification, personalization options based on customer experiences, and advertising text optimization can be

implemented. Management information systems play a critical role in integrating these technologies into corporate structures; they ensure the applicability of AI-based approaches in fundamental areas such as data management, analytical infrastructure, decision support mechanisms, and process automation. Accordingly, the aim of this study is to examine AI-supported applications and methods that shape digital marketing strategies from a management information systems perspective and to evaluate the impact of these technologies on businesses' marketing decision-making processes. In this study, the conceptual basis of digital marketing strategies will be explained, and the uses and methods of artificial intelligence applications currently in use, such as Google Ads Smart Bidding, Google Analytics 4 (GA4), Meta Advantage+, GPT-5, and Gemini, in the field of digital marketing will be examined from the perspective of management information systems.

Keywords: Management information systems, digital marketing strategies, artificial intelligence.

ASSESSMENT OF RAINWATER HARVESTING SYSTEMS AND COMMUNITY PERCEPTIONS IN THE SOUTHWESTERN COASTAL BANGLADESH

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ABSTRACT

In the southwestern coastal region of Bangladesh, where salinity intrusion and tidal surges make groundwater unsuitable, rainwater serves as a vital drinking water source. This study assesses rainwater harvesting system (RWHS) quality, operation, and maintenance practices, public perceptions of health risks, and local authorities involvement. Data were collected through two questionnaires from 66 respondents and observations of 55 RWHS across five unions in Koyra Upazila. After statistical analysis, findings reveal that most systems are well-equipped and maintained, exhibiting moderate to high hygiene standards. However, dust, leaves, rust, and excreta on catchment surfaces and storage tanks reduce hygiene levels. Despite following hygiene practices such as first flushing and component washing, 87.3% of systems showed microbial contamination potential, while 54.5% had chemical contamination, mainly due to dust and roofing materials. Water availability is a challenge, with 67% of respondents lacking year-round access, and relying on ponds and tube wells during shortages. About 84.8% do not treat water before consumption, often using simple sieving methods and the majority have no facility for microbial contamination even test and odor regularly. While 13.7% reported skin

allergies and respiratory issues, most perceived no significant health risks. Additionally, 13.6% noted occasional musty, rotten, or plastic odors in stored rainwater. Despite this, 95.5% believe rainwater is safer than other sources, and 84.8% see no seasonal risks. Local authorities' involvement in improving water quality is minimal, with 72.7% of respondents reporting no intervention. More than half expressed dissatisfaction with local governance in RWHS management. The findings highlight the need for improved maintenance, public awareness, and stronger local authority involvement to enhance the safety and sustainability of rainwater harvesting systems in coastal Bangladesh.

Keywords: Rainwater Harvesting System (RWHS), Water Quality, Health Risks, Community Perception, Local Governance.

THE ENDURING VALUE OF HO CHI MINH'S IDEOLOGY IN THE
CONTEMPORARY ERA

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Abstract: *This study offers a systematic analysis of the concept, structure, and enduring significance of Ho Chi Minh's Ideology within contemporary Vietnamese political and social life. By clarifying the foundational role of Ho Chi Minh's Ideology in shaping the revolutionary path of Vietnam across different historical periods, the article examines the evolution of the Communist Party of Vietnam's theoretical understanding of this ideological system. It highlights the continued relevance and vitality of Ho Chi Minh's Ideology in the current era of national development, modernization, and integration. Furthermore, the paper critically refutes distorted and hostile viewpoints that seek to undermine the ideological foundation of the Communist Party of Vietnam, affirming the scientific, revolutionary, and humanistic nature of Ho Chi Minh's Ideology as the guiding compass for the Party's leadership and the nation's long-term strategic orientation.*

Keywords: *Ho Chi Minh's Ideology; ideological foundation; guiding compass; enduring values; Vietnamese revolution*

PIYANODA EZBER ÇALMADA KULAK EĞİTİMİNİN ROLÜ: DUYUŞSAL ÖN ALGI VE MOTOR BELLEK İLİŞKİSİ

THE ROLE OF EAR TRAINING IN PLAYING FROM MEMORY ON THE PIANO:
THE RELATIONSHIP BETWEEN AURAL ANTICIPATION AND MOTOR MEMORY

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ÖZET

Bu çalışma, piyanoda ezber çalmada kulak eğitiminin belirleyici rolünü inceleyen betimsel tarama modelinde bir kaynak araştırmasıdır. Çalışmanın amacı, duyuşsal ön algı ile motor bellek arasındaki etkileşimin, piyano performansındaki ezber sürecine nasıl yön verdiğini ortaya koymaktır. Piyanoda ezber çalmanın sadece yoğun performans tekrarlarıyla oluşturulan bir beceri değil; bilişsel, duyuşsal ve motor birlikteliğe dayanan bir süreç olduğu bilinmektedir. Bu bağlamda kulak eğitimi; müzikal yapıların duyularak anlaşılması, zihinsel olarak temsil edilmesi ve performans sırasında hatırlanması açısından ana unsur olarak öne çıkmaktadır.

Duyuşsal ön algı, ezber sürecinin temel taşlarından biridir. Dolayısıyla duyuşsal ön algıya sahip bir piyanistin çalmadan önce müziği zihninde duyabilmesi, melodik ve armonik ilerleyişi ön görebilmesi ve bu sayede eserin duyuşsal modelini içsel olarak oluşturabilmesi beklenir. Piyanistin bu içsel modelde motor hareketleri, yalnızca kas hafızasına değil aynı zamanda duyuşsal beklentilerin yönlendirdiği geri bildirim mekanizmalarına da dayanır. Bu nedenle güçlü bir duyuşsal ön algı; performans sürecinde yaşanan dikkat dağınıklığı, teknik zorlanma veya hata durumlarında piyaniste duyuşsal bir rehber olarak eşlik eder.

Müzik teorisi, solfej ve dikte gibi kulak eğitimi bileşenleri, hem motor bellek temelli ezber hatalarını önemli ölçüde azaltmakta hem de müziksel materyalin yapısını çözümleme becerisi kazandırmakta önemli rol oynar.

Çalışmanın sonucu, kulak eğitiminin piyanoda ezber çalma sürecinde yalnızca tamamlayıcı bir öğe değil, aynı zamanda önemli bir pedagojik bileşen olduğunu ortaya koymaktadır. Bu sonuç, duyuşsal süreçlerin performans pedagojisinde daha sistemli ve bilinçli şekilde eğitime dâhil edilmesi gerekliliğini ön plana çıkarmıştır. Buna bağlı olarak, müzik teorisi ve solfej dersleriyle enstrüman derslerinin paralellüğünün sağlanması ve müfredatın dengeli bir şekilde oluşturulması önerilmektedir.

Anahtar Kelimeler: Piyano, Piyano Eğitimi, Kulak Eğitimi, Ezber Çalma

ABSTRACT

This study is a source-based research conducted within a descriptive survey model, examining the determining role of ear training in playing from memory on the piano. The aim of the study is to reveal how the interaction between aural anticipation and motor memory shapes the memorization process in piano performance. It is known that playing from memory on the piano is not merely a skill formed through intensive performance repetitions, but a process based on

the integration of cognitive, aural, and motor components. In this context, ear training emerges as a central element in terms of understanding musical structures through listening, mentally representing them, and recalling them during performance.

Aural anticipation is one of the fundamental pillars of the memorization process. Accordingly, it is expected that a pianist who possesses aural anticipation is able to hear the music internally before playing, foresee the melodic and harmonic progression, and thereby construct an internal aural model of the work. Within this internal model, the pianist's motor actions rely not only on muscular memory but also on feedback mechanisms guided by aural expectations. For this reason, strong aural anticipation accompanies the pianist as an aural guide during performance, particularly in moments marked by distraction, technical difficulty, or error.

Ear training components such as music theory, solfège, and dictation play a significant role both in substantially reducing errors based on motor memory dependent memorization and in developing the ability to analyze the structure of musical material.

The outcome of the study reveals that ear training is not merely a complementary element but also an essential pedagogical component in the process of playing from memory on the piano. This result underscores the necessity of incorporating aural processes into performance pedagogy in a more systematic and conscious manner. In connection with this, it is recommended that parallelism between music theory/solfège courses and instrumental lessons be ensured and that the curriculum be structured in a balanced way.

Keywords: Piano, Piano Education, Ear Training, Playing from Memory

**RESTORASYON AMAÇLI HİDROLİK KİREÇ VE KİREMİT TOZU ESASLI ROMA HARÇLARINDA KEÇİ KILI KATKISININ YAPISAL DAVRANIŞA ETKİSİ
THE EFFECT OF GOAT HAIR ADDITION ON STRUCTURAL BEHAVIOR IN
HYDRAULIC LIME AND TILE DUST BASED ROMAN MORTARS FOR
RESTORATION PURPOSES**

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ÖZET

Bu çalışmada, Roma harçlarının mekanik ve fiziksel performansını iyileştirmek amacıyla doğal katkıların etkisi araştırıldı. Antik dönemde dayanımını artırmak amacıyla harca birçok farklı doğal katkılar ilave edilmiştir. Çalışmada hidrolik kireç, kiremit tozu, bazalt tozu ve kumdan oluşan geleneksel harç bileşimine keçi kılı ilave edilerek, lif takviyesinin ve puzolanik etkinin malzeme özelliklerine katkısı değerlendirildi. Numune üretiminde 40×40×160 mm boyutlarında prizma kalıplar kullanılarak; karışım, 300 g hidrolik kireç, 300 g bazalt tozu, 400 g kiremit tozu, ırmak kumu ve 400 g su ilave edildi. Referans numuneye keçi kılı eklenmedi, toplam bağlayıcı miktarının %1 oranında, %2 ve %3'ü oranlarında hacmin bir fraksiyonu olarak keçi kılı ilave edildi. Yaklaşık 12 mm uzunluğunda sahip olan keçi kılı, harcın bağlayıcılık kapasitesini artırması ve mekanik özelliklerinin iyileştirilmesine katkı sağladı. Farklı oranlarda harca ilave edilen Keçi kılı katkılı harç dayanımı, mekanik mukavemeti ve mikro yapıya etkileri açısından deneylerle analiz edildi. Basınç dayanım testine göre %1 keçi kılı ilave edilen harç numunesi 3,68 MPa değeri vererek en yüksek dayanımı, eğilme testine göre ise %3 keçi kılı ilave edilen harç numunesi 2,20 MPa değeri ile en yüksek dayanımı göstermiştir. Sonuç olarak elde edilen bulgular, kullanılan hidrolik kireç, kiremit tozu, bazalt tozu, kum ve keçi kılı katkılı Roma harcının yeniden ele alınarak, daha dayanıklı, çevreci ve özgün nitelikte restorasyon harçlarının geliştirilmesine ve onarımda kullanılmasına bilimsel temel oluşturacaktır.

Anahtar Kelimeler: Restorasyon harçları, Roma harcı, Hidrolik kireç, Keçi Kılı.

ABSTRACT

This study investigated the effects of natural additives to improve the mechanical and physical performance of Roman mortars. Many different natural additives were added to mortar in ancient times to increase its strength. In this study, goat hair was added to a traditional mortar

composition consisting of hydraulic lime, tile dust, basalt dust, and sand to evaluate the contribution of fiber reinforcement and pozzolanic effects to the material properties. The mixture was prepared using prism molds measuring 40×40×160 mm in size. The mixture contained 300 g of hydraulic lime, 300 g of basalt dust, 400 g of tile dust, river sand, and 400 g of water. No goat hair was added to the reference sample; instead, goat hair was added as a volume fraction at 1%, 2%, and 3% of the total binder amount. The approximately 12 mm-long goat hair contributed to the mortar's binding capacity and improved mechanical properties. The strength, mechanical strength, and microstructure of mortars containing goat hair added at different ratios were analyzed through experiments. According to the compressive strength test, the mortar sample containing 1% goat hair yielded the highest strength, 3.68 MPa, while the mortar sample containing 3% goat hair yielded the highest strength, 2.20 MPa, in the flexural test. The findings will provide a scientific basis for reconsidering the Roman mortar containing hydraulic lime, tile dust, basalt dust, sand, and goat hair, and for developing more durable, environmentally friendly, and original restoration mortars and their use in repairs.

Keywords: Restoration mortars, Roman mortar, Hydraulic lime, Goat Hair.

**THE DYNAMICS OF EXPECTATIONS AND REALITIES IN THE
IMPLEMENTATION OF GREEN FINANCE IN INDONESIA'S TRANSITION TO
INDUSTRY 5.0: A SYSTEMATIC LITERATURE REVIEW**

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ABSTRACT

Green finance is a key element in supporting Indonesia's transition to Industry 5.0, which emphasizes the synergy between advanced technology, sustainability, and a human-centered approach. As a financial instrument, green finance provides funding for environmentally friendly projects such as renewable energy, waste management, and green technology innovation. Despite its significant potential, the implementation of green finance in Indonesia faces various challenges, including a lack of harmonized regulations, limited access for SMEs, low green finance literacy, and minimal investment in green technology. Through a systematic literature review, this study identifies the gap between ideal expectations and the reality of green finance implementation in Indonesia. Expectations include inclusive funding, regulatory strengthening, and the adoption of sustainability principles across all industrial sectors. However, in reality, green finance adoption remains concentrated in large-scale projects, with challenges such as insufficient green technology support, immature policy coordination, and greenwashing practices. This study also explores the role of key actors, such as the government, industry, and academia, in accelerating the green transformation. Policy recommendations include strengthening green finance regulations, providing fiscal incentives for technological innovation, and enhancing cross-sector collaboration. This research contributes to the development of green finance theory while offering practical insights for policymakers and industry players to accelerate the transition toward a sustainable economy in the Industry 5.0 era.

Keywords: Green Finance, Green Innovation, Sustainability, Industry 5.0

PASSENGERS PERCEPTION AND SATISFACTION TOWARD THE RAILWAY TRANSPORT SYSTEM IN BANGLADESH

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ABSTRACT

This study investigates passengers' perception and satisfaction regarding the railway transport system in Bangladesh, focusing specifically on the Rajshahi–Dhaka corridor. The recommissioning of the dual-gauge railway service has substantially increased passenger mobility along this route, underscoring the need to evaluate how service quality aligns with rising demand. As passenger mobility intensifies, improvements in railway services become increasingly essential, as perceptions of service quality shape overall satisfaction and influence travel behavior. Passenger perception is shaped by several interconnected factors, including individual travel behavior, mobility patterns, journey frequency, station-area road infrastructure, and the overall experience of using railway services.

To examine these multidimensional perceptions, a convenience-sampling survey was conducted across station premises and onboard running trains along the Rajshahi–Dhaka route. A total of 260 responses were collected, capturing passengers' assessments of existing facilities and service delivery conditions. The analysis reveals that passengers hold a moderately positive perception of the current railway infrastructure and associated services. More importantly, several perception indicators demonstrate statistically meaningful relationships with the quality of existing railway facilities, indicating that infrastructure conditions significantly influence how passengers evaluate service performance.

The findings highlight the critical link between rising passenger mobility and expectations regarding service enhancement. While the recommissioning of dual-gauge operations has contributed to increased accessibility and route efficiency, gaps remain in aligning infrastructure quality with passenger needs. By identifying the key elements shaping passenger perception and satisfaction, this study provides evidence-based insights that can support targeted improvements in railway service delivery and long-term transport planning in Bangladesh.

Keywords: Passenger, perception, railway transportation, service quality, railway

EVALUATION OF EDIBLE LANDSCAPES IN URBAN AREAS IN TERMS OF FOOD SAFETY

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ABSTRACT

Edible landscaping practices in cities add value to green spaces by supporting local food access in addition to their aesthetic function. Cultivating fruit trees, aromatic plants, and certain vegetable species in urban green areas can strengthen urban food production and human–nature interaction. However, urban environments do not always provide safe conditions for food production. Traffic congestion, industrial air pollution, pesticide and fertilizer use, inappropriate irrigation water, and intense human–animal interaction may pose risks of chemical, microbiological, and physical contamination in edible plants.

This study aims to evaluate edible plants in terms of food safety within urban landscapes. The findings indicate that pesticide and heavy metal residues may accumulate in plant tissues, irrigation water may increase the risk of microbial contamination, and dust and particulate matter may accumulate on leaf surfaces. The level of risk may vary depending on plant species, location, and maintenance practices.

To minimize these risks, careful species and site selection, limiting pesticide use, implementing biological and mechanical pest control, using safe irrigation water, and ensuring that compost is fully matured are recommended. It is important to avoid planting edible species near roadsides or in areas influenced by industrial activities. Local governments can support safe consumption by establishing specific maintenance protocols for edible landscapes and by providing public information and guidance in community spaces.

Keywords: Edible landscape; Food safety; Urban landscape; Edible plants

DEVELOPMENT OF A GOLD NANOPARTICLE-BASED LATERAL FLOW TEST FOR RAPID DETECTION OF VIBRIO CHOLERA SPECIES

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ABSTRACT

Cholera, caused by *Vibrio cholerae* (*V. cholerae*) spp., remains a significant global health issue, particularly in regions with inadequate water and infrastructure. Each year, cholera affects an estimated 1.3 to 4.0 million people and results in approximately 21,000 to 143,000 deaths. The economic impact is also substantial; global losses can reach up to \$3 billion annually due to healthcare expenses and lost the productivity. Current diagnostic methods, including culture-based techniques and PCR, are accurate but costly and require advanced laboratory facilities, delaying diagnosis in resource-limited areas. The proposed methodology involves the synthesis of gold nanoparticle-polymer composites (AuPNs) for signal amplification in lateral flow assays (LFAs). These AuPNs are conjugated with specific monoclonal antibodies using an EDC/NHS linker within the conjugate pad. Anti-rabbit, anti-mouse, antibodies are immobilized on the control line of the nitrocellulose membrane. The covalent bonding between the AuPNs and detection antibodies leads to the accumulation of gold nanoparticles, resulting in a visible red line on the strip, (figure1). The developed lateral flow is expected to demonstrate high sensitivity and specificity for detecting *V. cholerae*. Initial optimization studies have achieved a detection limit of 10^3 CFU/mL, but further improvement efforts are ongoing. Designed to be Rapid, cost-effective, and user-friendly, the test delivers results within minutes with minimal equipment. Utilizing gold nanoparticle technology, the test is expected to significantly contribute to cholera outbreak management. The lowest detection limit of the currently available *V. cholerae* rapid tests is reported to be 10^7 CFU/mL. Our developed lateral flow, with a much lower detection limit of 10^3 CFU/mL, is much more sensitive and specific compared to other, which is thought to be due to the synthesized gold nanomaterials. Considering that cholera is still prevalent in Third World countries, the locally developed *V. cholera* rapid test is expected to be a strong alternative to its counterparts.

Keywords: *V.cholerae* spp; Lateral flow; Point of Care (POC); Gold nanoparticle (AuPNs).

**INNOVATIVE TEACHING PARADIGMS FOR GENERATION Z IN INDIAN
HIGHER EDUCATION: BRIDGING TRADITION AND TECHNOLOGY UNDER
NEP 2020**

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Abstract

The National Education Policy (NEP) 2020 reimagines Indian higher education for a generation that has never known a world without the internet. Generation Z learns differently—they value flexibility, personalization, and learning that feels connected to real life. NEP 2020 acknowledges this shift and aligns academic structures with the habits and expectations of digitally native students. The policy's digital architecture forms the core of this transformation. Platforms such as the National Educational Technology Forum (NETF), PM eVidya, DIKSHA, SWAYAM, and the National Digital Education Architecture (NDEAR) create a broad learning ecosystem where students can access material in multiple formats—videos, interactive modules, virtual classrooms, or gamified tasks. Instead of a single rigid pathway, learners have choices that match their pace and interests, making higher education more inclusive and adaptable.

Faculty development is a crucial component of this shift. NEP 2020 emphasizes equipping educators with digital pedagogy skills so they can guide interactive, student-centered classrooms. This change is not merely technological; it alters the tone of teaching itself. Learning becomes more collaborative, more conversational—something that resonates with how today's students think and engage.

The policy also confronts persistent challenges. Digital access remains uneven, especially across rural and low-income regions. By promoting multilingual resources, open-source tools, and interoperable systems, NEP 2020 attempts to reduce these gaps and ensure that technology becomes a bridge rather than a barrier.

Ultimately, NEP 2020's digital thrust encourages the development of critical thinking, problem-solving, and lifelong learning—skills essential for a global, fast-evolving workforce. By blending technology with thoughtful pedagogy, the policy transforms the traditional classroom into a dynamic, participatory space that mirrors the curiosity, pace, and aspirations of Generation Z.

Keywords: Generation Z, NEP 2020, digital pedagogy, Indian higher education, educational technology, inclusive learning, digital literacy

KÜLTÜR, SANAT VE LEZZETİN BULUŞTUĞU ŞEHİR - ERZİNCAN: COĞRAFI İŞARET TESCİLLİ ÜRÜNLER

THE CITY WHERE CULTURE, ART, AND FLAVOR MEET – ERZİNCAN:
GEOGRAPHICAL INDICATION REGISTERED PRODUCTS

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ÖZET

Doğu Anadolu Bölgesi'nin Yukarı Fırat Bölümünde yer alan Erzincan ili, tarih boyunca Hititlerden Romalılara kadar birçok uygarlığa ev sahipliği yapmış, Anadolu'nun en eski yerleşim merkezlerinden birisidir. Göç ve ticaret yollarının kesişiminde bulunması nedeniyle zengin bir kültürel mirasa ve köklü sanat geleneğine (el işçiliği/el sanatları, müzik ve halk kültürü vb.) sahip olan şehir, tarım ve hayvancılığa dayalı mutfak geleneğiyle de Türk gastronomisinde önemli bir yere sahiptir. Bu özellikleriyle Erzincan, yüksek Coğrafi İşaret (Cİ) potansiyeline sahip illerden biridir. Cİ tescili; kültürel mirasımızın ve geleneklerimizin korunması, gelecek nesillere aktarılması, sürdürülebilirliğinin sağlanması ve ekonomik değere dönüştürülmesinde marka güvencesi sağlayan önemli bir araçtır. Cİ'ler hem ürünlerin hem de üreticilerin korunmasına katkı sağlarken, kırsal ve bölgesel kalkınmayı da desteklemektedir. Cİ'ler, Menşe adı (Protected Designation of Origin – PDO: ürünün tüm nitelikleri belirli bir coğrafi bölgeye özgüdür) veya Mahreç işareti (Protected Geographical Indication – PGI: ürünün en az bir özelliği belirli bir coğrafi bölgeyle ilişkilidir) şeklinde tescil edilebilmektedir. Türkiye'de 2025 yılı Aralık ayı itibarıyla 1793 adet ürün Cİ tescili almıştır. Erzincan'da ise 6 Menşe adı ve 8 Mahreç işareti olmak üzere toplam 14 adet ürün Türk Patent ve Marka Kurumu (TÜRKPATENT) tarafından tescillenmiştir. **Menşe işaretliler:** Erzincan Tulum Peyniri, Cimin Üzümlü, Refahiye Balı, Kemaliye Dutu, Kemah Doğal Kaynak Tuzu ve Tercan Balı'dır. **Mahreç işaretliler:** Erzincan Bakır İmalat ve El İşlemciliği Sanatı, Erzincan Kesme Kadayıfı, Erzincan Üzümlü Sarucu, Kemaliye Lök Tatlısı, Kemaliye Gazenne Dokuması, Cengerli Kilimi, Kemaliye Kapı Tokmağı ve Kemaliye Kuru Kaymağı'dır. Erzincan'da Cİ tescil başvurusu yapılmış 22 adet ürün ise değerlendirme sürecindedir. Bu çalışmada, Cİ'lerin önemine değinerek Erzincan'ın tescillenmiş ürünleri tanıtılmıştır. Böylece, zengin doğal kaynakları ve özgün üretim teknikleriyle sanatta ve geleneksel ürün çeşitliliğinde öne çıkan Erzincan'ın Cİ'li ürünleri aracılığıyla kentin gastronomi turizmine katkı sağlamak ve tescil potansiyeli taşıyan diğer yerel ürünler için farkındalık oluşturmak amaçlanmıştır.

Anahtar Kelimeler: Coğrafi İşaret, Menşe Adı, Mahreç İşareti, Erzincan, Kültürel Miras, Gastronomi Turizmi

ABSTRACT

Erzincan Province, located in the Upper Euphrates region of Eastern Anatolia, is one of Anatolia's oldest settlement centers, having been home to many civilizations throughout history, from the Hittites to the Romans. The province has a rich cultural heritage and a deep-rooted artistic tradition (including handicrafts, music, and folk culture) due to its location at the crossroads of migration and trade routes. It also holds an important place in Turkish gastronomy with culinary traditions based on agriculture and animal husbandry. With these characteristics, Erzincan is one of the provinces with high Geographical Indication (GI) potential. GI registration is an important tool that provides brand assurance in preserving cultural heritage and traditions, transmitting them to future generations, ensuring their sustainability, and transforming them into economic value. While GIs contribute to the protection of both products and producers, they also support rural and regional development. GIs can be registered as a Designation of Origin (PDO: all characteristics of the product are specific to a particular geographical region) or a Protected Geographical Indication (PGI: at least one characteristic of the product is associated with a particular geographical region). In Türkiye, 1793 products had obtained GI registration as of December 2025. In Erzincan, a total of 14 products, including 6 PDOs and 8 PGIs, have been registered by TÜRKPATENT. **PDO:** Erzincan Tulum Peyniri (matured sheep cheese), Cimin Üzüümü (black grape), Refahiye Balı (honey), Kemaliye Dutu (mulberry), Kemah Doğal Kaynak Tuzu (salt), and Tercan Balı (honey). **PGI:** Erzincan Bakır İmalat ve El İşlemeciliği Sanatı (copper craftsmanship), Erzincan Kesme Kadayıfı (cut kadayif), Erzincan Üzümlü Sarucu (snack made of dried grapes and walnuts), Kemaliye Lök Tatlısı (dessert made of dried mulberries and walnuts), Kemaliye Gazenne Dokuması (woven fabric), Cengerli Kilimi (rug), Kemaliye Kapı Tokmağı (door knocker), and Kemaliye Kuru Kaymağı (dried cream). In Erzincan, 22 products for which GI registration applications have been submitted are currently under evaluation. This study highlights the importance of GIs and introduces Erzincan's registered products. Thus, the aim is to contribute to the province's gastronomic tourism through Erzincan's GI-protected products, which stand out in art and traditional product diversity thanks to its rich natural resources and unique production techniques, and to raise awareness about other local products with registration potential.

Keywords: Geographical Indication, PDO, PGI, Erzincan, Cultural Heritage, Gastronomic Tourism

ERZİNCAN'IN SİYAH İNCİSİ: COĞRAFI İŞARET TESCİLLİ “CİMİN ÜZÜMÜ”NÜN KALİTE ÖZELLİKLERİ VE BİYOAKTİVİTESİ ÜZERİNE BİR DERLEME

THE BLACK PEARL OF ERZİNCAN: A REVIEW ON THE QUALITY CHARACTERISTICS AND BIOACTIVITY OF THE GEOGRAPHICALLY INDICATED “CİMİN ÜZÜMÜ (GRAPE)”

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ÖZET

Üzüm (*Vitis vinifera* L.), dünyada en fazla yetiştirilen ve ihraç edilen meyvelerden biridir. Üzümün yüksek besin değeri, lezzeti ve terapotik etkileri (antioksidan, antikanserojenik, kardiyopetrik, antiinflamatuvar, nöroprotektif, vb.) ticari değerini artırmaktadır. 2022 yılında dünya çapında 78,2 milyon ton üzüm üretilmiş olup; Çin, İtalya, Fransa, İspanya, ABD ve Türkiye en büyük üreticiler arasındadır. Türkiye, üzüm çeşitliliği bakımından zengin olup, kuru üzüm ihracatında dünya lideridir. Doğu Anadolu Bölgesi'nde yer alan Erzincan Ovası, bitki çeşitliliği bakımından zengin ve köklü bir bağcılık kültürüne sahiptir. Cimin Üzümlü (yerel adıyla Karaerik veya Siyah İnci) Erzincan'ın Üzümlü ilçesi (eski adıyla Cimin) başta olmak üzere Avcılar, Bayırbağ, Çadırtepe, Geyikli, Karakaya ve Pişkidağ köylerinde uzun yıllardır yetiştirilmektedir. Türkiye'ye özgü yüksek kaliteli sofralık çekirdekli bir çeşit olan Cimin Üzümlü, 13.06.2001 tarihinde Türk Patent ve Marka Kurumu (TÜRKPATENT) tarafından Menşe adıyla (Protected Designation of Origin – PDO) tescillenerek Türkiye'nin ilk patentli üzümlü olmuştur. Türkiye İstatistik Kurumu (TÜİK) verilerine göre (2020-2024); Erzincan'da 3.965-6.272 ton üzüm üretilmiş ve bunun %60-65'ini (2.561-4.275 ton) Üzümlü tek başına karşılamıştır. Cimin Üzümlü; siyah renkli, puslu yüzeyli, elips-oval şekilli, tane ağırlığı 3-4 g, çekirdek sayısı 1-4, kabuk kalınlığı orta, tatlı-ekşi lezzetli, dolgun salkımlı ve iri tanelidir. Cimin Üzümlünün pH değeri 3,01-3,66, asitlik miktarı %0,42-1,09, kurumadde miktarı %18,77-30,13, kül miktarı %0,71-0,90 ve protein miktarı %0,90-1,68 aralığındadır. Kendine has rengi, eşsiz mayhoş tadı ve nispeten düşük şeker içeriğiyle Cimin Üzümlü; mineraller (Ca, Mg, P, K, Fe, Mn, Zn, Cu, vb.), organik asitler (tartarik, malik, sitrik ve fumarik asit gibi) ve antioksidan bileşikler (fenolikler, flavonoidler, antosiyaninler, vb.) bakımından zengindir. Halk hekimliğinde bu üzümlü, bağışıklığı güçlendirdiği ve çeşitli hastalıklara iyi geldiği bilinmektedir. Sofralık tüketiminin yanı sıra Cimin Üzümlü, kurutulmuş yöreye özgü bir atıştırmalık olan tescilli “Erzincan Üzümlü Sarucu”nun üretiminde de hammadde olarak kullanılır. Bu çalışmada, Cimin Üzümlünün kalite özellikleri ve biyoaktivitesi üzerine yapılan araştırmalar derlenerek, üzümlü tanıtımı ve beklenen ekonomik katkısının artırılması amaçlanmıştır.

Anahtar Kelimeler: Bağcılık, *Vitis vinifera* L., Erzincan Cimin Üzümlü, Üzümlü İlçesi, Kalite Özellikleri, Coğrafi İşaret

ABSTRACT

Grape (*Vitis vinifera* L.) is one of the most cultivated and exported fruits in the world. The high nutritional value, flavor, and therapeutic effects (antioxidant, anticarcinogenic, cardiorespiratory, anti-inflammatory, neuroprotective, etc.) of grapes increase their commercial value. In 2022, 78.2 million tons of grapes were produced worldwide, with China, Italy, France, Spain, the USA, and Türkiye among the largest producers. Türkiye is rich in grape varieties and is the world leader in raisin exports. Located in the Eastern Anatolia Region, the Erzincan Plain is rich in plant diversity and has a long-standing viticulture culture. Cimin Üzümlü (locally known as Karaerik or Black Pearl) has been cultivated for many years in the villages of Avcılar, Bayırbağ, Çadırtepe, Geyikli, Karakaya, and Pişkidağ, primarily

in the Üzümlü district (formerly Cimin) of Erzincan. Cimin Üzüümü, a high-quality table grape variety unique to Türkiye, was registered as a PDO by the Turkish Patent and Trademark Office (TÜRKPATENT) on June 13, 2001, becoming Türkiye's first patented grape. According to Turkish Statistical Institute (TÜİK) data (2020-2024), 3,965-6,272 tons of grapes were produced in Erzincan, with Üzümlü alone accounting for 60-65% (2,561-4,275 tons) of this amount. Cimin Üzüümü is black in color, with a hazy surface, elliptical-oval in shape, has an average berry weight of 3-4 g, 1-4 seeds per berry, medium skin thickness, a sweet-tart flavor, full clusters, and large berries. The pH value of Cimin Üzüümü ranges from 3.01 to 3.66; acidity content 0.42-1.09%; dry matter content 18.77-30.13%; ash content 0.71-0.90%; and protein content 0.90-1.68%. Cimin Üzüümü, with its distinctive color, tart flavor, and relatively low sugar content, is rich in minerals (Ca, Mg, P, K, Fe, Mn, Zn, Cu, etc.), organic acids (such as tartaric, malic, citric, and fumaric acids), and antioxidant compounds (phenolics, flavonoids, anthocyanins, etc.). In folk medicine, this grape is believed to strengthen the immune system and be beneficial for various ailments. In addition to being consumed fresh, Cimin Üzüümü is also dried and used in the production of the trademarked "Erzincan Üzümlü Sarucu," a snack unique to the region. In this study, by compiling research on the quality characteristics and bioactivity of Cimin Üzüümü, the aim is to promote the grape and enhance its expected economic contribution.

Keywords: Viticulture, *Vitis vinifera* L., Erzincan Cimin Üzüümü (Grape), Üzümlü District, Quality Characteristics, Geographical Indication

**YAPAY ZEKA İLE HAZIRLANAN VİDEOLARIN ÇOCUKLARIN SÜNNET
SÜRECİNE ETKİSİ
THE IMPACT OF AI-GENERATED VIDEOS ON CHILDREN'S CIRCUMCISION
PROCESS**

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ÖZET

Sünnet hem dini hem de kültürel nedenlerle tarihteki en eski cerrahi uygulamalardan biridir ve bugün tıbbi ve halk sağlığı için de önemlidir. Dünya çapında erkeklerin yaklaşık üçte ikisinin sünnet olduğu bildirilmektedir. Tıbbi açıdan bakıldığında sünnet; idrar yolu enfeksiyonlarının azaltılması, hijyenin kolaylaştırılması ve cinsel yolla bulaşan hastalıkların önlenmesi gibi faydalar sağlamasına rağmen, prosedür aynı zamanda çocuk için endişe, korku ve stres gibi psikolojik etkilere de neden olabilir.

Son yıllarda sağlık alanında yapay zekâ (AI) teknolojilerinin kullanımı hızla artmış ve özellikle hasta eğitim süreçlerinde kişiselleştirilmiş bilgi materyalleri oluşturmak mümkün hale gelmiştir. Yapay zekâ ile üretilen eğitici videolar, çocuklara ve ebeveynlere cerrahi prosedürler hakkında anlaşılır ve görsel olarak desteklenen bilgiler sağlar ve prosedür öncesi kaygıyı azaltma potansiyeline sahiptir. Bu çalışmanın amacı, yapay zekâ ile hazırlanan videoların çocukların sünnet sürecine etkisini güncel literatür ışığında değerlendirmektir.

Anahtar kelimeler: Sünnet, yapay zekâ, hasta eğitimi, çocuk sağlığı, video destekli eğitim

ABSTRACT

Circumcision is one of the oldest surgical procedures in history, performed for both religious and cultural reasons, and it continues to hold medical and public health significance today. It is reported that approximately two-thirds of men worldwide are circumcised. Medically, circumcision offers several benefits, including reducing urinary tract infections, facilitating hygiene, and helping prevent sexually transmitted infections. However, the procedure may also cause psychological effects in children, such as anxiety, fear, and stress.

In recent years, the use of artificial intelligence (AI) technologies in healthcare has grown rapidly, making it possible to develop personalized educational materials, particularly in patient education processes. AI-generated educational videos provide children and parents with clear, visually supported information about surgical procedures and have the potential to reduce preoperative anxiety. The aim of this study is to evaluate the impact of AI-generated videos on children's circumcision experience in light of current literature.

Keywords: Circumcision, artificial intelligence, patient education, child health, video-assisted education

TÜRKİYE YÜZYILI MAARİF MODELİ BAĞLAMINDA NÂBÎ'NİN HAYRİYYE'SİNE DİDAKTİK BİR BAKIŞ

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ÖZET

Millî Eğitim Bakanlığı tarafından geliştirilen Türkiye Yüzyılı Maarif Modeli, eğitimi yalnızca bilişsel bir süreç olarak değil; insanın ruh, akıl ve ahlak bütünlüğü içinde ele alan değer temelli bir model olarak öne çıkmaktadır. “Erdem–Değer–Eylem” yaklaşımıyla bireyin hem bilgi hem de karakter bakımından olgunlaşmasını hedefleyen bu model, aslında Türk-İslam düşünce geleneğinde köklü bir geçmişe sahiptir. Bu çalışmada söz konusu modelin dayandığı insan tasavvuru, 17. yüzyılın önde gelen şairlerinden Nâbî'nin Hayriyye adlı mesnevisi üzerinden incelenmiştir. Nâbî'nin oğlu Ebu'l-Hayr Mehmed Çelebi'ye hitaben kaleme aldığı Hayriyye, bireyin davranışlarında rehber olacak ahlaki ilkeleri şiirsel bir dille sunar. Hayriyye, bir baba nasihati görünümünde olsa da özünde ahlak, sorumluluk, sabır ve merhamet gibi evrensel değerlerin poetik bir ders kitabıdır. Eserde yer alan dürüstlük, sabır, merhamet, çalışkanlık, sorumluluk, yardımseverlik, sevgi, aile bütünlüğü, duyarlılık, mütevazılık, mahremiyet ve temizlik gibi değerler, günümüz Maarif Modeli'nin merkezinde bulunan insani erdemlerle örtüşmektedir. Nâbî, bireyin kemalini toplumsal huzurun temeli olarak görür; eğitimi ise sadece bilgi edinme değil, insan olma süreci olarak tanımlar. Nâbî, ferdin olgunlaşmasını toplumun dirliğiyle birleştirirken bireysel terbiyeyi kamusal ahlakın temeli sayar. Bu yönüyle eser, Maarif Modeli'nin insan merkezli ve değer odaklı eğitim felsefesini asırlar öncesinden haber veren bir metin hüviyetindedir. Bu bağlamda Hayriyye, Türkiye Yüzyılı Maarif Modeli'nin hedeflediği değerler eğitiminin tarihsel ve kültürel zeminini temsil eden öncü bir metindir. Şairin “baba” kimliğiyle yazdığı öğütler, bugünün öğretmenine ve eğitimcisine düşen sorumlulukları asırlar öncesinden hatırlatır. Dolayısıyla Nâbî'nin Hayriyye'si, hem klasik edebiyatın didaktik mirasını yaşatan hem de çağdaş eğitim felsefesine ışık tutan bir köprü işlevi görmektedir.

Anahtar Kelimeler: Nâbî, Hayriyye, Türkiye Yüzyılı Maarif Modeli, Didaktik Anlayış, Erdem Temelli Eğitim.

A DIDACTIC LOOK AT NÂBÎ'S HAYRIYYE IN THE CONTEXT OF THE TURKISH CENTURY EDUCATION MODEL

ABSTRACT

The Turkish Century Education Model, developed by the Ministry of National Education, stands out as a value-based model that considers education not merely as a cognitive process but within the integrity of the human spirit, mind, and morality. This model, which aims to mature individuals in both knowledge and character through the “Virtue-Value-Action” approach, has a deep-rooted history in the Turkish-Islamic tradition of thought. This study examines the human vision upon which this model is based through the masnavi Hayriyye by Nâbî, one of the leading 17th-century poets. Nâbî's Hayriyye, written for his son, Ebu'l-Hayr Mehmed Çelebi, poetically presents moral principles that should guide individual behavior. While Hayriyye may appear as a paternal advice, it is, in essence, a poetic textbook of universal values such as morality, responsibility, patience, and compassion. Values such as honesty, patience, compassion, diligence, responsibility, charity, love, family unity, sensitivity, modesty,

privacy, and cleanliness within the work align with the human virtues central to today's Education Model. Nâbî sees individual perfection as the foundation of social peace; he defines education as a process not merely of acquiring knowledge but of becoming human. Nâbî connects individual maturation with the well-being of society, while considering individual education the foundation of public morality. In this respect, the work serves as a text that foreshadows the human-centered and value-focused educational philosophy of the Maarif Model centuries ago. In this context, Hayriyye is a pioneering text representing the historical and cultural foundation of the values education targeted by the Turkish Century Maarif Model. The poet's advice, written as a “father,” reminds us centuries ago of the responsibilities that fall upon today's teachers and educators. Therefore, Nâbî's Hayriyye serves as a bridge that both preserves the didactic legacy of classical literature and illuminates contemporary educational philosophy.

Keywords: Nâbî, Hayriyye, Türkiye Century Education Model, Didactic Understanding, Virtue Based Education.

**EDİRNELİ KÂMÎ DÎVÂNİ'NDAKİ ZÜHDÎ KAVRAMLAR VE
DEĞERLENDİRİLMESİ**

ASCETIC CONCEPTS IN THE EDİRNELİ KAMÎ DIVAN AND THEIR EVALUATION

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ÖZET

18. yüzyıl şairlerinden Edirneli Kâmî'nin Dîvânı'nda yer alan zühdî kavramları belirlemek, tasavvuf geleneği içindeki yerini ortaya koymak ve nasıl anlamlandırıldığını tespit etmek amaçlanmıştır. Tasavvufî literatürde zühd; dünya nimetlerine karşı mesafeli durarak nefsi arındırma, insanın kalbini Allah'a yöneltme ve manevî olgunluğa erişme çabası olarak tanımlanır. Bu çalışmanın temel hedefi, Kâmî'nin şiirlerinde zühdî anlayışın hangi kavramlarla temsil edildiği ve hangi şiirsel ve düşünsel bağlantılarla ele alındığını göstermektir.

Dîvân'ın tamamı taranmış; sabır, tahammül, tâkat, şükür, zikir, feyz, tövbe, istiğfâr, karâr, sebât, metânet, cesâret, ümîd ve ârzû gibi temel zühdî kavramlar sistematik şekilde sınıflandırılmıştır. Her kavram önce sözlük ve tasavvuf literatürü bağlamında değerlendirilmiş; ardından Kâmî'nin beyitlerinde hangi bağlamlarda, hangi duygu ve düşünce katmanlarıyla işlendiği ayrıntılı çözümlemelerle incelenmiştir. Bu sayede şairin kavramları sadece teorik anlamlarıyla değil, şiirsel bağlamda nasıl dönüştürdüğü takip edilmiştir.

Zühdî kavramlardan sabır, tahammül ve tâkat çoğunlukla kulun ilahî imtihana karşı direnç ve teslimiyeti; şükür, zikir ve feyzin manevî farkındalığı, ilahî lütufla ilişkilendirme bilincini yansıttığı; tövbe ve istiğfârın nefis muhasebesini, içsel arınma arzusunun ifade etmektedir. Karâr, sebât ve metânet iradeyi güçlendiren manevî dayanıklılığın şiirdeki izdüşümünü oluştururken ümîd ve ârzû ise ilahî yakınlığa duyulan özlemi, metafizik kavuşma isteğinin dile getirildiği tasavvufî yönelişler olarak öne çıkmaktadır.

Zühdî kavramlar bir arada değerlendirildiğinde, Kâmî'nin bu kavramları yüzeysel bir zahitlik söyleminin ötesine taşıdığı, onları şiirsel tefekkürün ve manevî derinliğin işlevsel unsurları hâline getirdiği görülmektedir. Bu yönüyle Kâmî'nin Dîvânı, zühdün hem tasavvufî hem edebî bir boyut kazanarak nasıl estetik bir söyleme dönüştüğünü yansıtan önemli bir kaynak niteliği taşımaktadır.

Anahtar Kelimeler: Edirneli Kâmî, Dîvân şiiri, Zühdî kavramlar.

ABSTRACT

The aim is to identify the concepts of asceticism in the Divan of Edirne-born poet Kâmî from the 18th century, to reveal its place within the Sufi tradition, and to determine how it is interpreted. In Sufi literature, asceticism is defined as the effort to purify the self by distancing oneself from worldly pleasures, directing one's heart toward Allah, and striving to attain spiritual maturity. The primary objective of this study is to show which concepts represent the ascetic understanding in Kâmî's poems and how it is addressed through poetic and intellectual connections.

The entire Divan has been scanned; fundamental ascetic concepts such as patience, endurance, fortitude, gratitude, remembrance, spiritual nourishment, repentance, forgiveness, determination, perseverance, resilience, courage, hope, and desire have been systematically classified. Each concept was first evaluated in the context of the dictionary and Sufi literature; then, it was examined in detail through detailed analyses of the contexts and emotional and intellectual layers in which it was used in Kâmî's verses. In this way, the poet's concepts were traced not only in their theoretical meanings but also in how they were transformed in the poetic context.

The ascetic concepts of patience, endurance, and fortitude mostly reflect the servant's resistance and submission to divine testing; gratitude, remembrance, and spiritual awareness reflect the consciousness of connecting with divine grace; repentance and forgiveness express self-accountability and the desire for inner purification. Resolve, steadfastness, and fortitude form the poetic reflection of spiritual resilience that strengthens the will, while hope and desire stand out as Sufi orientations that express the longing for divine closeness and the desire for metaphysical union.

When ascetic concepts are evaluated together, it is seen that Kâmî takes these concepts beyond a superficial ascetic discourse, transforming them into functional elements of poetic contemplation and spiritual depth. In this respect, Kâmî's Divan serves as an important source reflecting how asceticism, acquiring both a Sufi and literary dimension, is transformed into an aesthetic discourse.

Keywords: Kami of Edirne, Divan Poetry, Ascetic Concepts.

INVESTIGATION OF THE ANTI-STRESS ROLE OF IODINE IN *Eruca sativa* L. AT THE MINERAL SUBSTANCE AND PHYTOHORMONE LEVELS

Eruca sativa L.'da İYOTUN MİNERAL MADDE VE FİTOHORMON DÜZEYLERİNDE STRES KARŞITI ROLÜNÜN ARAŞTIRILMASI

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ÖZET

Tuzluluk, dünya çapında verimi ve kaliteyi önemli ölçüde azaltan en kritik çevresel stres faktörlerinden biridir. Bu nedenle, bitkilerin tuz stresine toleransını artırmaya yönelik araştırmalar büyük ölçüde önem taşımaktadır. Bu çalışma, tuz stresi altındaki roka bitkilerinde, eksojen olarak uygulanan iyotun özellikle mineral ve hormon içerikleri üzerindeki düzenleyici rolünü araştırmayı amaçlamıştır. 150 mM tuz stresine maruz bırakılan roka yapraklarına uygulanan iki farklı iyot dozu (50 ve 100 μM KIO_3), temel besin maddeleri (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu, Na ve Cl) ve bitki hormonları (IAA, ABA, GA, SA, sitokininler ve jasmonik asit) üzerindeki etkileri açısından değerlendirilmiştir. Tuz stresi, incelenen minerallerin (Na ve Cl hariç) seviyelerini ve tüm bitki hormonlarının (ABA hariç) içeriğini azaltmıştır. İyot uygulaması, normal koşullar altında mineral ve hormon içeriklerinde önemli bir artışla sonuçlanmıştır. Ayrıca, stres koşullarında, tuz kaynaklı azalmaları azaltarak ve büyümeyi destekleyen hormon seviyelerini dengeleyerek bitki toleransına aktif olarak katkıda bulunmuştur. Sonuçlar, iyot biyofortifikasyonunun hem normal bitki büyümesini ve gelişimini desteklediğini hem de tuz stresi toleransını artırdığını açıkça göstermektedir. İyotun bu olumlu etkisi, artan mineral alımı ve stres tepkisi hormonlarının (özellikle ABA düzenlemesi) optimizasyonu ile açıklanabilir ve bu da iyotun stresli bitki üretiminde potansiyel bir biyostimulan olarak kullanılabileceğini göstermektedir.

Anahtar Kelimeler: Roka, Tuz Stresi, İyot, Mineral içeriği, Hormon

ABSTRACT

Salinity is one of the most critical environmental stressors, significantly reducing yields and quality worldwide. In this context, research to increase plant tolerance to salt stress is of great importance. This study aimed to investigate the regulatory role of exogenously applied iodine, particularly on mineral and hormone contents, in rocket plants under salt stress. Two different iodine doses (50 and 100 μM KIO_3) applied to rocket leaves exposed to 150 mM salt stress were evaluated for their effects on essential nutrients (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu, Na and Cl) and plant hormones (IAA, ABA, GA, SA, cytokinins and jasmonic acid). Salt stress reduced the levels of the examined minerals (except Na and Cl) and the content of all plant hormones (except ABA). Iodine application resulted in a significant increase in mineral and hormone contents under normal conditions. Furthermore, under stress conditions, it actively contributed to plant tolerance by mitigating salt-induced reductions and balancing growth-promoting hormone levels. The results clearly demonstrate that iodine biofortification supports both normal plant growth and development and increases salt stress tolerance. This positive effect of iodine can be explained by its increased mineral uptake and its optimization of stress response hormones (especially ABA regulation), suggesting that iodine can be used as a potential biostimulant in stressed plant production.

Keywords: Rocket, Salt Stress, Iodine, Mineral content, Hormone

**EFFECTS OF COLD PLASMA TREATMENT ON LETTUCE SEED
GERMINATION UNDER SALT STRESS**

**TUZ STRESİ ALTINDA MARUL TOHUMU ÇİMLENMESİNE SOĞUK PLAZMA
İŞLEMİNİN ETKİLERİ**

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ÖZET

Tuz stresi, tarımsal üretimde bitki büyümesini ve gelişimini etkileyen en önemli sorunlardan biri olup, ilk aşama olan çimlenme üzerinde önemli bir engelleyici etkiye sahiptir. Son yıllarda, çeşitli stres faktörlerine karşı tohum çimlenme direncini artırmak için çeşitli uygulamalar üzerinde durulmuştur. Bunlar arasında, soğuk plazma teknolojisi, tohum canlılığını ve stres dayanıklılığını iyileştirme potansiyeli nedeniyle umut verici bir yöntem olarak ortaya çıkmıştır. Bu çalışmada, tuzluluk altında marul (*Lactuca sativa* L.) tohumlarının çimlenme performansı üzerine soğuk plazma uygulamasının etkileri araştırılmıştır. 0, 15, 30 ve 60 saniye boyunca soğuk plazma ile muamele edilen tohumlar, 0 ve 100 mM NaCl ortamlarında çimlenmeye bırakılmıştır. Uygulamaların çimlenme yüzdesi, ortalama çimlenme süresi, ortalama günlük çimlenme, tepe değeri, çimlenme değeri, kök uzunluğu ve hipokotil uzunluğu üzerindeki etkileri araştırılmıştır. Çimlenme ve fide büyümesi tuzlulukla azalmış ancak tüm soğuk plazma uygulama zamanlarında önemli ölçüde artmıştır. Bununla birlikte, soğuk plazma tekniği genel olarak tuzluluğun marul tohumu çimlenmesi üzerindeki etkilerini önemli ölçüde azaltmıştır. 30 saniyelik ve 60 saniyelik plazma uygulamalarının tuzlu ortamda marul tohumlarının çimlenmesini desteklediği gözlemlenmiştir. Genel olarak, sonuçlar soğuk plazma uygulamasının hem optimum koşullar altında hem de yüksek tuzlulukta ortamlarda marul tohumlarının çimlenmesini iyileştirmek için etkili bir teknik olduğunu ve sürdürülebilir tarım uygulamalarında potansiyel uygulama alanı olduğunu göstermektedir.

Anahtar Kelimeler: Çimlenme, Marul, Plazma, Tuzluluk, Tohum

ABSTRACT

Salt stress is one of the major problems affecting plant growth and development in agricultural production, with a significant inhibitory effect on the first stage, germination. In recent years, various applications have been emphasized to enhance seed germination resistance against various stress factors. Among these, cold plasma technology has emerged as a promising method due to its potential to improve seed vigor and stress resilience. This study investigated the effects of cold plasma treatment on the germination performance of lettuce (*Lactuca sativa* L.) seeds under salinity. Seeds treated with cold plasma for 0, 15, 30, and 60 seconds were allowed to germinate in 0 and 100 mM NaCl media. The effects of the treatments were investigated on germination percentage, mean germination time, mean daily germination, peak value, germination value, root length, and hypocotyl length. Germination and seedling growth decreased with salinity but increased significantly at all cold plasma application times. However, the cold plasma technique generally considerably reduced the effects of salinity on lettuce seed germination. It has been observed that 30-second and 60-second plasma applications support the germination of lettuce seeds in a salt environment. Overall, the results demonstrate that cold plasma treatment is an effective technique for improving lettuce seed germination both under optimal conditions and in environments with elevated salinity, suggesting its potential application in sustainable agricultural practices.

Keywords: Germination, Lettuce, Plasma, Salinity, Seed

SÜRDÜRÜLEBİLİR İÇ MEKAN TASARIMINDA POPÜLER KÜLTÜRÜN ROLÜ; GAZİANTEP KAFELER ÖRNEĞİ

THE ROLE OF POPULAR CULTURE IN SUSTAINABLE INTERIOR DESIGN: THE
CASE OF GAZİANTEP CAFES

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ÖZET

Günümüzde, sosyal medya platformlarında iç mekân resim paylaşım alışkanlığı ve popüler kültür alışkanlıkları, iç mekân tasarımlarında köklü değişimler yaşamasına sebep olmaktadır. Kafeler gibi kamusal mekânların fiziksel görünürlüğü, görselleştirilmiş ve sosyal medyada paylaşılabılır mekân çerçevesinde yeniden tanımlanmıştır. Bu dönüşümle birlikte, iç mekanlar görsel dekor veya sahne niteliği kazanmıştır. Ancak popüler kültürün sebep olduğu bu hızlı değişim; sürekli revize edilen iç mekân tasarımları, sosyal medya odaklı mobilya donatı ve malzeme seçimleri, sürdürülebilirlik kriterleri ile uyusmamaktadır. Sosyal medya görünürlüğünü elde etmeye çalışan mekanların, sürdürülebilir tasarım ilkelerine ne denli bağlı kaldığı tartışma konusudur. Bu konu, günümüz tasarım anlayışında görsel beğeni ve sürdürülebilir tasarım arasındaki çelişkiyi göz önüne sermektedir. Çalışma, Gaziantep ilinde popüler kültürün iç mekâna yansımalarının yoğun olarak gözlemlendiği Iconova ve Osmangazi bölgelerinde bulunan beş kafe iç mekân tasarımının karşılaştırmalı olarak incelemektedir. Kafe tasarımlarının, popüler kültür yaklaşımlarına olan etkisi, sürdürülebilir tasarım kriterleri ile değerlendirilerek ne ölçüde uyumlu olduğunu belirlemek amaçlanmıştır. Karşılaştırma, 30 maddeden oluşan ve sürdürülebilirliği çevresel, sosyal ve ekonomik olmak üzere üç ana başlık altında ele alan bir kriter listesi kullanmaktadır. Kafeler, yerinde gözlem ve fotoğraflar ile incelenmiş veriler; “Evet-Kısmen-Hayır” sorularına cevap verecek şekilde 1'den 3'e kadar puanlanarak nicel yorumlanmıştır. Bulgular, görsel beğeni odaklı iç mekân tasarımlarının, sürdürülebilirlik ilkeleriyle olan karşılaştırmasını ve algısal sürdürülebilirliğin fiziksel sürdürülebilirlik önündeki en önemli engel olduğunu ortaya koymaktadır. Sosyal medya odaklı iç mekân tasarım anlayışı, sürdürülebilirliğin uzun vadeli amaçlarını sekteye uğratmaktadır. Çalışma Gaziantep kafelerinde, popüler kültürün hızlı tüketim anlayışı ile sürdürülebilir iç mekân tasarımları arasındaki çelişkiyi tespit etmiştir. Gaziantep ilindeki kafe mekânlarının, sürdürülebilir tasarım kriterleri çerçevesinde karşılaştırmalı analizi, iç mimarlık disiplini için özgün ve güncel bir araştırma alanı sunmaktadır.

Anahtar kelimeler; Algısal Sürdürülebilirlik, Görsel Beğeni, Sürdürülebilir İç Mekân Tasarımı, Popüler Kültür, Gaziantep Kafeleri

ABSTRACT

Today, the habit of sharing interior photos on social media platforms and popular culture trends are causing fundamental changes in interior design. The physical appearance of public spaces such as cafes has been redefined within the framework of visualised and social media-shareable spaces. With this transformation, interiors have gained visual decor or stage-like qualities. However, this rapid change caused by popular culture is not compatible with sustainability

criteria, as interior designs are constantly being revised and furniture and material selections are focused on social media. The extent to which spaces striving for social media visibility adhere to sustainable design principles is a matter of debate. This issue highlights the conflict between visual appeal and sustainable design in today's design approach. The study comparatively examines the interior designs of five cafes located in the Iconova and Osmangazi districts of Gaziantep province, where the reflection of popular culture on interior spaces is intensely observed. The aim is to determine the extent to which café designs are compatible with sustainable design criteria by evaluating their impact on popular culture approaches. The comparison uses a list of 30 criteria that address sustainability under three main headings: Environmental, Social, and Economic. Cafes were examined using on-site observations and photographs; data was quantitatively interpreted by scoring from 1 to 3 to answer “Yes-Partially-No” questions. Findings reveal that visually appealing interior designs conflict with sustainability principles and that perceived sustainability is the most significant obstacle to physical sustainability. The social media-focused interior design approach undermines the long-term goals of sustainability. The study identified the contradiction between the fast consumption mindset of popular culture and sustainable interior designs in Gaziantep cafes. The comparative analysis of cafe spaces in Gaziantep within the framework of sustainable design criteria presents a unique and current research area for the discipline of interior architecture.

Keywords: Perceptual Sustainability, Visual Appeal, Sustainable Interior Design, Popular Culture, Gaziantep Cafes

**VENTRİKÜLER ERKEN VURULARIN TESPİTİ İÇİN HOPFIELD VE ELMAN
AĞLARINA DAYALI HİBRİT BİR YAPAY ZEKA MODELİ**
A HYBRID ARTIFICIAL INTELLIGENCE MODEL BASED ON HOPFIELD AND
ELMAN NETWORKS FOR THE DETECTION OF VENTRICULAR PREMATURE
BEATS

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ÖZET

Ventriküler Erken Vurular (VEV), kardiyak aritmiler arasında yaygın olarak gözlemlenen ve bireylerde ilerleyen kardiyak sorunlar için önemli bir risk faktörü teşkil eden bir durumdur. Bu nedenle, Elektrokardiyogram (EKG) sinyallerinden VEV'lerin doğru ve otomatik tespiti, erken teşhis ve hasta izleme süreçlerinin etkinliği açısından hayati bir öneme sahiptir. Ancak, EKG kayıtlarının doğası gereği yüksek gürültü içeriği ve klinik veri setlerinde VEV örneklerinin diğer vuruş tiplerine kıyasla sınırlı ve dengesiz dağılımı, bu otomatik tespit sistemlerinin geliştirilmesinde karşılaşılan temel zorluklardır. Bu çalışmanın temel amacı, söz konusu gürültü ve veri dengesizliği gibi yaygın zorluklara karşın yüksek doğrulukla VEV tespiti gerçekleştirebilen, gürbüzeye karşı dayanıklı hibrit bir yapay sinir ağı modeli önermektir. Çalışmada, referans niteliğinde ve açık erişimli bir kaynak olan MIT-BIH Aritmi veritabanı kullanılmıştır. Önerilen model, iki aşamalı yenilikçi bir mimariye sahiptir: İlk aşamada, EKG sinyallerinde gözlenen gürültünün etkin biçimde bastırılması amacıyla Hopfield ağı tabanlı bir filtreleme yapısı kurgulanmıştır. Bu filtreleme, sinyal kalitesini önemli ölçüde artırarak sonraki sınıflandırma aşamasının performansını maksimize etmeyi hedeflemiştir. İkinci aşamada ise, gürültüden arındırılmış temiz sinyaller, zaman serisi modellemesinde güçlü bir yaklaşım olarak kabul edilen Elman tipi Tekrarlayan Sinir Ağı ile sınıflandırılmıştır. Ayrıca, veri setindeki sınırlı VEV örneklerinin model performansını olumsuz etkilemesini önlemek amacıyla Gauss gürültüsü ekleme, dairesel kaydırma ve genlik modülasyonu gibi çeşitli veri artırma teknikleri titizlikle uygulanmıştır. Modelin performansı, veri setinin %80 eğitim ve %20 test oranıyla bölünmesiyle oluşturulan test kümesi üzerinde kapsamlı bir şekilde değerlendirilmiştir. Geliştirilen hibrit model, test verisi üzerinde %89,2'lik bir genel doğruluk sağlamıştır. VEV sınıfındaki performans metrikleri ise oldukça başarılı olup, %87 duyarlılık ve %95 kesinlik olarak ölçülmüştür. Bu yüksek duyarlılık değeri, modelin PVC vuruşlarını kaçırma oranının düşük olduğunu; yüksek kesinlik değeri ise yanlış pozitif oranının düşük tutulabildiğini net bir şekilde göstermektedir. Sonuç olarak, önerilen Hopfield-Elman hibrit modeli, EKG sinyallerinden VEV tespiti için yüksek performanslı, güvenilir ve gürültülü koşullara karşı kararlı bir yöntem olarak kanıtlanmıştır. Bu özellikleriyle model, geleneksel yöntemlere kıyasla üstünlük sağlayarak, klinik pratikte kullanılabilecek otomatik teşhis ve hasta izleme sistemlerinin geliştirilmesine değerli bir katkı sunma potansiyeli taşımaktadır.

Anahtar Kelimeler: Ventriküler Erken Vuru, Elektrokardiyogram, Hibrit Yapay Sinir Ağı, Hopfield Ağı, Elman Ağı, Veri Artırma.

ABSTRACT

Ventricular Premature Beats (VPBs) are a common cardiac arrhythmia and represent a significant risk factor for progressive cardiac problems in individuals. Therefore, the accurate and automatic detection of VPBs from Electrocardiogram (ECG) signals is of vital importance for the effectiveness of early diagnosis and patient monitoring processes. However, the inherently high noise content of ECG recordings and the limited and uneven distribution of VPB examples in clinical datasets compared to other beat types are fundamental challenges encountered in developing these automatic detection systems. The main objective of this study is to propose a robust hybrid artificial neural network model capable of detecting VPBs with high accuracy despite common challenges such as noise and data imbalance. The MIT-BIH Arrhythmia database, a reference and open-access resource, was used in the study. The proposed model has an innovative two-stage architecture: In the first stage, a Hopfield network-based filtering structure is designed to effectively suppress the noise observed in ECG signals. This filtering aims to significantly improve signal quality and maximize the performance of the subsequent classification stage. In the second stage, the noise-free clean signals were classified using an Elman-type Recurrent Neural Network, which is considered a powerful approach in time series modeling. Furthermore, various data augmentation techniques, such as adding Gaussian noise, circular shifting, and amplitude modulation, were meticulously applied to prevent the limited number of VPB samples in the dataset from negatively affecting model performance. The model's performance was comprehensively evaluated on a test set created by dividing the dataset into an 80% training and 20% testing ratio. The developed hybrid model achieved an overall accuracy of 89.2% on the test data. The performance metrics in the PVC class were quite successful, measured at 87% sensitivity and 95% specificity. This high sensitivity value clearly shows that the model has a low rate of missing VPB; the high specificity value clearly shows that the false positive rate can be kept low. In conclusion, the proposed Hopfield-Elman hybrid model has been proven to be a high-performance, reliable, and robust method for detecting VPBs from ECG signals under noisy conditions. With these characteristics, the model has the potential to provide superiority over traditional methods and contribute significantly to the development of automatic diagnosis and patient monitoring systems that can be used in clinical practice.

Keywords: Ventricular Premature Beat, Electrocardiogram, Hybrid Artificial Neural Network, Hopfield Network, Elman Network, Data Augmentation.

**BİTKİ YAPRAK HASTALIKLARININ OTOMATİK TEŞHİSİ İÇİN EVRİŞİMLİ
SİNİR AĞLARI TABANLI BİR YAKLAŞIM**

A CONVOLUTIONAL NEURAL NETWORK-BASED APPROACH FOR THE
AUTOMATIC DIAGNOSIS OF PLANT LEAF DISEASES

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ÖZET

Bitki hastalıklarının erken ve doğru teşhisi, küresel gıda güvenliğini tehdit eden verim kayıplarını önlemede hayati bir role sahiptir. Geleneksel teşhis yöntemlerinin zaman alıcı, maliyetli ve uzman görüşüne bağımlı olması, bu alanda daha verimli çözümlere olan ihtiyacı artırmaktadır. Bu çalışmada, söz konusu kısıtları aşmak amacıyla, bitki yapraklarındaki hastalık belirtilerini görüntüler üzerinden otomatik olarak teşhis edebilen bir Evrişimli Sinir Ağı (ESA) tabanlı derin öğrenme modeli önerilmektedir.

Modelin geliştirilmesi ve doğrulanması sürecinde, farklı bitki türlerine ait sağlıklı ve hastalıklı yaprak görüntülerinden oluşan, kamuya açık ve kapsamlı bir veri seti kullanılmıştır. Ham görüntü verileri, modelin öğrenme verimliliğini ve genelleme yeteneğini artırmak amacıyla sistematik bir ön işleme sürecinden geçirilmiştir. Bu süreçte görüntüler standart bir boyuta getirilmiş, piksel değerleri normalize edilmiş ve sınıf etiketleri "one-hot" kodlama tekniğiyle sayısal formata dönüştürülmüştür.

Önerilen ESA mimarisi; özellik haritalarının çıkarılması için çok katmanlı evrişim ve ReLU aktivasyon fonksiyonlarını, boyutsal indirgeme için havuzlama (pooling) katmanlarını ve nihai sınıflandırma için tam bağlantılı (fully connected) katmanları içermektedir. Modelin yeni verilere genelleme yeteneğini artırmak ve aşırı uyumu (overfitting) sınırlandırmak amacıyla, eğitim sürecinde "dropout" ve "early stopping" gibi modern düzenleme teknikleri stratejik olarak entegre edilmiştir.

On beş epoch süren eğitim süreci sonunda yapılan analizler, modelin eğitim verisi üzerinde %93,96 ve test verisi üzerinde %91,40 gibi yüksek bir doğruluk oranına ulaştığını göstermiştir. Bu sonuçlar, önerilen ESA tabanlı yaklaşımın bitki hastalıklarının teşhisinde hızlı, nesnel ve tutarlı bir karar destek mekanizması sunma potansiyelini açıkça ortaya koymaktadır. Geliştirilen bu otomatik teşhis sisteminin, tarım sektöründe dijital dönüşümü hızlandırması, operasyonel verimliliği artırması ve sürdürülebilir tarım hedeflerine önemli katkılar sağlaması beklenmektedir. Gelecek çalışmalarda, model performansını daha da iyileştirmek amacıyla farklı derin öğrenme mimarilerinin ve transfer öğrenme yaklaşımlarının entegrasyonu planlanmaktadır.

Anahtar Kelimeler: Derin Öğrenme, Evrişimli Sinir Ağları, Görüntü İşleme, Bitki Hastalıkları, Sınıflandırma, Sürdürülebilir Tarım.

ABSTRACT

The early and accurate diagnosis of plant diseases plays a vital role in preventing yield losses that threaten global food security. The time-consuming, costly, and expert-dependent nature of traditional diagnostic methods increases the need for more efficient solutions in this field. This study proposes a deep learning model based on a Convolutional Neural Network (CNN) that can automatically diagnose disease symptoms on plant leaves from images, aiming to overcome these limitations.

During the model's development and validation process, a public and comprehensive dataset consisting of healthy and diseased leaf images from different plant species was used. The raw image data underwent a systematic preprocessing process to increase the model's learning efficiency and generalization ability. During this process, the images were standardized to a uniform size, pixel values were normalized, and class labels were converted to numerical format using the “one-hot” encoding technique.

The proposed ESA architecture includes multi-layer convolutional layers and ReLU activation functions for feature extraction, pooling layers for dimensionality reduction, and fully connected layers for final classification. To enhance the model's generalization ability on new data and limit overfitting, modern regularization techniques such as “dropout” and “early stopping” have been strategically integrated into the training process.

Analyses conducted at the end of the fifteen-epoch training process showed that the model achieved a high accuracy rate of 93.96% on the training data and 91.40% on the test data. These results clearly demonstrate the potential of the proposed ESA-based approach to provide a fast, objective, and consistent decision support mechanism for the diagnosis of plant diseases. This developed automatic diagnosis system is expected to accelerate digital transformation in the agricultural sector, increase operational efficiency, and make significant contributions to sustainable agriculture goals. In future studies, the integration of different deep learning architectures and transfer learning approaches is planned to further improve model performance.

Keywords: Deep Learning, Convolutional Neural Networks, Image Processing, Plant Diseases, Classification, Sustainable Agriculture.

OBSTERİK ACİLLERDE EKİBİN BİR ÜYESİ OLARAK EBE

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ÖZET

Obstetrik aciller, maternal ve fetal sağlığı tehdit eden, hızlı ve doğru müdahaleyi gerektiren klinik durumlardır (hemoraji, eklampsi, uterus rüptürü, kordon prolapsusu, vb.). Obstetrik acil durumların etkin yönetimi, yalnızca deneyimli bireysel sağlık profesyonelleriyle değil, multidisipliner bir ekip yaklaşımıyla mümkündür. Acil obstetrik bakımda çok disiplinli bir ekip yaklaşımı, anne ve yenidoğan sağlığı için hayati önemdedir. Başarılı bir acil obstetrik bakım müdahalesi, ekip üyelerinin uyum içinde çalışması, etkin bir iletişim kurması ve rollerinin net bir şekilde tanımlanmış olmasına bağlıdır. Multidisipliner ekip anlayışı, kadınlar için pozitif klinik ve emosyonel sonuçlar üretmesi, yüksek teknoloji ortamında kadın merkezli bakımı geliştirmesinden dolayı hem tıp hem de ebeler için önem arz etmektedir.

Obstetrik acil durumlarda multidisipliner yaklaşımın merkezinde yer alan ebeler, bilgi ve becerileriyle acil durumların erken tanınması, müdahale edilmesi ve bakımın sürekliliğinin sağlanmasında kritik bir pozisyonundadır. Buna karşın literatürde obstetrik acillerde ekibin bir üyesi olan ebeler ile ilgili direkt kaynak bulunamamaktadır. Bu kapsamda obstetrik acillerde ekibin çok önemli bir üyesi olan ebeye yönelik bilimsel kanıtlar ışığında güncel literatür doğrultusunda hazırlanan bu çalışmanın sağlık çalışanlarına yön gösterici olabileceği ve literatüre katkı sağlayabileceği düşünülmektedir.

Anahtar Kelimeler: Obstetrik aciller, Ekip, Ebe, Multidisipliner yaklaşım, Kadın

ABSTRACT

Obstetric emergencies are clinical conditions that threaten maternal and fetal health and require rapid and accurate intervention (hemorrhage, eclampsia, uterine rupture, cord prolapse, etc.). Effective management of obstetric emergencies is possible not only with experienced individual healthcare professionals but also with a multidisciplinary team approach. A multidisciplinary team approach in emergency obstetric care is vital for maternal and newborn health. Successful emergency obstetric care depends on team members working together harmoniously, establishing effective communication, and having clearly defined roles. A multidisciplinary team approach is important for both the medical and midwifery professions because it produces positive clinical and emotional outcomes for women and enhances women-centered care in a high-tech environment.

Midwives, who are at the center of the multidisciplinary approach in obstetric emergencies, play a critical role in early recognition, intervention, and ensuring continuity of care with their knowledge and skills. However, the literature lacks direct references regarding midwives, a

crucial member of the obstetric emergency team. Therefore, this study, prepared in light of scientific evidence and in line with current literature, is believed to be a valuable resource for healthcare professionals and contribute to the literature.

Keywords: Obstetric emergencies, Team, Midwife, Multidisciplinary approach, Women

NORMAL VAJİNAL DOĞUM EYLEMİNDE YAPAY ZEKANIN YERİ

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ÖZET

Yapay zekanın kullanımındaki artış normal vajinal doğum eyleminde de etkisini göstermektedir. Sağlık sistemleri giderek daha fazla yapay zekâ teknolojilerini benimsedikçe, doğum sonuçlarında önemli iyileştirmeler, uzun doğum ve gereksiz müdahalelerle ilişkili sağlık hizmeti maliyetlerinde bir azalma potansiyeli söz konusudur. Normal vajinal doğum eyleminde morbidite ve mortalitenin azalmasında yapay zeka oldukça fazla fayda sağlamaktadır. Yapay zekanın normal vajinal doğum eylemi yönetimine entegre edilmesi, doğumun ilerlemesi tahminlerinin doğruluğunu artırma, yönetim stratejilerini optimize etme, genel anne ve yenidoğan sonuçlarını iyileştirmede önemli bir ilerlemeyi temsil etmektedir.

Bu alandaki gelişmeler devam ettikçe, sağlık profesyonellerinin yapay zekâ teknolojilerinin yetenekleri, sınırlamaları hakkında bilgi sahibi olmaları yapay zekanın klinik uygulamada etkili bir şekilde uygulanmasını sağlaması açısından önemlidir. Buna karşın literatürde normal vajinal doğum eyleminde yapay zekanın yeri ile ilgili doğrudan kaynak bulunamamaktadır. Bu kapsamda normal vajinal doğum eyleminde yapay zekanın yerine yönelik bilimsel kanıtlar ışığında güncel literatür doğrultusunda hazırlanan bu çalışmanın sağlık çalışanlarına yön gösterici olabileceği ve literatüre katkı sağlayabileceği düşünülmektedir.

Anahtar Kelimeler: Doğum eylemi, Kadın, Yapay zeka, Sağlık profesyoneli

ABSTRACT

The increasing use of artificial intelligence is also having an impact on vaginal birth. As healthcare systems increasingly adopt artificial intelligence technologies, there is the potential for significant improvements in birth outcomes and a reduction in healthcare costs associated with prolonged labor and unnecessary interventions. Artificial intelligence offers significant benefits in reducing morbidity and mortality in vaginal birth. Integrating artificial intelligence into vaginal labor management represents a significant advance in improving the accuracy of labor progression predictions, optimizing management strategies, and improving overall maternal and neonatal outcomes.

As developments in this field continue, it is crucial for healthcare professionals to be aware of the capabilities and limitations of artificial intelligence technologies to ensure their effective implementation in clinical practice. However, the literature lacks direct references on the role of artificial intelligence in vaginal birth. Therefore, this study, prepared in line with current

scientific evidence and the current literature on the role of artificial intelligence in vaginal birth, is believed to be a guide for healthcare professionals and contribute to the literature.

Keywords: Labor, Women, Artificial intelligence, Healthcare professional

LAKTASYON SÜRECİNDE ALTERNATİF TEDAVİLERİN ROLÜ: EMZİRME ENGELLERİ AŞILABİLİR Mİ?

THE ROLE OF ALTERNATIVE TREATMENTS DURING LACTATION: CAN BREASTFEEDING BARRIERS BE OVERCOME?

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ÖZET

Anne sütü, yenidoğan bebeklerde büyüme, gelişme ve bağışıklık sisteminin olgunlaşması için gerekli olan tüm besinleri içeren en doğal ve ideal besin kaynağıdır. Dünya Sağlık Örgütü'ne göre, bebekler ilk altı ay boyunca sadece anne sütü ile beslenmelidir. Emzirme yalnızca bebeği beslemeyi değil aynı zamanda anne ve bebek sağlığının korunması ve geliştirilmesi adına hayati öneme sahip bir süreçtir. Literatürde anne sütünün antimikrobiyal ve bağışıklık sağlayıcı etkisi sayesinde emzirilen çocuklarda akut ve kronik hastalık riskinin azaldığı bildirilmiştir. Emzirme, postpartum dönemde annenin uterus involüsyonunu hızlandırarak kan kaybının azalması, Tip 2 diyabet ve bazı kanser türlerine karşı koruyuculuk sağlaması gibi sekonder maternal faydaları da beraberinde getiren kritik bir müdahaledir. Buna karşı emzirme süreci, annenin yaşadığı stres, kaygı ve ağrı gibi olumsuz durumlar ile iş hayatı ve çevresel faktörlerden de etkilenmektedir. Anneler, emzirmeyi sürdürme ve olumsuz durumlarla baş etme amacıyla teratojenik etkisi olmayan alternatif tamamlayıcı uygulamalara yönelebilmektedir. Bu uygulamalardan bazıları annenin stres seviyesini azaltmaya yönelik gevşeme teknikleri ve aromaterapi, süt üretimini desteklediği düşünülen bitkisel takviyeler, meme ucundaki ağrıyı azaltmaya yönelik topikal tedavilerdir. Alternatif tamamlayıcı uygulamaların etkinliği hemşirelik bakımı kapsamında bilimsel çalışmalarla desteklenmelidir. Bu derlemede, annelerin emzirme sürecinde karşılaştıkları sorunlarla baş etmek için yöneldikleri tamamlayıcı kanıta dayalı uygulamalar incelenmiştir.

Anahtar Kelimeler: Anne sütü, alternatif tamamlayıcı uygulamalar, emzirme, hemşirelik.

ABSTRACT

Breast milk is the most natural and ideal source of nutrition, containing all the nutrients necessary for growth, development and the maturation of the immune system in newborn babies. According to the World Health Organisation, babies should be exclusively breastfed for the first six months. Breastfeeding is not only about feeding the baby, but also a process of vital importance for the protection and improvement of both maternal and infant health. The literature reports that breastfeeding reduces the risk of acute and chronic diseases in children due to the antimicrobial and immune-boosting effects of breast milk. Breastfeeding is a critical intervention that also brings secondary maternal benefits, such as accelerating uterine involution in the postpartum period, reducing blood loss, and providing protection against Type 2 diabetes and certain types of cancer. On the other hand, the breastfeeding process is also affected by negative factors such as stress, anxiety, and pain experienced by the mother, as well as work life and environmental factors. Mothers may turn to alternative complementary practices

that have no teratogenic effects in order to continue breastfeeding and cope with adverse situations. Some of these practices include relaxation techniques and aromatherapy aimed at reducing the mother's stress levels, herbal supplements thought to support milk production, and topical treatments to reduce nipple pain. The effectiveness of complementary alternative practices should be supported by scientific studies within the scope of nursing care. This review examines evidence-based complementary practices that mothers turn to in order to cope with the problems they encounter during the breastfeeding process.

Keywords: Breast milk, complementary alternative practices, breastfeeding, nursing.

BUILDING SENSE OF COMMUNITY IN MIDDLE SCHOOL EDUCATION

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Abstract

A strong sense of community among middle school pupils is important for a positive and supportive educational environment. When pupils feel that they belong, are respected, and are part of a cohesive school community, they develop greater motivation and confidence to engage in the learning process. Research shows that a strong sense of community positively influences academic performance by increasing students' participation, focus, and willingness to collaborate in class. It also enhances social relationships, as students learn to communicate effectively, develop empathy, and build supportive peer networks. The aim of this article is to highlight the importance of a sense of community in the classroom and to examine how schools and teachers can help foster it. The article is based on a review of recent researches and contemporary findings regarding the sense of community and its effects within the classroom environment. Pupils who feel connected to their school are more likely to participate in extracurricular activities, leadership roles, and community-based projects, strengthening their engagement and personal development. Therefore, nurturing a sense of community in middle school is critical for promoting academic success, positive social skills, and active involvement in school life. The article is relevant to teachers, school staff, parents and educators who work with pupils in middle school.

Keywords: *education, middle school, pupils, teachers, community*

REDEFINING THE TEACHING-LEARNING PARADIGM THROUGH DIGITAL AND BLENDED STRATEGIES

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Abstract: The contemporary student exhibits a profile fundamentally distinct from previous generations, necessitating that educators adapt their pedagogical approach through the incorporation of versatile, innovative, and highly interactive instructional instruments. These instruments, which include intelligent gadgets, digital resources, interactive platforms, and virtual laboratory environments, are all designed to capture student attention and foster deep engagement. This paper explores the efficacy of mixed learning strategies, combining physical presence with distance learning applications, arguing that digitally prepared students can achieve competence levels comparable to those trained face-to-face, provided there is adequate student interest and teacher adaptability. Tools such as Padlet and Jamboard exemplify modern applications that can successfully enhance the classroom experience. Key advantages of digital learning encompass the flexibility to pursue courses remotely, the rapid and simple distribution of materials, timely content updates, and the implementation of robust feedback mechanisms. However, digital education faces inherent limitations, including restricted access to internet services, the persistence of a digital technology gap, and diminished non-verbal communication. The central pedagogical challenges lie in effectively guiding students to acquire practical, hands on abilities through digital mediums and devising creative teaching methodologies that sustain continuous academic interest. This analysis concludes that navigating the digital era successfully requires a balanced adoption of technology coupled with persistent pedagogical innovation.

Keywords: digital era, online learning, distance education, blended learning, educational technology, pedagogical innovation, digital divide

DRUG POLICY DIVERGENCE: ROMANIA’S PUNITIVE REFORM VERSUS THE EUROPEAN UNION PUBLIC HEALTH MODEL

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Abstract: Drug use and related trafficking represent a significant global challenge, imposing substantial costs on public health, national security, and economic productivity. This paper analyzes the recent transformation of the Romanian legislative framework, specifically the promulgation of Law 58/2024, which significantly modifies Law 43/2000 and Law 194/2011. The core changes reflect a marked shift toward a more punitive reform, eliminating the possibility of suspended sentences for cultivation, trafficking, and possession of high-risk drugs, and substantially increasing the minimum and maximum custodial sentences (from three to ten years) for offenses involving psychoactive substances. Romania’s current strategy emphasizes a strictly security-driven approach, focusing on robust deterrence, judicial cooperation, operational data interception, and asset confiscation to combat drug-related crime. However, this national punitive stance stands in marked dissonance with the emerging public policy trend within the European Union, which increasingly advocates for public health models, harm reduction, and controlled legalization of certain substances. This study critically argues that the prohibition based strategy, as exemplified by the new Romanian legislation, has demonstrably failed to curb consumption, leading instead to an exponential increase in the illicit market and associated harms. The analysis concludes by proposing that alignment with the evidence-based European models is necessary for effective long-term public health and safety outcomes.

Keywords: legislative reform, drug policy, prohibition, controlled legalization, public health, criminal justice, decriminalization

**THE PERMANENCE OF THE DECALOGUE IN THE CONTEXT OF TRANSITORY
AND PERMANENT LAW: A THEOLOGICAL AND LEGAL APPROACH**

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Abstract: Scripture reveals a hierarchy of laws, some of which are of a permanent and unchangeable nature, while others were temporary and provisional in character. This distinction is crucial for understanding the role of the Decalogue (The Ten Commandments). The provisional laws—be they ceremonial, judicial, administrative, social, civil, financial, or agrarian—regulated human relations in limited spaces and times, and served as typological foundations for the Saviour’s Sacrifice (the lamb as a symbol of the ultimate sacrifice). With the fulfillment of this archetype, the ceremonial laws were rendered obsolete. In contrast, the Moral Law (Decalogue), transmitted by God Himself through Moses, reflects His character, good, holy, righteous, pure, spiritual, eternal, and retroactive of love. These commandments guide ethical life, establishing the difference between good and evil, and offering protection from sin and its consequences. The first four commandments define the God-human relationship, guaranteeing religious freedom. The subsequent six commandments regulate inter-human relations, covering the material domain (theft, covetousness), family relations (honoring parents), and personal integrity (murder, adultery). The tenth commandment, through its internal dimension, acts as a preventive norm over evil thoughts that can degenerate into criminal acts. Thus, the Decalogue constitutes an immutable legal system, ensuring a minimum standard of moral stability, regardless of time, space, or conditions.

Keywords: Moral Law, permanent character, transitory law, Decalogue, immutability, ceremonial law.

THE ESSENTIAL ROLE OF NURSING DIAGNOSIS IN PATIENT-CENTERED CARE PLANNING

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Abstract: Modern medical practice highlights the necessity of a holistic patient assessment, extending beyond strictly medical pathology. The nursing diagnosis, formulated by the nurse, represents a qualitative synthesis of human responses to actual or potential health problems and life processes. Unlike the medical diagnosis, which focuses on the disease, the nursing diagnosis provides a clinical perspective on the functional, psychological, social and spiritual status of the individual, family, or community. It is essential for the stability of objectives and the appropriate interventions, and for the achievement of the evaluative step of results, the formulation of objectives, decision-making, clinical reasoning, and critical thinking, based on sound professional knowledge. This tool is fundamental to grounding care plan decisions and developing personalized interventions. Current international classifications define three main categories of diagnosis: risk diagnosis, problem-focused diagnosis, and health promotion diagnosis for diagnostic syndrome. The selection of nursing interventions – whether autonomous, delegated, or collaborative – is directly dependent on the accuracy and relevance of the diagnosis. By identifying sources of difficulty, manifestations of dependence or autonomy problems, the nurse can establish clear objectives and measure outcomes focused on restoring balance and maximizing health potential.

Keywords: autonomous interventions, care plan, holistic assessment, source of difficulty, manifestation of dependence, delegated interventions

DIGITAL TRANSFORMATION IN IRANIAN BANKING: THE MODERATING INFLUENCE OF REGULATORY SANDBOX EFFECTIVENESS ON CAPABILITY-PERFORMANCE LINK

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Abstract

This study explores the impact of Digital Transformation Capabilities (DTCs) on perceived banking performance within the Iranian banking sector, investigating the moderating role of Perceived Regulatory Sandbox Effectiveness (PRSE). Building on research from similar emerging markets, the study addresses the underexplored interplay between firm-level digital capabilities and the regulatory environment in shaping performance outcomes in Iran. Employing a quantitative, cross-sectional design and adapting established methodologies, the research proposes surveying managers in Iranian commercial banks to assess their perceptions of technological adaptation, strategic positioning, competitive positioning (DTCs), the effectiveness of the regulatory sandbox (PRSE), and overall banking performance. results suggest that while DTCs positively influence perceived performance, the perceived effectiveness of the regulatory sandbox significantly strengthens the performance benefits derived from technological adaptation and competitive positioning. These findings underscore the critical role of a supportive regulatory environment in enabling Iranian banks to fully leverage their digital capabilities. Practical implications highlight the need for banks to engage with the regulatory framework and for policymakers to ensure sandboxes are perceived as effective catalysts for innovation.

Keywords: Digital Transformation, Banking Performance, Regulatory Sandbox, FinTech, Iran

BRIDGING THE DIGITAL DIVIDE IN EMERGING MARKETS: THE CATALYTIC ROLE OF REGULATORY SANDBOXES IN BANKING PERFORMANCE

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Abstract

This study investigates the nexus between Digital Transformation Capabilities (DTCs) and banking performance within the context of Emerging Markets (EMs), specifically focusing on the Middle East and North Africa (MENA) region. While the digital imperative is well-documented in developed economies, the interplay between firm-level capabilities and the often-volatile regulatory environments of EMs remains underexplored. Leveraging the Dynamic Capabilities framework, this research examines how the Perceived Regulatory Sandbox Effectiveness (PRSE) moderates the relationship between technological adaptation, strategic positioning, and competitive positioning (collectively DTCs) and banking performance. Utilizing a quantitative, cross-sectional survey of 165 bank managers across three representative emerging economies, the results indicate that while DTCs are foundational for performance, their impact is significantly amplified when regulatory sandboxes are perceived as effective mechanisms for reducing institutional uncertainty. The findings offer critical insights for policymakers in emerging economies, suggesting that regulatory innovation is as crucial as technological innovation in driving financial sector growth.

Keywords: Digital Transformation, Emerging Markets, Regulatory Sandbox, Financial Inclusion, Banking Performance, Dynamic Capabilities.

**CLIMATE CHANGE IMPACTS, VULNERABILITIES, AND ADAPTATION STRATEGIES
IN RICE-, WHEAT-, AND MAIZE-BASED CROPPING SYSTEMS OF BANGLADESH:
A SCOPING REVIEW**

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Abstract

Background

Bangladesh's cereal-based cropping systems underpin national food security but are increasingly threatened by climate change. Rising temperatures, erratic rainfall, floods, droughts, and salinity intrusion have intensified production risks for rice, wheat, and maize, with implications for yields, livelihoods, and sustainability.

Methods

This study employed a structured scoping review to synthesize existing evidence on climate change impacts and adaptation strategies for major cereal crops in Bangladesh. A comprehensive literature search was conducted using the Consensus platform, accessing over 170 million academic records. From 1,095 identified studies, 50 high-quality papers were selected following systematic screening and relevance-based ranking.

Results

The reviewed literature consistently demonstrates that climate change has increased yield variability and reduced average productivity of rice and wheat, while maize shows relatively greater resilience but remains vulnerable to heat stress. Coastal regions face heightened risks due to salinity and sea-level rise, whereas inland regions experience pronounced temperature and rainfall variability. Adaptation measures—including stress-tolerant varieties, optimized sowing dates, improved irrigation, conservation practices, and crop modeling—can mitigate yield losses; however, their effectiveness varies across agro-ecological zones and is strongly influenced by socioeconomic and institutional conditions.

Conclusions

Evidence indicates that agronomic adaptations alone are insufficient to ensure long-term resilience. Integrated, location-specific strategies that combine technological innovations with supportive policies, extension services, and institutional strengthening are essential. Advancing interdisciplinary and farmer-centered research will be critical to sustaining cereal productivity and food security in Bangladesh under accelerating climate change.

Keywords: Climate change; Cereal crops; Rice–wheat–maize systems; Yield variability; Adaptation strategies; Food security; Bangladesh

**ASSESSMENT OF ENVIRONMENTAL KNOWLEDGE PROFILE AND
AWARENESS GAPS IN KUSHTIA MUNICIPALITY, BANGLADESH**

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ABSTRACT

Environmental knowledge is a fundamental dimension of environmental literacy, equipping individuals with the ability to understand ecological processes, human-environment interactions, and the drivers and consequences of environmental degradation. This study assesses the level of environmental knowledge among residents of Kushtia Municipality, Bangladesh, with a specific focus on key issues such as climate change, waste management, and sustainable resource use. Using structured questionnaires and descriptive statistical analysis, the research evaluates respondents' understanding of essential environmental concepts and contemporary environmental challenges. The results reveal that mean scores for the five-point Likert scale items ranged from 2.16 to 4.79, indicating variability from low to high knowledge levels across different topics. The highest mean score (4.79) corresponded to the belief that "education plays a significant role in increasing understanding of environmental issues," while the lowest score (2.16) reflected limited familiarity with local environmental initiatives and programs. The overall mean score of 3.55 places respondents within the "good" category of environmental knowledge, suggesting that most individuals possess a moderate to high level of awareness regarding major environmental problems and the human activities contributing to them. Despite this generally favorable level of knowledge, notable gaps exist in more specialized or policy-related areas, including the Bangladesh Delta Plan, greenhouse gas mechanisms, and long-term sustainability strategies. The study highlights the need for enhanced environmental education, targeted awareness campaigns, and improved dissemination of policy-related information to strengthen public understanding and support informed decision-making for sustainable environmental management.

Keywords: Environmental Knowledge; Environmental Literacy; Public Awareness; Awareness Gap; Sustainable Environmental Management

E-DEVLET SİSTEMLERİNDE YAPAY ZEKÂ TABANLI SOHBET ROBOTLARININ KULLANIMINA YÖNELİK BİR İNCELEME

AN EXAMINATION OF THE USE OF ARTIFICIAL INTELLIGENCE-BASED CHATBOTS IN E-GOVERNMENT SYSTEMS

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ÖZET

E-devlet platformlarında sunulan yapay zekâ destekli sohbet robotları (chatbot), vatandaşların devlet hizmetlerine erişiminde giderek daha yaygın olarak kullanılmaktadır. Bu robotlar, doğal dil işleme (DDİ: Natural Language Processing) ve makine öğrenimi teknikleri sayesinde vatandaşların sorularına hızlı ve doğru yanıtlar sağlayarak devlet hizmetlerine erişimi kolaylaştırmakta ve başvuru süreçlerini daha etkin hâle getirmektedir. Yapay zekâ destekli e-devlet sohbet robotları yalnızca bilgi sunmakla kalmayıp, aynı zamanda kamu hizmetlerinin tanıtımı, başvuru yönlendirmesi ve adım adım rehberlik sağlama gibi işlevler de üstlenmektedir. Bu robotlar, dijital asistan olarak e-devlet sistemlerinin ana bileşenlerinden biri hâline gelmiş olup, kullanıcı deneyimini iyileştirmekte ve devlet hizmetlerinin daha erişilebilir ve verimli sunulmasını sağlamaktadır. Bu çalışmanın amacı da, e-devlet hizmetlerinde yapay zekâ tabanlı sohbet robotlarının kullanım durumunu incelemektir.

Bu çalışmada nitel araştırma yöntemlerinden doküman analizi kullanılmıştır. Literatür taraması gerçekleştirilmiş ve ulaşılan akademik çalışmalar incelenmiştir. Literatür taraması sonucunda toplam 43 makaleye ulaşılmış, bu çalışmalar içerik açısından değerlendirilmiştir. Analiz sonuçlarına göre, sohbet robotlarının e-devlet hizmetlerinde bilgiye erişimi kolaylaştırdığı, süreçleri dijitalleştirdiği ve kamu kurumlarında iletişim kanallarını güçlendirdiği görülmüştür. Bu çalışma, e-devlet uygulamalarında yapay zekâ tabanlı sohbet robotlarının mevcut kullanım durumunu ortaya koyarak gelecekteki akademik ve uygulamalı araştırmalar için kavramsal bir çerçeve sunmaktadır.

Anahtar Kelimeler: E-devlet, Yapay Zekâ, Sohbet Robotu, Dijital Dönüşüm, Doküman Analizi

ABSTRACT

Artificial intelligence (AI)-powered chatbots on e-Government platforms are increasingly utilized by citizens to access public services. These chatbots, utilizing natural language processing (NLP) and machine learning techniques, deliver quick and accurate responses to user inquiries, making it easier to access government services and streamline application processes. AI-based e-Government chatbots not only provide information but also perform functions such as promoting public services, guiding applications, and offering step-by-step assistance. As digital assistants, these chatbots have become a vital part of e-Government systems, improving user experience and enabling more accessible, efficient service delivery. The purpose of this study is to explore the current use of AI-based chatbots in e-government services.

This research uses qualitative methods, specifically document analysis. A systematic review of the literature was conducted, analyzing relevant academic studies. The review identified 43 articles, which were assessed based on their content. The analysis reveals that chatbots facilitate users' access to information, streamline processes, and improve communication channels within public institutions. This study presents a conceptual framework that outlines the current landscape of AI-based chatbots in e-Government applications, guiding future academic and practical research.

Keywords: e-Government, Artificial Intelligence, Chatbot, Digital Transformation, Document Analysis

OSMANLI'DA KADILARIN ATANMA İÇİN ESER YAZMA GELENEĞİ
THE TRADITION OF OTTOMAN JUDGES WRITING WORKS FOR APPOINTMENT

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ÖZET

Osmanlı'da herhangi bir makama veya mansıba atanmada telif veya tercüme edilerek padişaha veya yüksek bir devlet görevlisine sunulan eserlerin çok önemli bir yeri olup bu şekilde yazılmış yüzlerce eser ve yapılmış yüzlerce atama bulunmaktadır. Böyle eserlerin önemli bir kısmının Osmanlı ilmiyesinde çeşitli yerlerde görev yapan ve görev yeri en sık değiştirilen kadı veya müftülere ait olması dikkati çekmektedir. Osmanlı kadılarının bir yerde bir yıldan fazla görev yapmaması bir gelenek olduğundan bu durum kadıların zaman zaman sert itiraz ve şikâyetlerine konu olmuş, görev yerini beğenmeme, kendisine haksızlık ve zulüm edildiğini ileri sürerek yakınmalara sebep olabilmektedir. Hatta bu yüzden geçim sıkıntısı çektiğini ileri sürerek durumunun düzeltilmesi amacıyla önemli bir eser telif veya tercüme edip padişaha sunan ve bu yolla yardım isteyen çok sayıda kadı bulunmaktadır. Bu kadıların yazdığı en yaygın eserler arasında risale türü ilk sırada gelmekte olup bu eserlerde okuyucunun bu eserleri keyiflice okuyabilmesi gözetilmiştir. Bir gelenek hâlinde yüzlerce eserin yazılmasına yol açan bu geleneğin kütüphanelerde yüzlerce örneği vardır. Bazılarının yazarı meçhul olan bu eserler arasında kişisel bilgilerini en ince ayrıntısına kadar verdiği hâlde ismini belirtmeyen kadılar da bulunmaktadır ki bu bildiride buna dikkat çekilecektir. Bildirimizde, bir kadı olan bu yazarın adı açıkça belirtilmeyen bir mecmua ve içindeki risaleleri incelenip müellifin karşılaştığı maddi sıkıntılar, atamalarda uğradığı haksızlıklar ve bunlar için yakınmaları dikkatlere sunulacaktır. Bu kadı müellifin yazdığı risaleler genellikle tasavvufi konularda olup risalelerin sonlarında sıkıntılarını dile getirerek iyi bir yere veya mansıba atanmak için padişahı yardım dilediği görülmektedir.

Anahtar kelimeler: Kadı, atama, risale, yardım, mansıp.

ABSTRACT

In the Ottoman Empire, works written or translated and presented to the sultan or a high government official played a significant role in appointments to any office or post, and hundreds of such works were written and hundreds of appointments were made. It is noteworthy that a significant portion of such works belonged to judges or muftis who served in various positions within the Ottoman scholarly community and whose positions were frequently changed. Because it was customary for Ottoman judges to serve no more than one year in a single position, this practice sometimes led to strong objections and complaints from the judges, leading to complaints of dissatisfaction with their positions and of injustice and oppression. Indeed, many judges, claiming financial difficulties, would compose or translate important works and present them to the sultan, seeking assistance in this way. Among the most common works written by these judges were the treatise, and these works were designed to be enjoyable for the reader. Libraries hold hundreds of examples of this tradition, which led to the creation of hundreds of works. Among these works, some of which have unknown authors, there are also judges who provide detailed personal information but remain anonymous, a point we will highlight in this report. This report will examine a collection and

its treatises, where the author, a judge, is not explicitly identified. We will highlight the financial difficulties this author faced, the injustices he faced during appointments, and his complaints about these difficulties. The treatises written by this judge are generally on Sufi subjects, and at the end of these treatises, he expresses his difficulties and requests the sultan's help in securing a favorable appointment or appointment to a position of authority.

Keywords: Judge, appointment, treatise, assistance, position.

BİLİNMEYEN BİR KADI MÜELLİFE AİT-SUAL-CEVAP RİSALESİ

A QUESTION-ANSWER TREATISE BY AN UNKNOWN QADI AUTHOR

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ÖZET

Risale türü, İslam dünyasında en yaygın kalem mahsullerinden birisi olup bu eserlerde öncelikle okuyucunun yazılan eserleri kolay ve keyiflice okuyup anlaması hedeflenmiştir. Bir gelenek hâlinde yüzyıllarca devam eden bu kalem mahsullerinin kütüphanelerde yüzlerce örneği bulunmaktadır. Bir kısmının yazarı bilinmeyen bu eserlerin tanıtılarak bilim dünyasının hizmetine sunulması önemli bir vazife olarak karşımızda durmaktadır. İşte bunlardan birisi de bu bildiri ile dikkatlere sunulan ve yazarı açıkça belirtilmeyen bir mecmua içindeki سوال-cevap başlıklı küçük bir risaledir. 16. yüzyılın sonlarında Muhammed bin Şaban adlı bir kişi tarafından kayda geçirilen bir mecmua içinde yer alan risalelerin arasında bulunan bu eserde müşkül görünen ilginç dinî sualler ve bunlara verilen cevaplar yer almaktadır. Genellikle tasavvufî konularda sorulan on dokuz adet ilmihal sorusuna örneklerle cevaplar verilmiştir. Bu risalenin sonunda müellif kendisi hakkında da bazı bilgiler vermiştir ki bu bilgiler şu anda kendisiyle ilgili elimizde bulunan yegâne bilgilerdir. Müellif bu eseri padişaha ithafen yazdığını belirterek karşılığında bir makam ve mansıp beklediğini bildirmiştir. Böyle olmakla beraber müellifin mecmuanın hiçbir yerinde adını vermemiş olması dikkati çekmektedir. Araştırmalarımızda adına sanına ait bir bilgi bulunamayan bu kadı müellif çeşitli yerlerde kadılık yapmıştır. Çok donanımlı bir âlim olan bu müellifin yazdığı bu risaleler Türk edebiyatı için yepyeni kazanımlar olup fıkıh, tasavvuf, tefsir, edebiyat, tarih vb. konularda göz doldurmaktadır.

Anahtar kelimeler: Risale, سوال, cevap, tasavvuf, mecmua.

ABSTRACT

The treatise genre is a widespread genre in the Islamic world, and these works primarily aim to enable the reader to understand and enjoy their writings. Libraries contain concise examples of these works, a tradition that has endured for centuries. Some represent the author's significant role in presenting these unknown works to the scholarly world. Among those highlighted in this report is a short treatise titled "Questions and Answers," found in a collection whose author is not clearly identified. This work, found among treatises in a collection recorded by a certain Muhammad ibn Shaban in the late 16th century, contains interesting and often difficult religious questions and their answers. Examples of Sufism presented in nineteen catechisms are illustrated with examples. At the end of this treatise, the author provides some information about himself, the only information currently available. He states that he dedicates this work to the sultan and that he is seeking a position and rank. The fact that the author's name is not mentioned anywhere in the collection indicates that such a combination is noteworthy. Our research has not found any information about this author, who served as a judge at various times. These treatises written by this author, who was an extremely talented scholar, are a valuable source for Turkish literature, and his life in jurisprudence, Sufism, tafsir, literature, history and many other fields is impressive.

Keywords: Treatise, question, answer, Sufism, collection.

**MODERN RESEARCH ON THE USE OF ROBOTICS IN INCLUSIVE EDUCATION:
ANALYSIS OF SCIENTIFIC SOURCES
СОВРЕМЕННЫЕ ИССЛЕДОВАНИЯ ПО ИСПОЛЬЗОВАНИЮ
РОБОТОТЕХНИКИ В ИНКЛЮЗИВНОМ ОБРАЗОВАНИИ: АНАЛИЗ НАУЧНЫХ
ИСТОЧНИКОВ**

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Аннотация

Данное исследование выполнено в рамках научного проекта ИРН AP25795177 «Технология обучения робототехнике в условиях инклюзивного образования». На первоначальном этапе проекта была поставлена задача провести широкий анализ современных научных публикаций, посвящённых использованию образовательной робототехники в инклюзивной образовательной среде. Актуальность данной работы обусловлена необходимостью внедрения инновационных технологий, которые обеспечивают равные возможности для учащихся с различными образовательными потребностями в условиях цифровизации образования.

Для систематизации научного материала был осуществлён поиск рецензируемых статей в международных базах данных Scopus и Web of Science за период 2021–2025 гг. При отборе источников учитывались критерии научной значимости, новизны и соответствия тематике исследования. Анализ литературы позволил раскрыть теоретические основы применения робототехники в инклюзивной практике, а также определить её потенциал в развитии познавательной активности, коммуникативных навыков, моторики и способности к решению задач у детей с особыми образовательными потребностями (ООП).

Полученные результаты свидетельствуют о недостаточном количестве исследований, специально ориентированных на инклюзивное обучение робототехнике. Большинство работ описывают использование роботов преимущественно в типичных начальных классах, уделяя основное внимание игровому конструированию, тогда как вопросы поэтапного обучения программированию и методической адаптации учебного материала для детей с ООП освещены значительно слабее. Кроме того, мало публикаций, содержащих практические рекомендации для педагогов относительно дифференциации и адаптации заданий.

Таким образом, проведённый обзор подтверждает необходимость дальнейших исследований в данной области и разработки научно обоснованных методических подходов, направленных на обеспечение доступности и эффективности обучения робототехнике в инклюзивных классах.

Ключевые слова: инклюзивное образование, робототехника, обзор литературы, образовательные технологии, начальная школа, познавательный интерес.

Abstract

This study was conducted as part of the scientific project IRN AP25795177 titled “Technology of Teaching Robotics in Inclusive Education.” The primary objective of the initial phase of the project was to perform a comprehensive review of current scientific publications on the use of educational robotics in inclusive settings. Such an analysis is essential, as the increasing digitalization of education requires innovative approaches that ensure equal access to learning for students with diverse educational needs.

The literature search strategy involved the examination of peer-reviewed articles indexed in Scopus and Web of Science databases and published between 2021 and 2025. Specific inclusion and exclusion criteria were applied to ensure the relevance, novelty, and scientific rigor of the selected studies. The reviewed publications offered insights into the theoretical justification for applying robotics in special and inclusive education, highlighting its effectiveness in enhancing cognitive engagement, social communication, fine motor skills, and problem-solving abilities among students with special educational needs (SEN).

The analysis revealed that although educational robotics represents a promising pedagogical tool, the number of studies dedicated specifically to inclusive education remains limited. Most works focus on general primary education contexts and emphasize the mechanical construction and play-based interaction with robots rather than structured programming skills. Moreover, only a small portion of the literature provides methodological recommendations tailored to SEN learners or evaluates differentiated teaching strategies based on individual capabilities.

Overall, the review confirms the importance of expanding interdisciplinary research in this field and developing evidence-based methodological frameworks for teaching robotics in inclusive classrooms. Further studies are needed to explore adaptive tools, accessible learning interfaces, and the professional readiness of teachers working in technologically enriched inclusive environments.

Keywords: inclusive education, robotics, literature review, educational technology, primary school, cognitive interest.

THE EFFECT OF GENDER ON ENTREPRENEURIAL SKILLS IN SOKOTO METROPOLIS

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The study examines the impact of gender on entrepreneurial skills in Sokoto Metropolis, focusing on the influence of socio cultural norms, access to resources and systemic barriers on the entrepreneurial ecosystem. Drawing on primary data collected through structured questionnaires from one hundred and fifty two respondents, the research highlights significant gender disparities in skill acquisition, resource accessibility and entrepreneurial outcomes. The findings reveal that cultural norms and patrarchial structures heavily shape entrepreneurial opportunities, with women facing unique challenges, such as limited access to financial resources, restricted mobility, and societal expectations that confine them to informal sector. Regression analysis indicates that factors such as education, entrepreneurial training, and access to funding positively influence entrepreneurial skill, but systemic gender biases hinder equal participation. This study contributes to the understanding of gender dynamics in entrepreneurship by providing localized insights into the socio economic realities of Sokoto Metropolis. It underscores the need for targeted interventions, including gender positive policies, financial inclusion strategies, mentorship programs and cultural reforms to foster a more inclusive entrepreneurial ecosystem. By addressing these barriers, the untapped potentials of women entrepreneurs can be unlocked, thus driving sustainable economic growth and social transformation. The study underscores the significant influence of gender on entrepreneurial skills, resource access, and outcomes in Sokoto Metropolis.

KEY WORDS: Effect, Entrepreneurial, Gender, Skills, Metropolis, Sokoto

REGULATORY EFFECTS OF EXOGENOUS METHIONINE ON MINERAL AND ORGANIC ACID METABOLISM IN PEPPER SEEDLINGS UNDER DROUGHT STRESS

EKZOJEN METİYONİNİN, KURAKLIK STRESİ ALTINDA BİBER FİDELERİNDE MİNERAL VE ORGANİK ASİT METABOLİZMASI ÜZERİNDEKİ DÜZENLEYİCİ ETKİLERİ

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ÖZET

Küresel iklim değişikliğinin neden olduğu kuraklıklar, dünya nüfusunun ihtiyaç duyduğu gıdayı sağlamada zorluklar yaratmaktadır. Özellikle yoğun tarımsal üretimin yapıldığı bölgelerde su kıtlığı, bitki büyümesini ve gelişimini azaltır. Birçok çalışma kuraklığa dayanıklı genotipleri belirlemeye odaklanırken, çeşitli dışsal uygulamaların da bitki stres direncini artırdığı gösterilmiştir. Esansiyel bir amino asit olan metiyonin, bu amaçla kullanılan bileşiklerden biridir. Bu çalışmada, iki sulama seviyesinde (100% ve 50 tarla kapasitesi) yetiştirilen biber fidelerine uygulanan dışsal metiyoninin (0 mg/L, 10 mg/L ve 20 mg/L) mineral (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu ve Na) ve organik asit (oksalik, propiyonik, tartarik, bütirik, malonik, malik, laktik, sitrik, maleik, fumarik ve süksinik) içerikleri üzerindeki etkileri araştırılmıştır. Kuraklık stresi, hem mineral besin maddelerinde hem de organik asitlerde belirgin bir azalmaya yol açmıştır. Stresiz koşullarda, metiyonin uygulamaları, bu biyokimyasal bileşenlerin seviyelerini artırarak bitki performansını artırmıştır. Stres koşulları altında ise metiyonin, kuraklığa bağlı azalmaları hafifletmiş ve stres toleransını iyileştirmiştir. Genel olarak, metiyoninin mineral besin maddesi alımı ve organik asit metabolizması üzerindeki düzenleyici etkisi, su kısıtlı koşullar altında bitki büyümesini ve gelişimini artırmak için destekleyici bir molekül olarak potansiyelini göstermektedir.

Anahtar Kelimeler: Amino Asit, Mineral, Organik Asit, Biber, Su Stresi

ABSTRACT

Droughts caused by global climate change are creating challenges in supplying the world's population with the food it needs. Water scarcity, particularly in regions with intensive agricultural production, reduces plant growth and development. While many studies focus on identifying drought-tolerant genotypes, various exogenous applications have also been shown to enhance plant stress resilience. Methionine, an essential amino acid, is one of the compounds used for this purpose. This study investigated the effects of exogenous methionine (0 mg/L, 10 mg/L, and 20 mg/L) applied to pepper seedlings grown under two irrigation levels (100% and 50 field capacity) on mineral (N, P, K, Ca, Mg, S, Mn, Fe, Zn, B, Cu and Na) and organic acid (oxalic, propionic, tartaric, butyric, malonic, malic, lactic, citric, maleic, fumaric and succinic) contents. Drought stress led to a marked reduction in both mineral nutrients and organic acids. Under non-stressed conditions, methionine treatments enhanced plant performance by increasing the levels of these biochemical constituents. Under stress conditions, methionine alleviated drought-induced reductions and improved stress tolerance. Overall, methionine's regulatory influence on mineral nutrient uptake and organic acid metabolism demonstrates its potential as a supportive molecule for enhancing plant growth and development under water-limited conditions.

Keywords: Amino Acid, Mineral, Organic Acid, Pepper, Water Stress

KOLZA (*Brassica napus* L.) BİTKİSİNDE VERİM KAYBINA YOL AÇAN ZARARLI BÖCEKLERİN İNCELENMESİ

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ÖZET

Kolza, yüksek yağ verimi, düşük doymuş yağ oranı ve zengin biyodizel potansiyeli sayesinde hem gıda sanayisinde hem de enerji sektöründe önemli bir yere sahiptir. Yem sanayinde kullanılan küspesi ve toprak verimliliğine katkı sağlayan bitkisel artıklarıyla geniş bir kullanım alanına sahip olan kolza, aynı zamanda sürdürülebilir tarım sistemlerinde değerli bir alternatif yağ bitkisi olarak değerlendirilmektedir. Ancak üretim sürecinde çeşitli zararlılar bitkinin gelişimini olumsuz etkileyerek verim ve kalite düşüşlerine neden olmaktadır.

Kolza tarlalarında görülen *Plutella xylostella* (Linnaeus) ve *Pieris brassicae* Linn. gibi yaprak zararlıları türlerin larvaları, bitkinin fotosentetik yüzeyini azaltarak büyüme geriliğine yol açarken, *Phyllotreta cruciferae* Goeze ve *Phyllotreta striolata* (F.) gibi pire böcekleri genç fidelerde yapraklarda delik deşik bir görünüme neden olurlar. Sap, damar ve çiçek yapısında beslenen *Lygus lineolaris* (Palisot de Beauvois), *Brevicoryne brassicae* (Linnaeus) ve *Chromatomyia horticola* Goureau gibi türler ise hem özsu emgi zararı hem de deformasyon oluşturarak generatif gelişmeyi zayıflatır. Ayrıca *Ceutorhynchus assimilis* (Paykull), *Tropinota hirta* (Poda) ve *Psylliodes chrysocephala* (Linnaeus, 1758) kapsül ve çiçek dönemlerinde zarar vererek tane bağlamayı ve yağ verimini düşürür. Kolzanın en önemli zararlıları yaprak pireleri (*P. cruciferae*), lahana gövde piresi (*P. chrysocephala*) ve lahana unlu yaprak bitleri (*B. brassicae*)' dir (McVetty and Duncan, 2016). Bu zararlılarla mücadelede ekim nöbeti, toprak hazırlığı, yabancı ot kontrolü, erken uyarı ve izleme yöntemleri önemli yer tutar. Biyolojik dengeyi koruyan yaklaşımlar ile ekonomik eşiklere dayalı kimyasal mücadele stratejileri entegre zararlı yönetiminin temelini oluşturur.

Bu çalışmanın amacı, kolza bitkisinde verim ve kalite kayıplarına yol açan başlıca entomolojik zararlıların biyolojisini, zararlı durumlarını hakkında bilgi sunmaktır. Bu kapsamda çalışma, kolza üretiminde sürdürülebilirlik ve verimliliği artırmayı temel hedef olarak benimsemektedir.

Anahtar Kelimeler: Kolza, *Psylliodes chrysocephala*, *Phyllotreta cruciferae*, zararlı kontrolü

STUDY OF PESTS INSECT CAUSING YIELD LOSS IN OILSEED RAPE (*Brassica napus* L.) PLANTS

ABSTRACT

Colza holds an important place in both the food industry and the energy sector due to its high oil yield, low saturated fat content, and rich biodiesel potential. With its meal used in the feed industry and plant residues contributing to soil fertility, colza has a wide range of applications and is also considered a valuable alternative oil crop in sustainable agricultural systems. However, various pests during the production process negatively affect the plant's development, leading to reduced yield and quality.

The larvae of leaf-damaging insect species such as *Plutella xylostella* (Linnaeus) and *Pieris brassicae* Linn. such as leaf-feeding pests, cause growth retardation by reducing the plant's photosynthetic surface area, while flea beetles such as *Phyllotreta cruciferae* Goeze and *Phyllotreta striolata* (F.) cause a perforated appearance on the leaves of young seedlings. Species such as *Lygus lineolaris* (Palisot de Beauvois), *Brevicoryne brassicae* (Linnaeus) and *Chromatomyia horticola* Goureau, which feed on stems, veins and flowers, weaken generative development by both sucking sap and causing deformation. Additionally, *Ceutorhynchus assimilis* (Paykull), *Tropinota hirta* (Poda), and *Psylliodes chrysocephala* (Linnaeus, 1758) cause damage during the capsule and flowering stages, reducing seed set and oil yield. The most significant pests of cabbage are cabbage aphids (*P. cruciferae*), cabbage stem weevils (*P. chrysocephala*), and cabbage mealybugs (*B. brassicae*) (McVetty and Duncan, 2016). Crop rotation, soil preparation, weed control, early warning and monitoring methods play an important role in combating these pests. Approaches that preserve the biological balance and chemical control strategies based on economic thresholds form the basis of integrated pest management.

The aim of this study is to provide information on the biology and damage levels of the main entomological pests causing yield and quality losses in colza. In this context, the study adopts the fundamental objective of increasing sustainability and productivity in colza production.

Keywords: Oilseed rape, *Psylliodes chrysocephala*, *Phyllotreta cruciferae*, pest control

ASPIR (*Carthamus tinctorius* L.) TARIMINDA KARŞILAŞILAN BAŞLICA ENTOMOLOJİK ZARARLILAR

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ÖZET

Aspir bitkisi, içerdiği yüksek oranda linoleik asit ve kaliteli bitkisel yağ nedeniyle gıda, kozmetik ve ilaç sanayisinde önemli bir yere sahiptir. Yağı yemeklik olarak kullanılırken, küspe formu hayvancılıkta değerlendirilir; ayrıca boya, biyodizel ve endüstriyel yağ üretiminde de tercih edilmektedir. Kurak ve yarı kurak bölgelerde yetiştirilebilmesi, düşük bakım isteği ve alternatif ürün potansiyeli sayesinde ekonomik önemi giderek artmaktadır. Ancak üretim sürecinde aspir bitkisi çeşitli entomolojik zararlılarla karşı karşıya kalmakta ve bu türler bitkinin büyümesini, gelişimini ve verimini olumsuz etkileyebilmektedir.

Aspirde görülen; *Helicoverpa armigera* (Hübner, 1808) ve *Heliothis peltigera* (Denis ve Schiffermüller, 1775) (Hübner) (Lepidoptera: Noctuidae), *Condica capensis* (Guenée, 1852) (Lepidoptera: Noctuidae) ve *Agrotis ipsilon* (Hufnagel, 1766) (Lepidoptera: Noctuidae) gibi zararlı türlerin larvaları özellikle genç sürgün, çiçeklenme ve kapsül dönemlerinde doku tüketimiyle verim kaybına yol açmaktadır. Yaprak ve kapsül yüzeylerini kemirerek bitkinin generatif gelişmesini zayıflatırlar. Ayrıca, *Uroleucon carthami* (Hille Ris Lambers, 1948) (Hemiptera: Aphididae) gibi yaprak bitleri bitki özsuğunu emerek sararma, gelişme geriliği ve fumajin oluşumu meydana getirirken, virüs taşınma riskini de artırmaktadır. *Acanthiophilus helianthi* (Rossi, 1794) (Diptera: Tephritidae) ise çiçek tablasında beslenerek deformasyon, iç boşalma ve tohum bağlamada azalmaya neden olmaktadır (Karve, 1980; Şengonca, 1983; Smith et al., 2006; Hill, 2008; Saeidi et al., 2011). Bu zararlılarla mücadelede ekim nöbeti, yabancı ot kontrolü, uygun ekim zamanı ve sağlıklı fidelerin kullanımı önemli kültürel uygulamalardır. Popülasyon takibi, biyolojik dengeyi koruma ve gerektiğinde seçici kimyasal mücadele ise entegre zararlı yönetiminin temelini oluşturmaktadır.

Bu çalışmanın amacı, aspir tarımında verim ve kalite kayıplarına yol açan başlıca entomolojik zararlıların biyolojisini, bitki üzerindeki zarar şekillerini ve üretim sürecindeki etkilerini inceleyerek, bu türlere karşı uygulanabilecek etkili ve sürdürülebilir mücadele stratejilerini ortaya koymaktır.

Anahtar Kelimeler: Aspir bitkisi, *Carthamus tinctorius*, *Helicoverpa armigera*, biyodizel,

MAIN ENTOMOLOGICAL PESTS ENCOUNTERED IN SAFFLOWER

(Carthamus tinctorius L.) CULTIVATION

ABSTRACT

The safflower plant holds an important place in the food, cosmetic, and pharmaceutical industries due to its high linoleic acid content and high-quality vegetable oil. While its oil is used for cooking, its meal form is used in animal husbandry; it is also preferred in the production of paint, biodiesel, and industrial oils. Its ability to be cultivated in arid and semi-arid regions, low maintenance requirements, and potential as an alternative crop are increasing its economic importance. However, during the production process, the sunflower plant faces various entomological pests, which can negatively affect the plant's growth, development, and yield.

Observed on sunflower; *Helicoverpa armigera* (Hübner, 1808) and *Heliothis peltigera* (Denis and Schiffermüller, 1775) (Hübner) (Lepidoptera: Noctuidae), *Condica capensis* (Guenée, 1852) (Lepidoptera: Noctuidae) and *Agrotis ipsilon* (Hufnagel, 1766) (Lepidoptera: Noctuidae) cause yield loss through tissue consumption, especially during the young shoot, flowering, and capsule stages. They weaken the plant's generative development by gnawing on leaf and capsule surfaces. In addition, aphids such as *Uroleucon carthami* (Hille Ris Lambers, 1948) (Hemiptera: Aphididae) cause yellowing, stunted growth, and sooty mold formation by sucking plant sap, while also increasing the risk of virus transmission. *Acanthiophilus helianthi* (Rossi, 1794) (Diptera: Tephritidae) feeds on the flower head, causing deformation, internal hollowing, and reduced seed setting (Karve, 1980; Şengonca, 1983; Smith et al., 2006; Hill, 2008; Saeidi et al., 2011). Cultural practices such as crop rotation, weed control, appropriate planting time, and the use of healthy seedlings are important in combating these pests. Population monitoring, maintaining biological balance, and selective chemical control when necessary form the basis of integrated pest management.

The aim of this study is to investigate the biology of the main entomological pests causing yield and quality losses in sunflower cultivation, the forms of damage they cause to plants, and their effects on the production process, thereby identifying effective and sustainable control strategies that can be applied against these species.

Keywords: Safflower plant, *Carthamus tinctorius*, *Helicoverpa armigera*, biodiesel

LARGE-SCALE HYBRID RISKY TRANSACTION DETECTION WITH CLUSTER-BASED PRE-RISK SCORING AND GRADIENT BOOSTED DECISION TREES

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ABSTRACT

This study proposes a directly applicable and scalable method for detecting risky transactions in real time money transfers. The dataset contains 456 million normal transactions and 40 thousand risky transactions. The method begins with two user level statistical indicators. A z-score for sending frequency and a z-score for transaction amount. These indicators are computed separately for sender and receiver roles. Next, transaction level temporal features are derived to capture hourly and daily patterns. Clustering is then applied on the resulting representation space and the distribution of historically labeled risky transactions across clusters is examined. At this stage a risk score is assigned to each cluster based on the density of labeled risky transactions. The resulting pre risk score is appended to the original feature set and the final classification is performed with gradient boosted decision trees. Experimental results show that adding the pre risk score yields a meaningful increase in discrimination power and overall predictive performance compared with a baseline trained only on the core features. The method organizes behavioral clusters by risk under class imbalance and rapidly changing transaction dynamics, which supplies the classifier with clearer and more stable signals. The entire workflow is executed in a distributed manner within the Apache Spark ecosystem using PySpark and MLlib. The findings indicate that density based pre risk scoring offers an explainable and operationally effective framework for early and reliable detection of risky transactions in real time monitoring.

Keywords: Fraud Detection; Big Data; Anomaly Detection; Machine Learning; Clustering; Tree-Based Methods; Class Imbalance.

**ÜRETKEN TASARIM İLE KAPLIN OPTİMİZASYONU VE YAPISAL
DOĞRULAMA**
OPTIMIZATION AND STRUCTURAL VERIFICATION OF A COUPLING USING
GENERATIVE DESIGN

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ÖZET

Bu çalışmada bir kaplin bileşeni, üretken tasarım yaklaşımı temel alınarak optimize edilmiş ve ortaya çıkan tasarımın yapısal performansı kapsamlı sonlu elemanlar analizleri ile değerlendirilmiştir. Süreç, kaplinin fonksiyonel gereksinimlerini karşılayan başlangıç geometrisinin SolidWorks ortamında modellenmesi ve ardından Autodesk Fusion 360'a aktarılmasıyla başlamış; tasarım uzayı, korunacak ve engellenecek bölgeler, yükleme koşulları, sınır şartları ve katmanlı üretime yönelik üretim kısıtları tanımlanarak üretken tasarım senaryoları oluşturulmuştur. Malzeme özellikleri, minimum güvenlik katsayısı, üretim yönelimi, minimum duvar kalınlığı ve geometrik tasarım hedefleri dikkate alınarak çeşitli alternatif modeller elde edilmiştir. Üretilen tasarımlar, gerilme dağılımı, şekil değiştirme davranışı, kütle, rijitlik ve genel üretilebilirlik açısından karşılaştırılmış; daha dengeli performans gösteren model ileri değerlendirme için seçilmiştir. Bu seçilen model ANSYS ortamında yeniden meshlenerek aynı yükleme koşulları altında analiz edilmiş ve üretken tasarım sürecinin öngördüğü yapısal davranışın farklı analiz platformlarında benzer eğilimler sergilediği görülmüştür. Ayrıca optimize edilen kaplinin katmanlı üretime uygunluğu PrusaSlicer yazılımı aracılığıyla incelenmiş; üretim süresi, malzeme tüketimi, katman yapısı ve üretim yönelimi gibi parametreler değerlendirilmiştir. Elde edilen sonuçlar, üretken tasarım yaklaşımının mekanik bileşenlerin hafifletilmesi, malzeme kullanımının azaltılması, yapısal performansın iyileştirilmesi ve katmanlı üretim teknolojileriyle uyumlu karmaşık geometrilerin elde edilmesi açısından önemli avantajlar sunduğunu göstermektedir. Bu çalışma, modern dijital tasarım ve hesaplamalı optimizasyon yöntemlerinin endüstriyel ürün geliştirme süreçlerinde sağlayabileceği katkıları ve potansiyeli ortaya koyarak yeni nesil mühendislik uygulamaları için yol gösterici bir nitelik taşımaktadır.

Anahtar Kelimeler: Üretken Tasarım, Kaplin Optimizasyonu, Sonlu Elemanlar Analizi (SEA), Katmanlı Üretim, Yapısal Değerlendirme

ABSTRACT

In this study, a coupling component was optimized using a generative design approach, and the structural performance of the resulting geometry was evaluated through finite element analysis. The process began with modeling the initial geometry in SolidWorks to meet the functional requirements of the coupling, followed by transferring the model into Autodesk Fusion 360. Within the generative design environment, the design space, preserved and obstacle regions, loading conditions, boundary constraints, and additive manufacturing limitations were defined to create suitable design scenarios. Considering the material properties, minimum safety factor, build orientation, minimum wall thickness, and geometric design objectives, several alternative design outcomes were generated. These outcomes were compared based on stress distribution, deformation behavior, mass, stiffness, and general manufacturability, and the most balanced model was selected for further analysis. The selected design was re meshed and re evaluated in ANSYS under identical loading conditions, confirming that the structural tendencies predicted by the generative design process were consistent across different simulation platforms. Additionally, the manufacturability of the optimized coupling was assessed using PrusaSlicer, where production time, material usage, layer structure, and manufacturing orientation were examined. The results demonstrate that the generative design approach offers significant advantages in reducing component weight, improving structural performance, enhancing material

efficiency, and enabling the creation of complex geometries suitable for additive manufacturing technologies. Overall, this study highlights the potential of modern digital design and computational optimization methods in industrial product development and emphasizes their value in supporting next generation engineering applications.

Keywords: Generative Design, Coupling Optimization, Finite Element Analysis (FEA), Additive Manufacturing, Structural Evaluation

**COLD SHOWERS AS AN ADJUNCT APPROACH TO BODY WEIGHT
MANAGEMENT: EVIDENCE ON BROWN ADIPOSE TISSUE ACTIVATION AND
ENERGY EXPENDITURE**

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ABSTRACT

Lifestyle factors, particularly dietary habits, play a significant role in the development of non-communicable diseases. Lifestyle modifications have become a cornerstone in addressing obesity, which has emerged as a global public health concern. In addition to dietary interventions, various supportive lifestyle approaches for body weight regulation are being discussed. Cold exposure, which has long been used in traditional and complementary medicine, is one such approach. Cold exposure can be achieved through several methods, including drinking cold water, cold compresses, cold showers, cold-water immersion, ice baths, and winter swimming. Considering lifestyle changes, cold showers stand out as a practical method that many individuals can incorporate into their daily routines. Recent studies suggest that cold showers may serve as an adjunct strategy in body weight management.

Cold showers have been reported to exert beneficial effects on cardiometabolic risk factors, increase brown adipose tissue activation, enhance energy expenditure, reduce stress hormones, improve alertness and cognitive perception, support psychological well-being, strengthen the immune system, and accelerate post-exercise recovery. The primary mechanism underlying their impact on body weight is thought to be the increased activation of brown adipose tissue and the associated rise in basal energy expenditure.

Current research indicates that cold showers can stimulate thermogenesis via the sympathetic nervous system, potentially leading to an additional daily energy expenditure of approximately 100–200 kilocalories. However, an increase in appetite following cold exposure has also been reported. Overall, despite these metabolic effects, cold showers alone are unlikely to result in clinically meaningful weight loss.

It should also be recognized that cold showers may have adverse effects in certain metabolic conditions and could negatively influence health. Furthermore, daily health status is shaped by numerous lifestyle components and cannot be attributed solely to a single behavior. Research suggests that while cold showers do not independently produce significant weight reduction, they may positively influence several health parameters. These effects may vary depending on factors such as water temperature, duration of exposure, and the extent of body surface area exposed to cold. It is important to remember that healthy lifestyle practices, including adequate and balanced nutrition, remain the fundamental determinants of body weight regulation. Although cold showers are not effective as a standalone method, they may enhance the benefits of healthy behaviors as a supportive strategy. Nevertheless, more comprehensive and high-quality studies are needed to clarify these effects.

Keywords: Cold shower, Brown adipose tissue, Thermogenesis, Body weight control, Lifestyle modifications

THE ROLE AND APPLICATIONS OF SPHERICAL FUZZY SETS IN QUANTITATIVE MULTI-CRITERIA DECISION-MAKING PROBLEMS

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Abstract

In today's complex and multidimensional decision-making processes, the evaluation of data characterized by uncertainty and incompleteness has become essential. In this context, classical fuzzy sets and their extensions often remain limited in modeling such uncertainty. Spherical Fuzzy Sets (SFS), a recently developed approach, offer a more flexible and accurate representation of multi-component uncertainty by simultaneously modeling the degrees of membership, indeterminacy, and non-membership under a three-dimensional norm. This study systematically examines the role of SFS in multi-criteria decision-making (MCDM) problems, explains their mathematical foundations, and compiles application examples from the literature. SFS-based approaches enable decision makers to express uncertainty, hesitation, and confidence levels more effectively, and to obtain more reliable results in criteria weighting and alternative ranking. By addressing both the theoretical and practical advantages of SFS, as well as their limitations and future research directions, this study serves as a comprehensive guide for researchers working in the field of MCDM.

Keywords: Spherical Fuzzy Sets, Multi-Criteria Decision Making (MCDM), Uncertainty Modeling, Decision Support Systems, Applications of Spherical Fuzzy Sets

**THE IMPACT OF STRESS ON ANESTHESIA TRAINING FOR STUDENTS IN THE
RABAT-SALÉ-KÉNITRA REGION IN MOROCCO :
THE MODERATING ROLE OF SELF-ESTEEM**

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ABSTRACT

The impact of stress on anesthesia training in the Rabat-Salé-Kénitra region was examined through a cross-sectional survey of 103 fifth-semester anesthesia students (mean age 20 years). Participants completed the Cohen Perceived Stress Scale (PSS-10) and the Toulouse Self-Esteem Scale (TES-18), allowing descriptive, ANOVA, and linear-regression analyses. The cohort reported a mean perceived-stress score of 27.02 ± 5.34 , with 56 % classified as experiencing elevated stress. Physical self-esteem showed a modest yet significant positive association with total stress ($r = 0.32$, $p < 0.01$), corroborating previous evidence of the detrimental impact of stress on body-image perception. While higher stress levels were linked to poorer mental-health indicators, self-esteem functioned as a pivotal moderator: Students with higher self-esteem displayed reduced susceptibility to stress-related declines in well-being and academic performance, whereas those with low self-esteem were more vulnerable. These results underscore the necessity of interventions that bolster self-esteem to buffer stress effects within demanding anesthesia curricula.

Keywords: anesthesia students, academic stress, self-esteem, academic performance, anesthesia training.

**HUZUREVİNDE YAŞAYAN YAŞLILARDA SOLUNUM EGZERSİZLERİ: MEVCUT
LİTERATÜRÜN ANLATI TARZINDA (NARRATİF) İNCELENMESİ
BREATHING EXERCISES IN ELDERLY NURSING HOMES: A NARRATIVE
REVIEW OF THE CURRENT LITERATURE**

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Özet

Yaşlılık, bireyin fizyolojik, biyolojik ve psikososyal yapılarında geri dönüşü olmayan değişikliklerin meydana geldiği doğal bir süreçtir. Bu süreç, birçok sistemin fonksiyonel kapasitesinde azalmaya yol açmakta ve bireylerin bağımsız yaşamını, sağlık durumunu ve yaşam kalitesini doğrudan etkilemektedir. Özellikle solunum sistemi, yaşlanma ile birlikte ciddi anatomik ve fizyolojik değişimlere uğramakta; akciğer elastikiyetinin azalması, göğüs kafesinin rijit hale gelmesi, solunum kas gücünde azalma ve gaz değişiminde bozulmalar meydana gelmektedir. Bu durum, yaşlı bireylerde solunum fonksiyonlarında gerilemeye, egzersiz kapasitesinde azalmaya, enfeksiyon riskinin artmasına ve yaşam kalitesinde düşüşe neden olmaktadır. Bune ek olarak huzurevlerinde yaşayan yaşlı bireylerin, çevresel ve sosyal faktörlerin de etkisiyle fiziksel aktivite düzeylerinde azalma ve sedanter yaşam tarzı da solunum kapasitelerinde azalma yaratan faktörler arasındadır. Solunum egzersizleri, solunum kaslarının kuvvetlendirilmesi, ventilasyonun artırılması, sekresyonların temizlenmesi, dispnenin azaltılması ve göğüs kafesinin hareketliliğinin artırılması gibi çok yönlü faydalar sağlayan, düşük maliyetli ve evde uygulanabilir bir egzersiz türüdür. Literatürde solunum egzersizlerinin, yaşlı bireylerde solunum fonksiyonlarını, uyku kalitesini, dengeyi ve fonksiyonel bağımsızlığı artırdığı gösterilmiştir. Ancak literatürde huzurevinde yaşayan yaşlılarda uygulanan solunum egzersizlerinin etkisinin incelendiği çalışmalar sınırlıdır. Bu nedenle, huzurevi ortamındaki yaşlı bireylerde solunum egzersizlerinin etkilerini inceleyen yeni araştırmalara ihtiyaç duyulmaktadır. Bu çalışmanın amacı, huzurevinde yaşayan yaşlı bireylerde solunum egzersizleri konusunda yapılmış araştırmaları inceleyerek, mevcut durumu anlatı tarzında ortaya koymak ve yapılacak çalışmalara yaşlı bireylere özel egzersiz protokollerinin geliştirilmesi ve tedavi planlarına entegre edilmesi konusunda yardımcı olabilecek önerilerde bulunmaktır.

Abstract

Aging is a natural process characterized by irreversible changes in an individual's physiological, biological, and psychosocial structures. This process leads to a decline in the functional capacity of many systems and directly affects individuals' independent living, health status, and quality of life. In particular, the respiratory system undergoes significant anatomical and physiological changes with aging, including a reduction in lung elasticity, increased rigidity of the chest wall, decreased respiratory muscle strength, and impaired gas exchange. This situation leads to a

decline in respiratory function, reduced exercise capacity, increased risk of infection, and a decreased quality of life in elderly individuals. In addition, a decrease in physical activity levels and a sedentary lifestyle among elderly individuals living in nursing homes, influenced by environmental and social factors, are also factors contributing to a decrease in respiratory capacity. Breathing exercises are a low-cost, home-based exercise type that provides multiple benefits, including strengthening the respiratory muscles, increasing ventilation, clearing secretions, reducing dyspnea, and improving chest wall mobility. The literature shows that breathing exercises improve respiratory function, sleep quality, balance, and functional independence in the elderly individuals. However, there are limited studies in the literature examining the effects of breathing exercises in elderly individuals living in nursing homes. Therefore, new research examining the effects of breathing exercises on elderly individuals living in nursing homes is needed. The aim of this study is to review existing research on breathing exercises in elderly individuals living in nursing homes, describe the current situation in a narrative style, and provide recommendations that could assist future studies in developing exercise protocols specific to elderly individuals and integrating them into treatment plans.

AN EVALUATION OF JOB SATISFACTION AND EFFICIENCY AMONG HOTEL WORKERS: A STUDY OF CONCORD HOTEL, OWERRI, IMO STATE

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Abstract

Job satisfaction and efficiency are the priorities of workers to ensure that resounding and enticing services are rendered to the consumers. These factors could be used to evaluate whether the consumers and workers are satisfied with what they receive or do. The study evaluated the level of job satisfaction and efficiency among hotel workers using Concord Hotel in Owerri, Imo State, Nigeria as a case study. It also revealed some fundamental factors that help to improve workers' job satisfaction and efficiency. The objectives of this study were achieved through qualitative research design in which in-depth interviews and observation were adopted as methods of data collection. The sampled population include the workers of the hotel that were chosen using simple random and purposive sampling techniques. The findings revealed that most of the workers in Concord Hotel are satisfied with their job and rendered efficient services to the customers. It also revealed that the factors that enhance job satisfaction and efficiency in this hotel include reasonable salary increment, conducive environment, good employer-staff relationship, adequate facilities, effective security management, regular training, trust and affection, rewards for dedication, effective team work, adherent to service policies, and regular evaluation. The study recommends that workers must be motivated to ensure quality service delivery and satisfaction.

Keywords: Job satisfaction; job efficiency; hotels; Concord hotel, Imo State; Nigeria.

DÜNYA VE TÜRKİYE'DE KADIN SAĞLIĞININ DURUMU: GÜNCEL VERİLERİN DEĞERLENDİRİLMESİ

THE STATUS OF WOMEN'S HEALTH IN THE WORLD AND TÜRKİYE: EVALUATION OF CURRENT DATA

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ÖZET

Kadın sağlığı, biyolojik, psikososyal ve toplumsal etmenlerin karşılıklı etkileşimiyle şekillenen çok boyutlu bir iyilik hali olarak tanımlanmaktadır. Küresel ölçekte nüfusun yaklaşık yarısını kadınlar oluşturmaktadır. Küresel verilere bakıldığında kadınların yaşam süresi erkeklere göre daha uzun olmasına rağmen, kanama bozuklukları, kardiyovasküler komplikasyonlar ve ilaçlara karşı artmış hassasiyet gibi çeşitli sağlık riskleri nedeniyle kadınlar yaşamlarının önemli bir bölümü hastalık yükü altında geçmektedir. Bu durum, kadınların sağlık bakımında özel bir grup olarak değerlendirilmesini gerektirmektedir. Toplumsal cinsiyet eşitsizliği, sağlık hizmetlerine erişim güçlükleri ve sosyokültürel engeller kadın sağlığını olumsuz etkileyerek önemli bir halk sağlığı sorunu oluşturmaktadır. Kadın sağlığını önemli ölçüde etkileyen doğurganlık oranları dünya genelinde düşüş göstermektedir. Türkiye'de ise doğurganlık oranı 1.48'e gerilemiştir. Anne ölüm oranları küresel düzeyde önemli ölçüde azalmasına rağmen özellikle düşük ve orta gelirli ülkelerde yüksek seyretmekte ve ölümlerin büyük kısmı önlenabilir nedenlerden kaynaklanmaktadır. Aile planlaması yöntemlerine erişim, doğum öncesi bakım alma ve nitelikli sağlık personeli tarafından gerçekleştirilen doğumlar kadın sağlığının iyileştirilmesinde kritik göstergelerdir. Bununla birlikte, kadın sağlığına özgü kanser türlerinde tarama ve erken tanı oranlarının ülkeler arasında belirgin düzeyde farklılık gösterdiği görülmektedir. Kadına yönelik şiddet, eğitim düzeyi ve düşük istihdam oranları ise kadınların sosyal konumunu ve sağlık sonuçlarını olumsuz etkilemeye devam etmektedir. Bu nedenle kadın sağlığının geliştirilmesinde sağlık sisteminin güçlendirilmesi, eşitsizliklerin azaltılması ve hemşirelik uygulamalarının etkinleştirilmesi önem taşımaktadır.

Anahtar Kelimeler: Kadın sağlığı, anne sağlığı, sağlık göstergeleri, hemşirelik

ABSTRACT

Women's health is defined as a multidimensional state of well-being shaped by the interaction of biological, psychosocial, and social factors. Globally, women constitute approximately half of the population. Globally, although women have a longer lifespan than men, they still experience a significant portion of their lives burdened by illness due to various health risks, such as bleeding disorders, cardiovascular complications, and increased sensitivity to medications. This necessitates considering women as a special group in healthcare. Gender inequality, difficulties in accessing healthcare, and sociocultural barriers negatively impact women's health, creating a significant public health problem. Fertility rates, which significantly impact women's health, are declining globally. In Turkey, the fertility rate has decreased to 1.48. Although maternal mortality rates have decreased significantly globally, they remain high, particularly in low- and middle-income countries, and the majority of deaths are due to preventable causes. Access to family planning methods, prenatal care, and births attended by

qualified healthcare personnel are critical indicators for improving women's health. However, screening and early diagnosis rates for cancers specific to women's health vary significantly across countries. Violence against women, educational attainment, and low employment rates continue to negatively affect women's social position and health outcomes. Therefore, strengthening the health system, reducing inequalities, and activating nursing practices are crucial for improving women's health.

Keywords: Women's health, maternal health, health indicators, nursing

DOĞUMDAN SONRA İLK ADIM: POSTPARTUM AİLE PLANLAMASINDA BELİRLEYİCİ ETKENLER

THE FIRST STEP AFTER BIRTH: DETERMINING FACTORS IN POSTPARTUM FAMILY PLANNING

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ÖZET

Doğum sonrası dönem, bebek, plasenta ve membranlar doğduktan sonra sonraki 6-8 haftalık süreyi kapsayan 'doğumdan kadının vücudunun gebelik öncesi duruma dönmesine kadar geçen süre' olarak tanımlanmaktadır. Postpartum dönem annenin yaşadığı fizyolojik ve ruhsal değişiklikler, aile düzeni değişimleri, maternal-neonatal mortalite ve morbiditenin en çok meydana geldiği dönem olması nedeniyle anne ve yenidoğan için kritik önem taşımaktadır. Dünya Sağlık Örgütü 2023 yılında her gün 700'den fazla kadının gebelik ve doğum ile ilgili nedenlerden hayatını kaybettiğini bildirmektedir. Türkiye'de ise anne ölüm oranı 100.000 canlı doğumda 13.5 olarak ifade edilmektedir. Doğum sonrası erken dönemde kadınlar tekrardan gebe kalması maternal ve fetal sağlık açısından risk oluşturmaktadır. DSÖ, bir canlı doğum sonrasında diğer gebeliğin en az iki yıl sonra gerçekleşmesi gerektiğini ifade etmektedir. Bu nedenle doğum sonrası bakımın önemli bileşenlerinden biri de aile planlamasıdır. Postpartum dönemdeki kadınlar, planlanmamış gebelikler açısından yüksek risk grubundadır ve kadınların %10-44'ünde ilk bir yıl içerisinde istenmeyen gebelik meydana gelmektedir. Bu nedenle postpartum dönemdeki kadınlar aile planlaması yöntemlerine karşı olumlu tutumda olup, yöntem kullanmaya eğilimli olmaktadır. Gebelik öncesinde kontraseptif yöntem kullanılmaması, düşük eğitim düzeyi ve kontrasepsiyon eğitimi alınmaması plansız gebeliklerin oluşmasında rol oynamaktadır. Kadınların doğum sonrası dönemde sıklıkla eğitim talep ettiği konuların arasında cinsel ilişkiye başlama zamanı ve aile planlaması olduğu ifade edilmektedir. Hemşireler doğum sonrası dönemde kadınlar ile en yakın iletişimde olan sağlık çalışanlarıdır. Hemşirelerin AP üzerinde kanıta dayalı güncel bilgilere sahip olması, kadınların karşılanmamış bilgi gereksinimini karşılamaları, kadınlara rehberlik ve danışmanlık yapmaları kadın sağlığının geliştirilmesinde ve korunmasında etkili olacaktır.

Anahtar Kelimeler: Doğum sonu dönem, aile planlaması, hemşire

ABSTRACT

The postpartum period is defined as the 6-8 weeks following the birth of the baby, placenta, and membranes, the period between birth and the time when the woman's body returns to its pre-pregnancy state. The postpartum period is critical for both mothers and newborns because it encompasses the physiological and psychological changes experienced by the mother, changes in family structure, and the period during which maternal and neonatal mortality and morbidity occur most frequently. The World Health Organization reported that more than 700 women died every day from pregnancy and childbirth-related causes in 2023. In Turkey, the maternal mortality rate was reported as 13.5 per 100,000 live births. Women becoming pregnant again in the early postpartum period poses a risk to maternal and fetal health. The WHO recommends that another pregnancy occur at least two years after a live birth. Therefore, family planning is an important component of postpartum care. Postpartum women are at high risk for unplanned

pregnancies, with 10-44% experiencing an unintended pregnancy within the first year. Therefore, postpartum women tend to have positive attitudes toward family planning methods and are more likely to use them. Not using contraceptive methods before pregnancy, low education level and lack of contraception training play a role in the occurrence of unplanned pregnancies. Among the topics women frequently request training on initiating sexual intercourse and family planning are reportedly discussed. Nurses are the healthcare professionals who have the closest contact with women in the postpartum period. Having up-to-date evidence-based information on family planning, meeting women's unmet information needs, and providing guidance and counseling will be effective in improving and protecting women's health.

Keywords: Postpartum period, family planning, nurse

KADININ YAŞAM DÖNGÜSÜNDE KRİZLER VE EBELİK YAKLAŞIMLARI CRISES IN WOMEN LIFE CYCLE AND MIDWIFERY APPROACHES

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ÖZET

Kadın, yaşam döngüsü çerçevesinde anne rahminden başlayarak, çocukluk, ergenlik, erişkinlik, yaşlılık gibi farklı dönemlerden geçmektedir. Kadınlar yaşam dönemlerinin her hangi birinde; belirli bir yaşam olayını izleyen, hayati önem taşıyan kritik, duygusal zorlanmalar sonucunda akut ve süre sınırlı bir biçimde ruhsal dengenin bozulması olarak tanımlanan çeşitli krizler yaşayabilmektedir. Her kriz kadına özgü etkiler ve buna bağlı olarak bireysel baş etme tepkilerini de beraberinde getirmektedir.

Bu derlemenin amacı, ulusal ve uluslararası güncel literatür doğrultusunda kadınların yaşam döngüsünde yaşanan krizler ve ebelik yaklaşımları konusunda kadınları ve sağlık çalışanlarını bilgilendirmektir.

Kadının yaşam döngüsünde önemli dönüm noktalarını oluşturan ergenlik dönemi, gebelik ve menopoz dönemlerinde daha yoğun kriz yaşayabilirler. Krizleri, yaş, cinsiyet, kişinin yaşama bakış açısı, inanç sistemi, sosyal destek ağları, sağlık ve ekonomik sorunlar etkiler. Kadınlarda krizler, daralma krizleri (bir takım şeylerin bizim istediğimiz gibi olmaması, örneğin, hastalık, yoksulluk, maddesel kayıp veya sosyal destek kaybı, ekonomik kriz vb.), değişim krizleri (büyük değişimler, inovasyon zamanları örneğin, yeni bir iş, aşık olmak, ana-baba olmak, yeni düşüncelerin gelişimi ve işe koşulması, yeni pazarlar), çözülme krizleri (ilişkilerin çözülmesi; ayrılma, boşanma, grup içinde çözilemeyen bir çatışmanın ayrılma ile sonuçlanması) ve dönüşüm krizleri (ölüm, doğum, özdeşim değişimi gibi) olarak görülebilir. Krizlerde kadınlarda genel olarak, yoğun iç sıkıntısı, kaçınma ya da aşırı kaygı, depresyon, davranışlarda değişimler, öfke, utanma ve suçluluk gibi tepkiler görülebilir. Krizler doğru yönetilmediğinde psikososyal sorunlara yol açabilir.

Toplum sağlığının ve özellikle kadın sağlığının korunmasında ebelerin bakım, eğitim, danışmanlık ve savunuculuk konusunda önemli sorumlulukları vardır. Bu nedenle kadının sağlık bakımı yaşam döngülerine göre doğumundan ölümüne kadar bir bütün olarak ele alınmalı, taramalar yapılmalı ve tespit edilen krizlerin çözümü için adımlar atılmalıdır. Sağlıklı kadın, sağlıklı toplum demektir.

Anahtar Kelimeler: Yaşam döngüsü, kadın, kriz, ebe

ABSTRACT

A woman goes through different stages within the life cycle, starting from the womb, followed by childhood, adolescence, adulthood, and old age. Women may experience various crises at any stage of life; these are defined as disruptions in mental balance that occur acutely and temporarily as a result of critical, emotionally challenging events that follow a significant life event. Each crisis brings effects unique to the woman, along with individual coping responses.

The purpose of this review is to inform women and healthcare professionals about the crises experienced in women's life cycles and midwifery approaches in line with current national and international literature.

Women may experience more intense crises during puberty, pregnancy, and menopause, which are significant milestones in their life cycle. These crises are influenced by age, gender, a person's outlook on life, belief system, social support networks, health, and economic issues. Crises in women can be seen as contraction crises (when certain things do not go the way we want, such as illness, poverty, material loss, loss of social support, economic crisis, etc.), change crises (major changes, times of innovation, for example, a new job, falling in love, becoming a parent, the development and application of new ideas, new markets), dissolution crises (the dissolution of relationships; separation, divorce, or a conflict within a group that cannot be resolved resulting in separation), and transformation crises (such as death, birth, or changes in self-identification). In times of crisis, women generally may experience intense inner distress, avoidance or excessive anxiety, depression, changes in behavior, anger, shame, and feelings of guilt. If crises are not managed properly, they can lead to psychosocial problems.

Midwives have important responsibilities in care, education, counseling, and advocacy in protecting public health, especially women's health. Therefore, women's healthcare should be considered as a whole throughout their life cycles, from birth to death; screenings should be conducted, and steps should be taken to resolve identified crises. A healthy woman means a healthy society.

Keywords: Life cycle, woman, crisis, midwife

**KONUŞMACI VE ORTAMA DAYALI DEEPFAKE SES TESPİTİNE YÖNELİK
UYGULAMALI BİR YAKLAŞIM**
AN APPLIED APPROACH TO SPEAKER AND ENVIRONMENT BASED DEEPFAKE
AUDIO DETECTION

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ÖZET

Yapay zekâ destekli ses üretim teknolojilerindeki gelişmeler, insan sesinin gerçeğe oldukça yakın biçimde taklit edilmesini mümkün hâle getirmiştir. Bu durum, “deepfake” olarak adlandırılan sahte kayıtların artmasına neden olarak, kimlik doğrulama sistemleri ve adli ses incelemelerinde güvenlik açıklarına yol açmaktadır. Mevcut çalışmalar incelendiğinde, deepfake ses tespitinde çoğu yaklaşımın yalnızca konuşmacıya ait ses özelliklerine odaklandığı görülmektedir. Konuşmacı temelli göstergeler (MFCC, Mel-spectrogram, x-vector vb.) sahte ses üretiminde etkili olsa da kayıt ortamına ilişkin arka plan gürültüsü, yankı ve mekânsal akustik izler genellikle yeterince değerlendirilmemektedir. Pratik uygulamalarda ise, konuşmacı özelliklerinin başarılı biçimde taklit edilebildiği; lakin ortam karakteristiklerinin çoğu zaman sahte üreticiler tarafından tam olarak kopyalanamadığı gözlemlenmektedir.

Bu çalışmada hem konuşmacıya özgü hem de ortam akustiğine dayalı işaretleri birlikte değerlendiren küçük ölçekli bir model önerilmektedir. Model, CNN (Convolutional Neural Network) tabanlı bir ön işleme aşaması ile frekans–zaman temsillerinden yüksek düzeyde ayırt edici özellikleri çıkarmakta; ardından BILSTM (Bidirectional Long Short-Term Memory) katmanları aracılığıyla bu özelliklerin zamansal bağımlılıklarını analiz etmektedir. Veri kümesi, VoxCeleb1 alt kümesi ve ASVspoof 2021 veri setinden seçilen örneklerin birleştirilmesiyle oluşturulmuştur. Model, farklı ortam koşullarında (gürültü, yankı, filtreleme) test edilerek genellenebilirliği değerlendirilmiştir.

Elde edilen sonuçlar, ortam akustik izlerinin modele dâhil edilmesinin tespit doğruluğunu anlamlı ölçüde artırdığını göstermektedir. Arka plandaki hafif gürültü ve ortam yankısı, sahte kayıtların tespitinde öngörülenden daha etkili bir rol oynamıştır. Bu bulgular, gelecekte geliştirilecek tespit sistemlerinde konuşmacı ve ortam verilerinin birlikte analiz edilmesinin kritik bir gereklilik olduğunu ortaya koymaktadır. Ayrıca küçük veri setlerinde bile yüksek başarı sağlanması, yöntemin hem hesaplama açısından verimli hem de gerçek dünyada uygulanabilir olduğunu göstermektedir.

Anahtar Kelimeler: Deepfake ses tespiti, konuşmacı tanıma, ortam akustiği, CNN–BILSTM, derin öğrenme.

ABSTRACT

In recent years, rapid advancements in AI-based speech synthesis techniques have made it considerably easier to generate counterfeit recordings that closely resemble real human voices. This development has raised new security concerns in critical areas such as identity verification systems, call centers, and forensic audio analysis. A review of existing studies shows that most approaches to deepfake audio detection focus primarily on speaker-specific acoustic features. While speaker-related indicators (e.g., MFCC, Mel-spectrogram, x-vector) are effective in

detecting synthetic speech, environmental acoustic traces such as background noise, reverberation, and spatial characteristics are often underutilized. In practical scenarios, speaker characteristics can be successfully mimicked, whereas the acoustic properties of the recording environment are frequently not accurately reproduced by deepfake generators.

In this study, we propose a small-scale model that jointly analyzes both speaker-specific and environmental acoustic cues. The model employs a CNN (Convolutional Neural Network)–based preprocessing stage to extract high-level frequency–time representations, followed by BILSTM (Bidirectional Long Short-Term Memory) layers to capture their temporal dependencies. The dataset is constructed by combining a subset of VoxCeleb1 with selected samples from the ASVspoof 2021 dataset. The model was evaluated under various environmental conditions (noise, reverberation, filtering) to assess its generalizability.

The results demonstrate that incorporating environmental acoustic cues significantly improves detection accuracy. Light background noise and room reverberation were found to play a more effective role in distinguishing fake recordings than initially expected. These findings highlight the critical importance of jointly analyzing speaker and environmental information in future deepfake audio detection systems. Moreover, achieving high performance even with small datasets indicates that the proposed approach is both computationally efficient and practically applicable.

Keywords: Deepfake audio detection, speaker recognition, environmental acoustics, CNN–BILSTM, deep learning.

ANNELERİN SOSYAL MEDYA KULLANIMININ EMZİRMEYE ETKİLERİ
THE EFFECTS OF MOTHERS' SOCIAL MEDIA USE ON BREASTFEEDING

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ÖZET

Emzirme, yenidoğanın optimal büyüme, gelişme ve bağışıklık kazanımı için temel bir beslenme yöntemidir. Anne sütü, bebek beslenmesinde en ideal ve vazgeçilmez kaynaktır. Bebeğin ilk altı ay boyunca yalnızca anne sütüyle beslenmesi, büyüme, gelişme ve bağışıklık açısından kanıta dayalı olarak en uygun yaklaşım kabul edilmektedir.

Bu nedenle emzirmenin desteklenmesi, hem bireysel hem de toplumsal düzeyde önemli bir sağlık önceliğidir. Günümüzde dijital platformlar, annelerin bilgiye erişim ve deneyim paylaşımı için sıklıkla tercih ettiği araçlar haline gelmiştir. Annelerin bilgiye erişim davranışlarının dijitalleşmesiyle birlikte sosyal medya, emzirme sürecini etkileyen başlıca unsurlardan biri hâline gelmiştir. Bu çalışma, annelerin sosyal medya kullanımının emzirme üzerindeki etkilerini mevcut literatür doğrultusunda değerlendirmeyi amaçlamaktadır.

Literatür taraması kapsamında, “sosyal medya”, “emzirme”, “postpartum”, “bebek beslenmesi”, “kadın sağlığı” ve “dijital sağlık” anahtar kelimeleri kullanılarak Google Akademik, PubMed, Web of Science, Science Direct, Wiley Online Library, Taylor&Francis veri tabanlarında arama yapılmış ve ulusal ve uluslararası makaleler incelenmiştir.

Yapılan çalışmalar emziren annelerin sosyal medya gibi dijital kanalları sıklıkla kullandığı, bilgi almanın yanı sıra, destek ve deneyim paylaşma platformu olarak da kullandıkları belirlenmiştir. Birçok çalışmanın bulgularına göre, aile, arkadaş, akraba ya da geleneksel medya gibi sosyal destek kanallarıyla karşılaştırıldığında; internet temelli bilgi ve destek platformlarının anneler üzerinde daha fazla etki yarattığı görülmüştür. Dijital ortamdan sağlanan bu desteğin, emzirme davranışının hem sıklığını hem de devamlılığını anlamlı düzeyde artırdığı ortaya konmuştur. Ancak yine de sosyal medyada yanlış bilgilerin hızla yayılma olasılığı güvenilir bilgiye erişmenin önündeki engellerden biri olarak önemini korumaktadır.

Sonuç olarak sosyal medya, emzirme üzerinde çift yönlü bir etkiye sahiptir. Faydalı içeriklerle annenin bilgi ve motivasyonunu güçlendirirken, doğruluğu kanıtlanmamış paylaşımlar risk oluşturmaktadır. Bu nedenle sağlık profesyonellerinin sosyal medya alanında daha aktif rol alması, kanıta dayalı bilgi sunması ve annelerin doğru kaynaklara yönlendirilmesi büyük önem taşımaktadır.

Anahtar Kelimeler: Anne, Bebek Beslenmesi, Emzirme, Sosyal Medya, Emzirme

ABSTRACT

Breastfeeding is a fundamental method of nutrition for the optimal growth, development, and immune acquisition of newborns. Breast milk is the ideal and indispensable source in infant feeding. Exclusive breastfeeding for the first six months of life is considered the most appropriate evidence-based approach in terms of growth, development, and immunity.

Therefore, promoting breastfeeding is an important health priority at both individual and societal levels. Today, digital platforms have become frequently preferred tools for mothers to access information and share experiences. With the digitalization of mothers' information-seeking behaviors, social media has become one of the main factors influencing the breastfeeding process. This study aims to evaluate the effects of mothers' social media use on breastfeeding in light of the current literature.

In the literature review, searches were conducted in Google Scholar, PubMed, Web of Science, Science Direct, Wiley Online Library, and Taylor & Francis databases using the keywords "social media," "breastfeeding," "postpartum," "infant feeding," "women's health," and "digital health," and both national and international articles were examined.

The studies revealed that breastfeeding mothers frequently use digital channels such as social media not only for obtaining information but also as platforms for support and experience sharing. According to many studies, compared to social support channels like family, friends, relatives, or traditional media, internet-based information and support platforms have a greater impact on mothers. The support provided through digital environments was shown to significantly increase both the frequency and duration of breastfeeding. However, the rapid spread of misinformation on social media remains an important barrier to accessing reliable information.

In conclusion, social media has a bidirectional effect on breastfeeding. While beneficial content can enhance mothers' knowledge and motivation, unverified information poses a risk. Therefore, it is crucial for healthcare professionals to take a more active role in social media, provide evidence-based information, and guide mothers to reliable sources.

Keywords: Mother, Infant Feeding, Breastfeeding, Social Media, Lactation

**KADIN VE ERKEKTE GENİTAL ESTETİK CERRAHİYE YÖNELİM VE
ETKİLEYEN FAKTÖRLER**
ORİENTATION TOWARD GENİTAL AESTHETIC SURGERY AND INFLUENCING
IN WOMEN AND MEN

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ÖZET

Kozmetik-estetik jinekoloji, sağlıklı bireylerde tıbbi gereklilik olmaksızın cinsel organın görünümünü değiştirmeye yönelik cerrahi ve cerrahi dışı uygulamaları kapsayan bir alandır. Dünya Sağlık Örgütü'nün sağlığı “fiziksel, ruhsal ve sosyal yönden tam bir iyilik hali” olarak tanımlamasından hareketle, estetik cerrahi uygulamalarının beden algısı ve zihinsel iyilik hâli üzerindeki etkileri bu alanın etik tartışmalarında belirleyici olmaktadır.

Bu çalışma, genital kozmetik cerrahisine ilişkin literatürü inceleyerek bu uygulamaların beden imajı, özgüven, yaşam kalitesi ve cinsel sağlık üzerindeki etkilerini değerlendirmeyi; ayrıca kadın ve erkeklerde tercih nedenleri ile bu nedenleri şekillendiren faktörleri ortaya koymayı amaçlamaktadır. Literatür taraması kapsamında, Google Akademi, PubMed, Scopus, SpringerLink ve ResearchGate veri tabanlarında “genital estetik”, “labioplasti”, “medya”, “kadın”, “erkek”, “penis” ve “vulva” anahtar kelimeleri kullanılarak ulusal ve uluslararası çalışmalar incelenmiştir.

Uluslararası Estetik Plastik Cerrahi Derneği'nin 2016 yılı değerlendirmesine göre, 2015'ten itibaren labioplasti uygulamalarında %45 oranında belirgin bir artış gözlenirken, aynı yıl en az uygulanan kozmetik cerrahi işlem ise %28'lik bir düşüşle penis büyütme olmuştur. Sosyokültürel etkilerin yanı sıra, klinik gereksinimler, kişisel beden imajı memnuniyetsizliği ve psikolojik faktörler de bireylerin genital estetik girişimlere yönelmesinde tamamlayıcı bir rol üstlenmektedir. Erkeklerde penis uzunluğunun kültürel olarak erkeklik ve cinsel yeterlilikle ilişkilendirilmesi, popüler medya ve pornografik içeriklere maruziyetle birleşerek, anatomik olarak normal sınırlarda olan bireylerde dahi estetik talebini artırmaktadır. Kadınlarda ise talepler; olumsuz toplumsal tutumlar, pornografik yayınlardaki “Barbie Bebek” vulva idealizasyonu, cinsel tatminde azalma algısı ve görünüm kaynaklı bireysel rahatsızlıklarla

ilişkili olarak ortaya çıkmaktadır.

Sonuç olarak, genital estetik taleplerinde medya etkisiyle çarpıtılan toplumsal güzellik ve yeterlilik normları temel itici güçtür. Bu durum, sağlık profesyonellerinin genital estetik uygulamalar konusunda güncel ve kapsamlı bilgiye sahip olmasını; hastaların cerrahi öncesinde psikososyal açıdan doğru şekilde değerlendirilmesini ve bilgilendirilmiş onam sürecinin titizlikle yürütülmesini etik ve güvenli bir uygulama zemini açısından kritik kılmaktadır.

Anahtar Kelimeler: *Genital estetik, labioplasti, sosyal medya, kadın, erkek, penis, vulva, kozmetik*

ABSTRACT

Cosmetic-Esthetic Gynecology refers to surgical and non-surgical procedures aimed at altering the appearance of the genital organs in healthy individuals without medical necessity. Based on the World Health Organization's definition of health as "a state of complete physical, mental, and social well-being," the impact of aesthetic surgical interventions on body image and mental well-being becomes a key determinant in the ethical debates surrounding this field.

This study aims to review the literature on genital cosmetic surgery, evaluating its effects on body image, self-esteem, quality of life, and sexual health, as well as identifying the reasons behind these preferences in women and men and the factors shaping them. For the literature review, national and international studies were examined using databases such as Google Scholar, PubMed, Scopus, SpringerLink, and ResearchGate with keywords including "genital aesthetics," "labiaplasty," "media," "women," "men," "penis," and "vulva."

According to the International Society of Aesthetic Plastic Surgery's 2016 report, since 2015, there has been a significant 45% increase in labiaplasty procedures, while the least performed cosmetic surgery in the same year was penile enlargement, which saw a 28% decline. In addition to sociocultural influences, clinical needs, dissatisfaction with personal body image, and psychological factors play a complementary role in individuals' inclination toward genital aesthetic interventions. In men, the cultural association of penile length with masculinity and sexual adequacy, combined with exposure to popular media and pornographic content, increases aesthetic demand even among individuals within normal anatomical limits. In women, demands are linked to negative societal attitudes, the idealization of the "Barbie Doll" vulva in pornographic publications, perceived reduction in sexual satisfaction, and appearance-related personal discomfort.

In conclusion, distorted societal norms of beauty and adequacy driven by media influence are the primary driving force behind genital aesthetic demands. This situation makes it critical for healthcare professionals to possess up-to-date and comprehensive knowledge about genital aesthetic procedures, to ensure patients are properly assessed psychosocially before surgery, and to conduct the informed consent process meticulously for an ethical and safe practice environment.

Keywords: *Genital aesthetics; labiaplasty; social media; women; men; penis; vulva; cosmetic*

INVESTIGATION OF EXISTENCE AND UNIQUENESS OF SOLUTION FOR A COVID-19 TRANSMISSION DYNAMICS MODEL USING PICARD'S METHOD

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Abstract

The COVID-19 pandemic, a global health crises caused by SARS-CoV-2 virus, has had a profound impact on humanity, with widespread social, economic, and public health consequences. The ongoing impact of the COVID-19 pandemic continues to pose a significant public health concern, with varying degrees of risk and challenges across different regions and countries. Although the development and distribution of effective vaccines have been instrumental in controlling the pandemic, ongoing efforts are focused on improving treatment options, addressing emerging variants, and enhancing global vaccination efforts. This study presents a four-compartmental model of COVID-19 transmission dynamics, comprising susceptible, quarantined, infected, and treated populations. Employing Picard's method, the model is rigorously analysed to investigate the existence and uniqueness of its solution, with the aim of establishing the well-posedness of the model, thereby providing a solid founding for further analysis and prediction of COVID-19 spread.

Keywords: Existence and uniqueness, COVID-19, Dynamics, Picard's method.

ÜNİVERSİTE ÖĞRENCİLERİNDE YOKSULLUĞUN GELİR VE HARCAMA DÜZEYLERİ ÜZERİNDEN İNCELENMESİ: KOCAELİ ÜNİVERSİTESİ ÖRNEĞİ¹
AN ANALYSIS OF POVERTY AMONG UNIVERSITY STUDENTS THROUGH INCOME AND EXPENDITURE LEVELS: THE CASE OF KOCAELİ UNIVERSITY

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ÖZET

Yoksulluk, günümüzde yalnızca mutlak gelir yetersizliği olarak değil, bireylerin toplumsal yaşama katılımını engelleyen, psikolojik iyi oluşlarını tehdit eden ve sosyal kısıtlanmaya yol açan çok boyutlu bir yoksunluk hali olarak tanımlanmaktadır. Özellikle ekonomik krizler ve enflasyonist baskılar, sabit veya sınırlı gelire sahip olan üniversite öğrencilerini bu çok boyutlu yoksulluk karşısında en kırılgan gruplardan biri haline getirmiştir. Bu çalışmanın amacı, Kocaeli Üniversitesi lisans öğrencileri örneği üzerinden, öğrencilerin gelir ve harcama düzeyleri ile yoksulluk deneyimleri arasındaki ilişkiyi çok boyutlu bir perspektifle incelemektir. Araştırma kapsamında nicel araştırma yöntemi benimsenmiş ve 2024-2025 eğitim döneminde Kocaeli Üniversitesi'nde öğrenim gören 947 lisans öğrencisine yüz yüze anket uygulanmıştır. Veri toplama aracı olarak literatürden uyarlanan ve bu çalışma kapsamında geçerlik ve güvenirlik analizleri yapılan çok boyutlu bir yoksulluk ölçeği kullanılmıştır. Verilerin analizinde Keşfedici Faktör Analizi (EFA), Çoklu Doğrusal Regresyon Analizi, Bağımsız Örneklemeler t-Testi ve ANOVA testleri kullanılmıştır. Araştırma bulgularına göre, öğrenci yoksulluğu dört temel boyut altında toplanmıştır: "Çok Boyutlu Kısıtlama ve Kaygı", "Finansal Başa Çıkma ve Borçlanma", "Çevresel Maliyet Algısı" ve "Destek ve Tasarruf Yeteneği". Analizler, öğrencilerin %66,9'unun kültür ve eğlence harcamalarından kısıtlama yaptığını, bu durumun sosyal kısıtlanma riskini artırdığını göstermiştir. Regresyon sonuçları, öğrenci gelirinin ve aile desteğinin artmasının kaygı düzeyini anlamlı ölçüde düşürdüğünü ortaya koymuştur. Ayrıca kadın öğrencilerin kaygı düzeylerinin erkeklere göre daha yüksek olduğu, barınma türü açısından ise aile yanında kalan öğrencilerin en düşük kaygı düzeyine sahip olduğu tespit edilmiştir. Çalışma, öğrenci yoksulluğunun sadece ekonomik desteklerle değil, sosyal ve psikolojik destek mekanizmalarıyla da ele alınması gerektiğini ortaya koymaktadır.

Anahtar Kelimeler: Öğrenci Yoksulluğu, Çok Boyutlu Yoksulluk, Gelir Düzeyi, Harcama Düzeyi

ABSTRACT

Poverty today is defined not only as absolute income insufficiency but also as a multidimensional state of deprivation that prevents individuals from participating in social life, threatens their psychological well-being, and leads to social exclusion. Especially during periods of economic crises and inflationary pressures, university students with fixed or limited incomes have become one of the most vulnerable groups in the face of this multidimensional poverty. The aim of this study is to examine, from a multidimensional perspective, the relationship between students' income and expenditure levels and their poverty experiences,

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using undergraduate students at Kocaeli University as a case example. A quantitative research method was adopted within the scope of the study, and face-to-face surveys were administered to 947 undergraduate students studying at Kocaeli University during the 2024–2025 academic year. As the data collection tool, a multidimensional poverty scale adapted from the literature and subjected to validity and reliability analyses for this study was used. In the analysis of the data, Exploratory Factor Analysis (EFA), Multiple Linear Regression Analysis, Independent Samples T-Test, and ANOVA tests were applied. According to the research findings, student poverty was grouped under four main dimensions: “Multidimensional Constraint and Anxiety,” “Financial Coping and Borrowing,” “Environmental Cost Perception,” and “Support and Saving Ability.” Analyses showed that 66.9% of students reduced their spending on cultural and entertainment activities, a situation that increases the risk of social exclusion. Regression results revealed that increases in student income and family support significantly reduced anxiety levels, while increases in expenditure levels negatively affected cost perception. Furthermore, it was found that female students had higher anxiety levels compared to male students, and that students living with their families had the lowest anxiety levels in terms of housing type. The study demonstrates that student poverty should be addressed not only through economic support but also through social and psychological support mechanisms.

Keywords: Student Poverty, Multidimensional Poverty, Income Level, Expenditure Level

**INVESTIGATION OF TRIBOLOGICAL AND SURFACE ROUGHNESS OF
ELECTRODEPOSITED Ni-W/AlN COMPOSITE COATINGS ON COPPER SUBSTRATES
BAKIR ALTILIKLAR ÜZERİNE ELEKTRODEPOLANAN Ni-W/AlN KOMPOZİT
KAPLAMALARIN TRİBOLOJİK VE YÜZEY PÜRÜZLÜLÜĞÜNÜN İNCELENMESİ**

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ABSTRACT

In this study, Ni, Ni-W, and Ni-W/AlN composite coatings with various AlN ratios were deposited on copper substrates by the electrodeposition method using direct current (50 mA/cm²) at 70 ± 0.2 °C for 60 minutes. Aluminum nitride (AlN) reinforcement was added to the bath medium at concentrations of 0, 5, 10, and 15 g/L; the coating structures were characterized in detail by wear and surface roughness tests. In the wear tests, the highest average friction coefficient was obtained with a value of 0.47 in the pure Ni coating, while the lowest friction coefficient was obtained with 0.38 in the Ni-W coating. The friction coefficients in the AlN reinforced coatings were measured as 0.41 for NiW5A, 0.39 for NiW10A, and 0.42 for NiW15A, respectively. The lowest value in terms of wear volume was determined in the NiW5A sample; the highest wear volume was observed in the NiW10A sample with an AlN content of 10 g/L. In the surface roughness measurements, Ra values were obtained as 0.281 µm, 0.137 µm, 0.120 µm, 0.083 µm, and 0.284 µm for Ni, NiW, NiW5A, NiW10A, and NiW15A coatings, respectively. The lowest Ra value was recorded in the NiW10A coating, and it was observed that the roughness decreased by approximately 70%. However, the Rz parameter was recorded as 0.788 µm in the NiW10A sample, the lowest value among all coatings.

Keywords: Electrodeposition, Ni-W, Wear Analysis, Surface Roughness, Copper Substrate

ÖZET

Bu çalışmada bakır altlıklar üzerine Ni, Ni-W ve farklı AlN oranlarına sahip Ni-W/AlN kompozit kaplamalar, doğru akım (50 mA/cm²) kullanılarak 70 ± 0.2 °C’de, 60 dakika süreyle elektropolama yöntemiyle biriktirilmiştir. Alüminyum nitrür (AlN) takviyesi banyo ortamına 0, 5, 10 ve 15 g/L konsantrasyonlarında eklenmiş; kaplama yapıları aşınma ve yüzey pürüzlülüğü testleri ile detaylı olarak karakterize edilmiştir. Aşınma testlerinde, en yüksek ortalama sürtünme katsayısı 0,47 değeri ile saf Ni kaplamada, en düşük sürtünme katsayısı ise 0,38 ile Ni-W kaplamada elde edilmiştir. AlN takviyeli kaplamalarda sürtünme katsayısı sırasıyla NiW5A için 0,41, NiW10A için 0,39 ve NiW15A için 0,42 olarak ölçülmüştür. Aşınma hacmi açısından en düşük değer NiW5A numunesinde belirlenmiş; en yüksek aşınma hacmi ise AlN içeriği 10 g/L olan NiW10A numunesinde gözlenmiştir. Yüzey pürüzlülüğü ölçümlerinde Ra değerleri Ni, NiW, NiW5A, NiW10A ve NiW15A kaplamaları için sırasıyla 0,281 µm, 0,137 µm, 0,120 µm, 0,083 µm ve 0,284 µm olarak elde edilmiştir. En düşük Ra değeri NiW10A kaplamasında kaydedilmiş olup pürüzlülüğün yaklaşık %70 oranında azaldığı görülmüştür. Bununla birlikte Rz parametresi NiW10A numunesinde 0,788 µm ile tüm kaplamalar içerisindeki en düşük değer olarak kaydedilmiştir.

Anahtar Kelimeler: Elektropolama, Ni-W, Aşınma Analizi, Yüzey Pürüzlülüğü, Bakır Altlık

DESIGN OPTIMIZATION AND STRUCTURAL ANALYSIS OF UPPER AND LOWER CONTROL ARMS IN DOUBLE WISHBONE SUSPENSION SYSTEMS
ÇİFT SALINCAKLI SÜSPANSİYON SİSTEMLERİNDE ÜST VE ALT SALINCAK KOLLARININ TASARIM OPTİMİZASYONU VE YAPISAL ANALİZİ

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ABSTRACT

This study investigated the structural performance and design optimization of upper and lower wishbones used in double wishbone suspension systems by comparing three design configurations (default, revision-1, revision-2) and two different materials (aluminum alloy and structural steel). The analyses used total deformation, equivalent (von Mises) stress, and factor of safety data. For the lower wishbone, the RL-2 design performed the most efficiently with both materials. Using aluminum alloy, RL-2 reduced the total deformation to 0.7287 mm compared to 0.8362 mm in the default design, while reducing the equivalent stress by 40% from 76.727 MPa (DL-1) to 45.761 MPa. In addition, RL-2 achieved a factor of safety of 6.1188, almost twice that of DL-1 (3.6493). In terms of weight, the RL-2 design reduced component mass by 27% in aluminum alloy and 26.75% in structural steel. In structural steel, the RL-2 design reduced stress by 40%, achieving a minimum stress of 50.406 MPa. In the upper control arm, the RU-1 design outperformed other configurations. Using aluminum alloy, the RU-1 reduced the equivalent stress from 74.489 MPa (DU-1) to 57.97 MPa, a 22% improvement, and increased the factor of safety from 3.7589 to 4.8301. Total deformation was also improved, decreasing from 0.756 mm to 0.6326 mm.

Keywords: Double Wishbone Suspension, Control Arm Design, Finite Element Analysis, Static Analysis

ÖZET

Bu çalışma, çift salıncaklı süspansiyon sistemlerinde kullanılan üst ve alt salıncak kollarının yapısal performansını ve tasarım optimizasyonunu, üç tasarım konfigürasyonunu (varsayılan, revizyon-1, revizyon-2) ve iki farklı malzemeyi (alüminyum alaşımı ve yapısal çelik) karşılaştırarak incelenmiştir. Analizler sonucunda toplam deformasyon, eşdeğer (von Mises) gerilme ve güvenlik faktörü verileri kullanılmıştır. Alt salıncak kolu için RL-2 tasarımı, her iki malzemede de en verimli performansı göstermiştir. Alüminyum alaşımı kullanan RL-2, toplam deformasyonu varsayılan tasarımdaki 0,8362 mm'ye kıyasla 0,7287 mm'ye düşürürken, eşdeğer gerilmeyi 76,727 MPa'dan (DL-1) %40 oranında 45,761 MPa'ya düşürmüştür. Ek olarak, RL-2, DL-1'in (3,6493) neredeyse iki katı olan 6,1188'lik bir güvenlik faktörüne ulaşmıştır. Ağırlık olarak incelendiğinde RL-2 tasarımı, alüminyum alaşımında bileşen kütlelerini %27 ve yapısal çelikte %26,75 azaltmıştır. Yapısal çelik malzemesinde ise RL-2 tasarımı, gerilimi %40 oranında azaltarak minimum 50,406 MPa gerilime ulaşmıştır. Üst salıncak kolunda ise RU-1 tasarımı diğer konfigürasyonlardan daha iyi performans göstermiştir. Alüminyum alaşımı kullanıldığında, RU-1 eşdeğer gerilimi 74,489 MPa'dan (DU-1) 57,97 MPa'ya düşürerek %22'lik bir iyileştirme sağlamış ve güvenlik faktörünü 3,7589'dan 4,8301'e çıkarmıştır. Toplam deformasyon da iyileştirilmiş ve 0,756 mm'den 0,6326 mm'ye düşmüştür. Anahtar Kelimeler: Çift Salıncaklı Süspansiyon, Salıncak Kolu Tasarımı, Sonlu Elemanlar Analizi, Statik Analiz

**ATIF MEHMED BEY'İN MECELLE ŞERHİ IŞIĞINDA HUKUKİ İSTİSNALAR:
“ZARURETLER MEMNU OLAN ŞEYLERİ MÜBAH KILAR” KAİDESİNİN ANALİZİ**
LEGAL EXCEPTIONS IN THE LIGHT OF ATIF MEHMED BEY'S COMMENTARY ON
THE MECELLE: AN ANALYSIS OF THE PRINCIPLE THAT ‘NECESSITIES MAKE
PROHIBITED THINGS PERMISSIBLE’

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ÖZET

Bu çalışma, Osmanlı hukuk düşüncesinin temel taşlarından biri olan Mecelle-i Ahkâm-ı Adliye’yi ve onun önemli şârihlerinden son devir Osmanlı âlimlerinden Kuyucaklızâde Atıf Mehmed Bey’in (ö. 1898) bu metne kazandırdığı özgün katkıları incelemektedir.

Medrese eğitimiyle temayüz eden, ilmî tahsilini Mısır’da tamamlayan ve Hanefî fıkhdaki derin bilgisiyle öne çıkan Atıf Bey, dönemin hukukî düşüncesine yön veren âlimler arasında yer almaktadır. Onun kaleme aldığı *Mecelle-i Ahkâm-ı Adliye Şerhi ve Kavâid-i Külliye’nin İzahı* adlı eseri, dönemin resmî ilmî otoritelerinden biri olan Fetvahâne tarafından büyük takdir görmüş; özlü, sistematik ve öğretici üslubuyla “kısa fakat son derece faydalı” bulunarak 1311/1893 yılından itibaren birçok kez neşredilmiştir.

Eser, Mecelle’nin hükümlerini açıklamanın yanı sıra Mecelle’nin temelini oluşturan küllî kaidelerin hukukî ve ahlâkî boyutlarını da derinlemesine ele alması açısından Osmanlı hukuk literatüründe özgün bir yere sahiptir.

Atıf Bey, şerhinde konuları sistematik bir biçimde tasnif etmiş; her bir küllî kaideyi ele alırken önce kavramların anlam çerçevesini açıklamış, ardından zıt ve sınır durumları dikkate alarak meseleyi bütüncül bir yaklaşımla değerlendirmiştir. Bu yöntem, onun hem teorik hem de pratik bir hukuk anlayışına sahip olduğunu göstermektedir.

Bu bildirinin merkezinde, hukukî istisnaların kapsamını ve sınırlarını belirleyen temel ilkelerden biri olan Mecelle’nin 21. maddesi yer almaktadır: “*Zaruretler memnu olan şeyleri mübah kılar.*”

Söz konusu madde, İslam hukukunda yasakların mutlak olmadığını, zaruret durumlarında geçici bir ruhsatın mümkün olabileceğini ifade eder. Böylelikle zorunluluk durumlarında ahlâkî değerler ile hukukî hükümler arasında uyumlu bir denge gözetir.

Anahtar Kelimeler: Mecelle, Atıf Mehmed Bey, Zaruret, Küllî Kaideler, Azimet, Ruhsat, Hukukî İstisna, Mübah.

ABSTRACT

This study examines the Mecelle-i Ahkâm-ı Adliye, one of the foundational pillars of Ottoman legal thought, and the original contributions brought to this text by Kuyucaklızâde Atıf Mehmed Bey (d. 1898), one of the prominent late Ottoman scholars and notable commentators of the Mecelle.

Atıf Bey, who excelled in madrasa education, completed his academic studies in Egypt, and stood out for his profound knowledge of Hanafî jurisprudence, was among the scholars who shaped the legal thought of his era. His work entitled Mecelle-i Ahkâm-ı Adliye Şerhi ve Kavâid-i Külliye'nin İzahı (Commentary on the Mecelle of Judicial Rulings and Explanation of the General Principles) was highly praised by the Fetvahâne, one of the official scholarly authorities of the period. and, with its concise, systematic and instructive style, was found to be 'short but extremely useful' and has been published many times since 1311/1893.

The work occupies a unique place in Ottoman legal literature, not only for its explanation of the provisions of the Mecelle, but also for its in-depth examination of the legal and ethical dimensions of the universal principles that form the basis of the Mecelle.

In his commentary, Atıf Bey systematically categorised the topics; when addressing each general principle, he first explained the conceptual framework, then evaluated the issue holistically, taking into account opposing and borderline cases. This method demonstrates that he possessed both a theoretical and practical understanding of law.

At the heart of this paper lies Article 21 of the Mecelle, one of the fundamental principles defining the scope and limits of legal exceptions: 'Necessity makes permissible that which is otherwise forbidden.'

The article in question states that prohibitions in Islamic law are not absolute and that temporary permission may be granted in cases of necessity. It thus seeks to strike a harmonious balance between moral values and legal provisions in situations of necessity.

Keywords: Mecelle, Atıf Mehmed Bey, Necessity, General Principles, Azimet, Licence, Legal Exception, Permissible.

**OPTIMIZATION OF LIPASE PRODUCTION FROM YARROWIA LIPOLYTICA
STRAIN ISOLATED FROM SPOILED LABNE CHEESE**

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ABSTRACT

A significant portion of global food consumption goes to waste. A significant portion of this is caused by microbial spoilage in foods. From the beginning of food production to the point of consumption at home, foods are exposed to microorganisms, and these microorganisms cause food spoilage. A sample of labneh cheese, purchased for consumption and found to have spoiled after being stored in the refrigerator, was isolated and purified. Following purification, the microorganism was identified as *Yarrowia lipolytica* with a genetic similarity of 99.06% using the CAP contig assembly algorithm within BioEdit software. Following identification, optimization studies were conducted for lipase production. First, time-dependent lipase production was investigated, with the highest lipase production detected at 96 hours. Subsequently, parameters such as temperature, aeration rate, and pH of the production medium were investigated for lipase production. According to the results, the newly isolated *Yarrowia lipolytica* exhibited the highest activity of 10.33 U/ml at 30°C for 96 hours, at a cyclical shaking speed of 150 rpm, and a pH of 5. In addition to lipase production, the proliferation of the newly isolated *Yarrowia lipolytica* was also investigated. The microorganism showed good growth between 15-30°C, but a decrease in growth was observed after 35°C. Growth was high at aeration speeds of 150-250 rpm in the incubation medium. When the effect of pH on growth was examined, high growth values were obtained in the pH range of 4-10. When all these results were evaluated together, it was concluded that the newly isolated *Yarrowia lipolytica* strain was psychrotolerant and optimized for high lipase production.

Keywords: Lipase, Optimization, *Yarrowia lipolytica*

**IN THE SHADOWS OF HISTORY: THE ROLE OF IDENTITY IN SHAPING
HUMAN SECURITY POLICIES IN THE WESTERN BALKANS**

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ABSTRACT

Human security across the Western Balkans is closely linked to the region's identities, historical legacies, and shared cultural memories. Decades of political transformation, ethnic fragmentation, and unresolved interpretations of past events continue to shape how communities understand risk and evaluate institutions. This study argues that perceptions of insecurity in the Balkans are mediated by symbolic narratives that attach cultural meaning to threats. Drawing on perspectives from constructivism, identity theory, and framing analysis, and combining them with regional data and institutional findings, the article shows that identity-driven interpretations play a decisive role in shaping human-security priorities. Although identity is often used politically to intensify fear or polarization, it can also strengthen resilience through networks of solidarity and community support. The study concludes that policy responses in the Western Balkans must incorporate cultural context and identity dynamics to address contemporary pressures such as migration, misinformation, socio-economic instability, and declining intergroup trust.

Keywords: identity, human security, symbolic narratives, Western Balkans, resilience.

TÜRKİYE HİZMET SEKTÖRÜNÜN İSTİHDAM KABİLİYETİ: FİNANS VE SİGORTA FAALİYETLERİ ÖRNEĞİ

EMPLOYMENT ABILITY OF THE TURKISH SERVICE SECTOR: EXAMPLE OF FINANCE AND INSURANCE ACTIVITIES

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ÖZET

Günümüz ekonomileri yeni ekonomik düzenin ortaya koyduğu pek çok makro ekonomik sorunla mücadele etmek zorundadır. İstihdam ve diğer açıdan bakıldığında işsizlik bu sorunların başında gelmektedir. Dar anlamda istihdam ‘mevcut işgücünün ekonomik faaliyetler içerisinde sürekli biçimde çalıştırılması’ şeklinde tanımlanabilirken; işsizlik ise ‘herhangi bir ekonomik toplumda çalışmak istediği halde iş bulamayan yetişkinlerin bulunması durumu’ olarak ifade edilebilir. Özellikle gelişmekte olan ülkelerde düşük refah ve eğitim düzeyinin bir sonucu olarak artan nüfus, iş olanaklarının dolayısıyla istihdam kabiliyetinin aynı paralellikte artırılamaması neticesinde işsizlik problemini tetiklemektedir. Dört temel sektör (tarım, sanayi, inşaat, hizmetler) bazında gerçekleştirilen istatistiki değerlendirmeler, hem gelişmiş hem de gelişmekte olan ülkeler için hizmetler sektörünün istihdam kabiliyetinin yüksekliğini ortaya koymaktadır. Hizmet sektörünün diğer ana sektörlerle olan yakın ilişkisi ve destekleyici faaliyetleri bu sektörün istihdam olanaklarını artırmaktadır. Finans ve sigorta faaliyetleri ise hizmet ana sektörünün bir alt sektörü olarak diğer sektörlerle sağladığı alt yapı desteği ile dikkat çeken bir sektördür. Nihayetinde dünya ekonomik yapılanmasının kapitalist ağırlığı finans ve sigorta faaliyetlerini her sektör için vazgeçilmez kılmaktadır.

Gelişmekte olan ülke statüsüne sahip Türkiye, istihdam kabiliyetindeki darlıklar nedeniyle işsizlik problemiyle yüzleşmekte olan ülkelerden bir tanesidir. Çalışma; öncelikle hizmet sektörünün istihdam kabiliyetini gözlemlemek ve sonrasında da hizmet sektörü içerisinde ağırlıklı bir paya sahip finans ve sigorta faaliyetlerinin ülke istihdamına katkısını değerlendirmek amacıyla gerçekleştirilmiştir. Çalışma sonuçları 2024 yılı toplam istihdamının yarısından fazlasının (%58,1) hizmet ana sektöründe gerçekleştiğini gösterirken, incelenen finans ve sigorta sektörünün hizmet ana sektörü toplam istihdamına katkısının %2 gibi düşük bir payı olduğunu ortaya koymaktadır. Ayrıca finans ve sigorta faaliyetlerinin istihdam kabiliyetinin kadın-erkek istihdamına eşit şans sunduğu da gözlenmektedir. Hizmet sektörünün yıllar itibarıyla artan istihdam kabiliyetine karşılık; finans ve sigorta faaliyetlerindeki istihdam kabiliyetinin oransal olarak değişmemesi; sektörün online platformlar aracılığıyla hizmet sunabilme kabiliyetindeki teknolojik gelişmelerin etkisi olarak değerlendirilmektedir.

Anahtar Kelimeler: İstihdam, İşsizlik, Hizmet Sektörü, Finans ve Sigorta Faaliyetleri

ABSTRACT

Today's economies must contend with numerous macroeconomic challenges posed by the new economic order. From the perspective of employment and, conversely, unemployment, these issues stand at the forefront. In a narrow sense, employment can be defined as “the continuous engagement of the existing labor force in economic activities,” whereas unemployment refers to “the condition in which adults in any economic society are unable to find a job despite their willingness to work.” In developing countries in particular, rising population—resulting from low levels of welfare and education—and the inability to expand job opportunities and employment capacity in parallel contribute significantly to the unemployment problem.

Statistical assessments conducted across four main sectors (agriculture, industry, construction, and services) reveal that the services sector holds the highest employment capacity in both developed and

developing countries. The close interrelation of the services sector with other main sectors and its supportive functions enhance its employment potential. Financial and insurance activities, as a sub-sector of services, stand out due to the infrastructural support they provide to other sectors. As a result, the predominance of capitalist structures in the global economy makes financial and insurance activities indispensable across all sectors.

Türkiye, as a developing country, is among the nations facing unemployment due to constraints in employment capacity. This study was conducted with the aim of first observing the employment capacity of the services sector and subsequently evaluating the contribution of financial and insurance activities—one of the most prominent sub-sectors within services—to national employment. The findings indicate that more than half (58.1%) of total employment in 2024 occurred within the services sector, while the contribution of the financial and insurance sector to total services-sector employment remained low, at around 2%. The results also show that financial and insurance activities offer equal employment opportunities for women and men. Despite the increasing employment capacity of the services sector over the years, the proportional stability of employment levels within financial and insurance activities is attributed to technological advancements that enable service delivery through online platforms.

Keywords: Employment, Unemployment, Service Sector, Finance and Insurance Activities

DETERMINATION OF QUERCETIN CONTENTS IN DANDELION (*TARAXACUM OFFICINALE*) ROOT BY DIFFERENT EXTRACTION METHOD USING HPLC ANALYSIS

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ABSTRACT

Dandelion (*Taraxacum officinale*) is a medicinal plant rich in bioactive compounds such as flavonoids, phenolics, and terpenoids that play an important role in antioxidant, anti-inflammatory, and antitumor activities. One of the main flavonoid compounds contained in dandelion root is quercetin, which is known to have the ability to be a natural antioxidant. This study aims to determine the quercetin content in dandelion root extract using the High Performance Liquid Chromatography (HPLC) method. Extraction is carried out by three variations of methods, namely maceration, soxhletation, and reflux using 96% ethanol solvent. The analysis was carried out using Agilent 1220 HPLC system with Zorbax RP- C18 column, with methanol : acetic acid 1% (55:45) as mobile phase at flow rate 1.0 mL/min, and detected at 370 nm. The results showed that the three extraction methods produced different contents of quercetin, with the soxhletation method providing the highest quercetin contents compared to the maceration and reflux methods. Based on the test results, dandelion root has the potential as a natural source of antioxidants with a significant quercetin content. This research is expected to be the basis for the development of effective and safe dandelion-based herbal products.

Keywords: Dandelion (*Taraxacum officinale*); Quercetin; HPLC; Extraction; Antioxidant

**NEW TECHNOLOGIES, NEW METHODS IN TEACHING ENGLISH:
TEACHING PRONUNCIATION**

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Xülasə

Tələffüzün tədrisi dərslərin üç mərhələsində aparılır. (PPP) Təqdimat, Təcrübə və Nəticə. Bu məqalədə tələffüzün tədrisini dilin bütün aspektlərini əhatə edərək üç mərhələyə uyğun şəkildə təqdim etməyə çalışdıq. İngilis dilini yaxşı tələffüz etmək təkcə fərdi səsləri düzgün tələffüz etmək deyil, eyni zamanda tələbələr vurğu və intonasiya haqqında da bilməlidirlər. Bu məqalədə həmçinin tələffüzün bütün aspektlərini təqdim etmək üçün müasir texnologiya və üsulların tətbiqindən bəhs edilir. Məqalənin sonunda səslərin ziddiyyətli müqayisəsi və tələffüz zamanı səhvlərin düzəliş yolları təqdim olunur.

Açar sözlər: öyrətmək, tələffüz, vurğu, heca, müasir üsul və texnologiyalar.

Summary

Pronunciation is taught in three stages of the lesson. (PPP) Presentation, Practice and Production. In this article, we tried to present all aspects of the language in accordance with the three stages of teaching pronunciation. Pronunciation of English well is not only about pronouncing individual sounds correctly, students also need to know about stress and intonation. This article also discusses the application of modern technologies and methods to present all aspects of pronunciation. At the end of the article a contrasting comparison and error correction methods are presented.

Keywords: teaching, pronunciation, accent, syllable, modern methods and technologies.

Резюме

Произношение изучается в три этапа урока. (PPP) Презентация, практика и производство. В этой статье мы постарались представить все аспекты языка в соответствии с тремя этапами обучения произношению. Правильное произношение английского языка - это не только правильное произношение отдельных звуков, учащимся также необходимо знать о ударении и интонации. В этой статье также обсуждается применение современных технологий и методов для представления всех аспектов произношения. В конце статьи представлено контрастное сравнение и методы исправления ошибок.

Ключевые слова: обучение, произношение, ударение, слог, современные методы и технологии.

ÖZEL EĞİTİM ALANINDA ÖYKÜLEME BECERİLERİ ARAŞTIRMALARINA İLİŞKİN EĞİLİMLER: ALAN YAZIN TARAMASI

TRENDS IN RESEARCH ON STORYTELLING SKILLS IN SPECIAL EDUCATION:
A LITERATURE REVIEW

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ÖZET

Öyküleme, çocukların dil gelişimi, bilişsel örgütlenme, sosyal iletişim ve kendini ifade etme becerilerinin temel bileşenlerinden biridir. Çocukların yaşantılarını anlamlandırmalarını, duygularını düzenlemelerini ve sosyal dünyayı kavramalarını destekleyen öyküleme becerisi; özellikle özel gereksinimli bireylerde gelişimin kritik bir göstergesi olarak görülmektedir. Bu nedenle öyküleme, özel eğitim alanında hem değerlendirme hem de müdahale süreçlerinin odağında yer almaktadır. Bu alandaki çalışmaların artmasına rağmen alan yazını inceleyen bir çalışmaya rastlanmamıştır. Bu kapsamda yapılan alan yazın taramasının amacı, özel eğitim alanında öyküleme becerilerine yönelik yürütülen araştırmaların eğilimlerini belirlemek ve bu alandaki mevcut literatürü konu alanı, çalışma türü, araştırma deseni, odaklanılan özel eğitim ihtiyacı türü, örneklem özellikleri ve yıllara göre dağılım açısından kapsamlı biçimde incelemektir. Bu doğrultuda 2010–2025 yılları arasında yayımlanan, Türkçe yazılmış lisansüstü tezler ve hakemli makaleler belirlenen ölçütlere göre incelenmiştir. Tarama sürecinde YÖK Ulusal Tez Merkezi, TRDizin, Google Scholar ve üniversitelerin açık erişim sistemleri kullanılmış; toplam 15 çalışma analiz kapsamına alınmıştır. Dahil edilen çalışmalardan elde edilen bulgular grafikler ve yorumlarla desteklenmiştir.

İnceleme sonucunda çalışmaların çoğunluğunun lisansüstü tezlerden oluştuğu ve yöntem olarak en sık ilişkisel tarama modellerinin tercih edildiği görülmüştür. Araştırmaların büyük bölümü gelişimsel dil bozukluğu, özel öğrenme güçlüğü veya işitme kaybı olan katılımcılarla yürütülmüş; örneklemelerin ağırlıklı olarak okul öncesi ve erken ilköğretim dönemindeki çocuklardan oluştuğu belirlenmiştir. Öyküleme ile ilgili ölçümler incelendiğinde araştırmalarda ENNI, OSU, FSÖZS ve TSÖZS gibi standart anlatı değerlendirme araçlarının yaygın olarak kullanıldığı; bunun yanında dil becerileri, çalışma belleği, gelişimsel özellikler, yazılı anlatım performansı ve dijital hikâye anlatımı gibi farklı ölçümlerin de öyküleme becerilerinin değerlendirilmesinde sıkça yer aldığı görülmüştür.

Bu bulgular, özel eğitim alanında öyküleme becerilerine yönelik çalışmaların giderek artmasına rağmen deneysel araştırmaların, farklı yetersizlik gruplarını kapsayan çalışmaların ve alternatif değerlendirme yöntemlerini ele alan araştırmaların sınırlı olduğunu göstermektedir. Elde edilen sonuçlar, alandaki mevcut eğilimleri ortaya koyarak gelecekte yapılacak çalışmalar için yol gösterici bir çerçeve sunmaktadır.

Anahtar Kelimeler: Öyküleme becerileri, hikaye anlatımı, dijital hikaye, özel eğitim

ABSTRACT

Storytelling is one of the fundamental components of children's language development, cognitive organization, social communication, and self-expression skills. The storytelling skill, which supports children in making sense of their experiences, regulating their emotions, and understanding the social world, is seen as a critical indicator of development, especially in individuals with special needs. For this reason, storytelling is at the center of both assessment and intervention processes in the field of special education. Despite the increase in studies in this field, no study reviewing the literature has been found. The purpose of the literature review conducted in this context is to determine the trends in research conducted on storytelling skills in the field of special education and to comprehensively examine the existing literature in this field in terms of subject area, type of study, research design, type of special educational need focused on, sample characteristics, and distribution by year. Accordingly, postgraduate theses and peer-reviewed articles written in Turkish and published between 2010 and 2025 were examined according to the specified criteria. The YÖK National Thesis Center, TRDizin, Google Scholar, and universities' open access systems were used in the review process; a total of 15 studies were included in the analysis. The findings obtained from the included studies were supported by graphs and interpretations.

The review revealed that the majority of studies consisted of graduate theses and that correlational survey models were the most frequently preferred method. Most of the studies were conducted with participants with developmental language disorders, specific learning difficulties, or hearing loss; it was determined that the samples consisted predominantly of children in the preschool and early elementary school years. When measurements related to storytelling were examined, it was seen that standard narrative assessment tools such as ENNI, OSU, FSÖZS, and TSÖZS were widely used in the studies; in addition, different measurements such as language skills, working memory, developmental characteristics, written narrative performance, and digital storytelling were also frequently used in the assessment of storytelling skills.

These findings show that, despite the increasing number of studies on storytelling skills in the field of special education, experimental studies, studies covering different disability groups, and studies addressing alternative assessment methods are limited. The results obtained reveal the current trends in the field and provide a guiding framework for future studies.

Keywords: Storytelling skills, storytelling, digital storytelling, special education

**AN EVALUATION OF CAPACITY GAPS AND GOVERNANCE BARRIERS IN
INTERNAL MEDICAL WASTE MANAGEMENT SYSTEMS IN HOSPITALS OF
RANGPUR, BANGLADESH**

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Abstract

Medical waste generation is an unavoidable consequence of healthcare delivery, yet inadequate management poses severe threats to environmental integrity and public health. Despite this, a comprehensive and standardized assessment framework for evaluating internal medical waste management (MWM) practices remains largely absent in many developing regions. This study provides a systematic evaluation of internal waste management practices across 40 hospitals in Rangpur Sadar Upazila, Bangladesh, with the objective of identifying strengths, weaknesses, and opportunities for intervention. A mixed-methods design incorporating questionnaire surveys, structured interviews, focus group discussions, direct observations, and archival reviews was employed to obtain a robust dataset. The results reveal substantial gaps in internal MWM systems. Although 50% of hospitals possessing color-coded bins used them correctly, the remaining 50% either lacked the system entirely or failed to implement it properly. Daily waste collection was reported by 95% of facilities, yet none (100%) had formal regulations governing safe internal transportation, and no hospital (0%) was equipped with appropriate waste-transport vehicles. Furthermore, all hospitals (100%) lacked on-site treatment facilities, instead depending exclusively on external agencies such as PRISM for collection and disposal. Training deficiencies were also prominent: most staff had never received formal MWM training, despite clear evidence that trained personnel exhibited significantly higher levels of awareness and compliance. Governance challenges including reliance on open dumping and weak regulatory enforcement further undermined safe waste handling. Overall, the study exposes critical structural, administrative, and operational shortcomings within internal MWM systems. The findings underscore the urgent need for strengthened governance, standardized protocols, enhanced training, and targeted investments to ensure environmentally sound and health-protective waste management in healthcare facilities. These insights provide actionable guidance for policymakers and contribute to the global discourse on sustainable healthcare waste governance.

Keywords: Medical Waste Management; Healthcare Facilities; Governance Challenges; Environmental Health; Capacity Gaps.

İŞİTME KAYBI OLAN ÇOCUKLARDA AKRAN ZORBALIĞININ İNCELENMESİ REVIEW OF PEER BULLYING IN CHILDREN WITH HEARING LOSS

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ÖZET

Akran zorbalığı, bir veya daha fazla çocuğun zayıf gördükleri bir çocuğa karşı sistematik olarak saldırgan davranışlarda bulunmasıdır. İşitme kaybı olan çocuklar, işitmelerindeki kısıtlamalar nedeniyle birçok zorlukla karşı karşıya kalırlar. Bu zorluklara ek olarak, akran zorbalığına maruz kalmaları durumunda sorunlar daha da kötüleşir.

İşitme kaybı olan çocuklar sosyal iletişim ve etkileşimde daha fazla zorluk yaşayabilir. Bu durum, zorbalığın genellikle algıya veya farklılıklara karşı güç dengesine dayanması nedeniyle akran zorbalığına uğrama riskini artırabilir.

İşitme kaybı olan çocuklara yönelik akran zorbalığı, kısa ve uzun vadede ciddi sonuçlara yol açabilir. Kısa vadede çocuğun stres seviyesini artırabilir, özgüvenini ve öz saygısını zedeleyebilir ve ruh sağlığını olumsuz etkileyebilir. Akran zorbalığına uzun vadede maruz kalan çocuklarda depresyon, anksiyete ve sosyal izolasyon gibi sorunlar ortaya çıkabilir.

Bu nedenle, işitme kaybı olan çocukları akran zorbalığına karşı korumak ve önleyici çalışmalar yapmak son derece önemlidir. İşitme kaybı olan çocukların özgüven duygusunun güçlendirilmesi ve topluma kazandırılması, onların sağlıklı gelişimleri açısından kritik öneme sahiptir.

Bu derlemede, işitme kaybı olan çocukların akran zorbalığına maruz kalma durumları ve bu durumun çocukların duygusal, sosyal ve dil gelişimleri üzerindeki etkileri incelenmektedir. Akran zorbalığının temel kavramları, fiziksel, sözel ve duygusal zorbalık gibi farklı türleri, işitme kaybı olan çocukların bu zorbalığa ne sıklıkla maruz kaldıkları ve hangi zorbalık türlerine daha fazla maruz kaldıkları vurgulanmaktadır. Son olarak, ebeveynlerin ve eğitimcilerin önleyici ve müdahaleci rolleri vurgulanmakta ve işitme kaybı olan çocukları akran zorbalığına karşı desteklemek için önerilerde bulunmaktadır. Bu çalışmanın amacı, işitme kaybı olan çocukların zorbalık deneyimleri hakkında farkındalık yaratmak ve zorbalığın nasıl önlenilebileceği konusunda fikirler sunmaktır.

Anahtar Kelimeler: Akran Zorbalığı, Çocuklarda İşitme Kaybı, Sosyal İzolasyon, İşitme Engelli

ABSTRACT

Peer bullying is systematic aggressive behavior of one or more children against a child they perceive as weak. Children with hearing loss face numerous challenges due to their hearing limitations. In addition to these challenges, being subjected to peer bullying further exacerbates these problems.

Children with hearing loss may experience greater difficulties with social communication and interaction. This can increase the risk of being subjected to peer bullying, as bullying is often based on perception or the balance of power over differences.

Peer bullying against children with hearing loss can have serious short- and long-term consequences. In the short term, it can increase a child's stress level, undermine their self-confidence and self-esteem, and negatively impact their mental health. Long-term exposure to peer bullying can lead to problems such as depression, anxiety, and social isolation in children.

Therefore, protecting children with hearing loss from peer bullying and implementing preventative measures are crucial. Strengthening the self-confidence of children with hearing loss and integrating them into society is critical for their healthy development.

This review examines the exposure of children with hearing loss to peer bullying and its impact on their emotional, social, and language development. It highlights the fundamental concepts of peer bullying, its different types, including physical, verbal, and emotional bullying, the frequency of bullying among children with hearing loss, and the types of bullying they are more likely to experience. Finally, it highlights the preventive and interventional roles of parents and educators, and offers recommendations for supporting children with hearing loss against peer bullying. The purpose of this study is to raise awareness about the bullying experiences of children with hearing loss and to offer ideas on how to prevent bullying.

Keywords: Peer Bullying, Hearing Loss in Children, Social Isolation, Hearing Impaired

FDM YÖNTEMİYLE ÜRETİLEN MALZEMELER İÇİN TEMSİL EDİCİ HACİM ELEMANI (RVE) MODELİNİN UYGULANMASI

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ÖZET

Katmanlı imalat teknolojilerinin önemli bir yöntemi olan Fused Deposition Modeling (FDM), polimer esaslı malzemelerle hızlı ve ekonomik üretim sağlamaktadır. Ancak bu yöntemin tabakalı yapısı, üretilen parçaların anizotropik ve heterojen davranış göstermesine neden olmakta ve mekanik özelliklerin doğru şekilde modellenmesini güçleştirmektedir. Bu nedenle, mikro yapıdaki değişkenleri dikkate alarak malzemenin genel davranışını temsil edebilen bir analiz yaklaşımı gerekmektedir. Bu çalışmada, FDM yöntemiyle üretilmiş malzemelerin mikromekanik özelliklerini incelemek amacıyla Temsili Hacim Elemanı (Representative Volume Element – RVE) yöntemi kullanılmıştır. Mikro yapıyı temsil eden iki farklı RVE modeli SOLIDWORKS programında 3D CAD modelleri oluşturulmuş ve bu iki model Abaqus sonlu elemanlar programında analiz için gerekli sınır koşulları verilerek yapılmıştır. Yapılan analizlerde gerilme dağılımları, şekil değiştirme davranışları ve reaksiyon kuvvetleri karşılaştırılmış; mikro geometrinin makro ölçekli mekanik tepki üzerindeki etkileri incelenmiştir. Elde edilen bulgular, RVE yaklaşımının FDM malzemelerin mekanik karakterizasyonunda güvenilir sonuçlar sunduğunu ve mikro yapı ile makro davranış arasında tutarlı bir ilişki kurduğunu göstermektedir. Çalışma, FDM bileşenlerin performansını öngörmede RVE tabanlı çok ölçekli modelleme yönteminin etkili bir araç olduğunu ortaya koymaktadır. Ayrıca, oluşturulan modellerin farklı yükleme koşullarına verdiği tepkiler değerlendirilerek geometrik parametrelerin malzeme performansını nasıl etkilediği detaylı şekilde ortaya konmuştur. Bu kapsamlı değerlendirme, FDM yapılarının daha doğru ve verimli şekilde tasarlanmasına katkı sağlamaktadır. Bu sonuçlar, gelecekte yapılacak deneysel ve sayısal çalışmalara da temel oluşturmaktadır.

Anahtar Kelimeler: Katmanlı İmalat, Fused Deposition Modeling (FDM), Temsil Edici Hacim Elemanı (RVE), Sonlu Elemanlar Analizi (SEA), Mikromekanik Modelleme, Abaqus, SOLIDWORKS

IMPLEMENTATION OF THE REPRESENTATIVE VOLUME ELEMENT (RVE) MODEL FOR MATERIALS MANUFACTURED USING THE FDM METHOD

ABSTRACT

Additive manufacturing technologies include several important methods, one of which is Fused Deposition Modeling (FDM), a technique that enables fast and cost-effective production using polymer-based materials. However, the layered structure of this method causes the produced parts to exhibit anisotropic and heterogeneous behavior, making it difficult to accurately model their mechanical properties. Therefore, an analysis approach that can represent the overall

behavior of the material by considering the microstructural variations is required. In this study, the Representative Volume Element (RVE) method was employed to examine the micromechanical properties of materials produced by the FDM process. Two different RVE models representing the microstructure were created as 3D CAD models in SOLIDWORKS, and these models were analyzed in the Abaqus finite element software by applying the necessary boundary conditions. In the analyses, stress distributions, deformation behaviors, and reaction forces were compared, and the effects of micro-geometrical features on the macro-scale mechanical response were investigated. The findings demonstrated that the RVE approach provides reliable results for the mechanical characterization of FDM materials and establishes a consistent relationship between microstructure and macro-level behavior. The study reveals that the RVE-based multiscale modeling method is an effective tool for predicting the performance of FDM components. Furthermore, by evaluating the responses of the developed models under different loading conditions, the influence of geometric parameters on material performance was clearly demonstrated. This comprehensive assessment contributes to the more accurate and efficient design of FDM structures. These results also form a foundation for future experimental and numerical studies.

Keywords: Additive Manufacturing, Fused Deposition Modeling (FDM), Representative Volume Element (RVE), Finite Element Analysis (FEA), Micromechanical Modeling, Abaqus, SOLIDWORKS

**PLANNING BREAST CANCER TREATMENT WITH EXTERNAL
RADIOTHERAPY: DOSIMETRIC STUDY AND CLINICAL RESULTS**

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Abstract

External beam radiation therapy is a method of cancer treatment which consists in destroying cancer cells using ionizing radiation. It comprises 3 major stages and is divided into two parts. The treatment planning stage was the aim of this project.

the area to be treated, the radiation dose required and the appropriate treatment techniques. An attempt was made to produce a treatment plan for breast cancer using external radiotherapy techniques such as the RC3D technique with XIO software and the VMAT technique with Monaco software, which are part of the treatment planning system based on the Carlo photon assembly algorithm.

To guarantee the safety and efficacy of the treatments administered to patients, we needed to carry out a quality control of the treatment plan to check that the radiation doses were delivered accurately.

In the end, we found corresponding results, so that the treatment plan was correctly administered and applied to the patient.

Keywords: *Radiotherapy, VMAT, RC3D, TPS, Quality control, OAR*

WOLFRAM ALPHA IN THE AGE OF ARTIFICIAL INTELLIGENCE

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ABSTRACT

This research is funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant no. AP"AP25796283 "Practical development of a theoretical justification for the professional training of mathematics teachers based on the Wolfram Alpha neural network").

In the 21st century, artificial intelligence (AI) has transformed the way humans interact with information, reason, and create knowledge. Among the most remarkable computational systems of the pre-generative AI era is *Wolfram Alpha*, developed by Stephen Wolfram in 2009. Unlike traditional search engines, Wolfram Alpha does not retrieve documents but computes precise answers by using curated data, mathematical algorithms, and symbolic reasoning. In the age of neural networks and large language models (LLMs) such as ChatGPT, Gemini, and Claude, the role of Wolfram Alpha appears to have evolved rather than diminished.

This paper explores the place of Wolfram Alpha in the current AI landscape. While LLMs generate context-rich, probabilistic responses based on linguistic patterns, Wolfram Alpha ensures factual accuracy and computational reliability. Their synergy demonstrates the convergence of symbolic and statistical AI paradigms: the former provides logical precision, while the latter contributes linguistic fluency and creativity. Integrations between ChatGPT and Wolfram Alpha exemplify this collaboration, enabling natural language understanding combined with verified computational reasoning.

Furthermore, in the field of education and scientific research, Wolfram Alpha continues to serve as a trusted tool for data analysis, visualization, and problem-solving. It promotes analytical thinking, complementing the imaginative capabilities of generative AI. The combination of these technologies suggests a future of *hybrid intelligence*, where human creativity, neural reasoning, and symbolic computation coexist in harmony.

In conclusion, Wolfram Alpha remains a cornerstone of computational intelligence in the era of generative AI. Rather than being replaced, it is being redefined—as a foundation for accuracy, logic, and trustworthiness in an increasingly creative and automated digital world.

KEYWORDS:

Wolfram Alpha, Artificial Intelligence, Computational Knowledge Engine, Large Language Models, Symbolic AI, Generative AI, Hybrid Intelligence, Education Technology.

VAN İLİ KENTSEL MORFOLOJİSİNDE OFİS BİNALARININ GELİŞİMİ: İMAR DÖNEMLERİ ÜZERİNDEN BİR İNCELEME

DEVELOPMENT OF OFFICE BUILDINGS IN THE URBAN MORPHOLOGY OF VAN
PROVINCE: A STUDY OF CONSTRUCTION PERIODS

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ÖZET

Ofis yapıları, insan yaşamının önemli bir parçası olarak, günümüzde yönetimin ve ticaretin en önemli simgelerinden biridir. Öyle ki günümüzde kentlerin güç ikonları olarak görülmektedir. Çalışma alanları ile bunların gereksinimlerini karşılayacak hacimleri barındıran ofis yapıları, ticaret alanlarının somut bir yansımasıdır. Toplumsal yaşamın temel dinamiklerinden biri olan ve üretim ilişkilerini barındıran ticaret mekânları, ticari aksın kentsel gelişimdeki belirleyici rolü nedeniyle kentsel morfolojide etkin olmaktadır. Ofis binalarının tasarımında yaşanan önemli gelişmeler, özellikle sanayi devrimi sonrası ortaya çıkan toplumsal değişimler ve yapı teknolojisindeki ilerlemelerle şekillenmiştir. Geçmişten günümüze Van ili birçok medeniyete ve kültüre ev sahipliği yaparak stratejik konumu nedeniyle tarih boyunca birçok kez el değiştirmiştir. Kent, 20. yüzyılın başlarında savaşlar ve göçler sonucu önemli değişimler yaşamıştır. Van şehri, geçtiğimiz yüzyıl içerisinde, çeşitli sebeplerden dolayı dört kez genişlemeye uğramış ve bu genişlemeler yerleşim düzenini etkilemiştir. Bu çalışmanın temel amacı, son yıllarda Van ilinin kentsel dokusunda hızla artan ofis yapılarını, kentin gelişme akslarıyla olan ilişkisi çerçevesinde incelemektir. Çalışma, kentsel gelişim sürecinde inşa edilen ve halen yapımı devam eden ofis binalarının bu bağlamda daha önce ele alınmamış olması nedeniyle önemli bir araştırma niteliği taşımaktadır. Bu amaç doğrultusunda kuramsal bir çerçeve oluşturularak; kentsel ölçekte Van şehrinin büyüme ve gelişme süreci ele alınacaktır. Çalışma kapsamında Cumhuriyet dönemi sonrası imar planları ve uygulama yaklaşımları kentsel ölçekte detaylı bir şekilde değerlendirilmektedir. Van ilinde inşa edilen ofis binalarının şehir ölçeğindeki yer seçim kararları doğrultusunda, yıllara göre imar dönemlerindeki konumlanmaları incelenmiştir. Buna göre 1946 yılı imar döneminden günümüze ulaşan ofis binası olmayıp; 1976-1978 yılı imar döneminde 5 adet, 1994-1998 yılı imar döneminde 31 adet, 2013 yılı imar döneminde ise 26 adet ofis binasının inşa edildiği tespit edilmiştir. Kentin büyümesi ve gelişen ekonomi dinamikleriyle paralel olarak ofis binası sayısında gözlemlenen belirgin artış, bu binaların ticari ve işlevsel açıdan kentsel dokuda önemli bir yer edindiğini göstermektedir. Sonuç olarak, Van şehir merkezindeki ofis binalarının gelişimi; imar planlama kararları, kentin gelişim alanı olarak belirlenen bölgeler, yeni ulaşım aksları ve özellikleri, kamu kurumları ve ticari yapıların konumu, ticaretin yoğunlaştığı bulvarlarda prestij elde etme isteği, mevzuatlardaki değişiklikler ve teknolojik ilerlemeler gibi birçok unsurdan etkilenmektedir.

Anahtar Kelimeler: Van ili, Ofis Binaları, Kentsel Gelişim, Kentsel Ölçek, İmar Planları

ABSTRACT

Office buildings, a vital part of human life, are among the most important symbols of government and commerce today. Indeed, they are seen as symbols of urban power. Office

buildings, which house workspaces and the spaces needed to meet their needs, are a concrete reflection of commercial spaces. Commercial spaces, one of the fundamental dynamics of social life and embodying production relations, play a significant role in urban morphology due to the decisive role of the commercial axis in urban development. Significant developments in office building design have been shaped by the social changes that emerged after the Industrial Revolution and advances in building technology. Van has hosted numerous civilizations and cultures throughout history, changing hands numerous times due to its strategic location. The city experienced significant changes in the early 20th century as a result of wars and migrations. The city of Van has expanded four times in the last century for various reasons, and these expansions have affected its settlement patterns. The primary objective of this study is to examine the rapidly increasing number of office buildings in the urban fabric of Van province in recent years, within the framework of their relationship with the city's development axes. This study is significant because office buildings constructed during the urban development process and those currently under construction have not been previously addressed in this context. To this end, a theoretical framework will be developed to examine the growth and development process of Van at the urban scale. The study provides a detailed evaluation of post-Republican zoning plans and implementation approaches at the urban scale. The location of office buildings constructed in Van province during the various zoning periods, based on city-wide site selection decisions, is examined. Accordingly, it has been determined that no office buildings have survived from the 1946 zoning period to the present day; five were constructed during the 1976-1978 zoning period, 31 during the 1994-1998 zoning period, and 26 during the 2013 zoning period. The significant increase in the number of office buildings observed in parallel with the city's growth and evolving economic dynamics demonstrates that these buildings have gained a significant place in the urban fabric from both a commercial and functional perspective. Consequently, the development of office buildings in Van city center is influenced by many factors, including zoning planning decisions, designated areas for city development, new transportation axes and features, the location of public institutions and commercial buildings, the desire to gain prestige on commercial boulevards, regulatory changes, and technological advances.

Keywords: Van Province, Office Buildings, Urban Development, Urban Scale, Zoning Plans

ARTICLE REVIEWS ON MEDIA SELECTION IN CELL CULTURE APPLICATIONS

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ABSTRACT:

Cell culture is the maintenance and proliferation of multicellular organisms under specific temperature, humidity, and nutrient conditions in a laboratory setting [2].

Culture media are balanced mixtures of amino acids, glucose, salts, vitamins, and other nutrients that support the in vitro growth and proliferation of cells. They are typically available commercially in powder or liquid form [3][4]. Different cell types require varying amounts of amino acids, vitamins, glucose, growth factors, and ions depending on the tissue they originate from and their metabolic requirements.

Glucose is the primary carbon source for cellular energy metabolism, and its deficiency can severely limit cell growth. Amino acids, and glutamine in particular, are crucial for cellular protein synthesis, proliferation, and overall metabolic activity. Therefore, it is critical that not only the medium itself but also its components are compatible with the cell type and application purpose. Appropriate medium selection is a fundamental factor that increases cellular yield, phenotypic consistency, and experimental validity [5].

The study examining five culture media differentiated with supplements demonstrated that the medium composition causes significant differences in the phenotype, differentiation capacity, and immunomodulatory properties of cells [6].

In a study conducted on the AU-565 breast cancer cell line, the effect of different media on cell proliferation was compared; it was reported that the DMEM/F-12 medium provided higher cell viability and yield compared to others [7].

Another study compared the effects of different basal media on human mesenchymal stem cells and determined that the α -MEM form containing Glutamax (α -MEM/GL) provided the highest yield in terms of cell adhesion and proliferation [8].

DMEM and RPMI-1640 media compositions were shown to significantly affect the proliferation, morphology, and differentiation potential of cells. DMEM provided a higher growth rate and metabolic activity in PDC cells [9].

A comparison between MEM, DMEM, and RPMI-1640 media showed that the type of medium can affect the molecular and phenotypic characteristics of related genes [10].

The report includes literature reviews presenting the reasons for the preference of different commercially available media or media with added components in various cell lines.

Keywords: Cell Culture, Culture Medium, Cell Viability, Yield

**PUBLIC PERCEPTION AND COMMUNITY ENGAGEMENT IN SOLID WASTE
MANAGEMENT IN PABNA MUNICIPALITY, BANGLADESH**

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ABSTRACT

Background: Effective solid waste management (SWM) remains a major challenge in rapidly growing Bangladeshi municipalities due to institutional weaknesses, low public engagement, and limited participatory practices. To support more inclusive and resilient systems, this study investigates the socio-demographic factors shaping public involvement, assesses perceptions of municipal authority performance, and analyzes the roles of formal institutions and community groups in SWM within Pabna Municipality.

Methods: A quantitative, descriptive research design was adopted, complemented by qualitative insights from key informants. Primary data were collected from 133 residents using stratified random sampling across Ward 10 of Pabna Municipality. A structured questionnaire based on established KAP frameworks captured demographic characteristics, household waste behaviors, perceptions of authority, and organizational involvement. Data were collected through face-to-face interviews and analyzed in SPSS v26 using descriptive statistics and chi-square tests to examine associations, while qualitative responses were thematically analyzed to contextualize quantitative findings.

Results: Significant associations were observed between SWM involvement and age, marital status, occupation, family size, income, and duration of residence, while gender and education showed no significant influence. Respondents expressed dissatisfaction with municipal responsiveness and a lack of participatory decision-making, with only 6% reporting that their opinions were considered. Participation in municipal programs was low (mean = 2.20), though moderate engagement was perceived in service-related communication (mean = 3.37). Residents strongly acknowledged individual responsibility (mean = 4.35) and emphasized shared roles among government, community organizations, and households. Community organizations received higher trust ratings than formal institutions.

Conclusion: The findings reveal a strong willingness among residents to participate in SWM but highlight structural gaps in institutional support, communication, and participatory governance. Strengthening collaborative frameworks and enhancing municipal accountability are essential for developing sustainable, community-centered waste management systems in medium-sized cities like Pabna.

Keywords: Solid Waste Management; Public Perception; Community Participation; Municipal Governance; Pabna Municipality

60 YAŞ ÜSTÜ BİREYLERİN BİTKİSEL TAKVİYE KULLANIMI BİLGİ DÜZEYLERİNİN İNCELENMESİ: YALOVA TERMAL ÖRNEĞİ
EXAMINATION OF HERBAL SUPPLEMENT USE KNOWLEDGE LEVELS OF INDIVIDUALS OVER 60 YEARS OF AGE: THE YALOVA TERMAL EXAMPLE

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ÖZET

Geleneksel ve Tamamlayıcı Tıp (GETAT) uygulamaları, modern tıbbın yanı sıra koruyucu, tedavi edici ve destekleyici yaklaşımlar sunarak bireylerin yaşam kalitesini artırmayı amaçlayan yöntemler bütünüdür. Son yıllarda tıbbi bitkisel ürünlerin kullanımında katlanarak bir artış olmuştur. Birçok ülkede, bu ürünlerin ilaç olarak kabul edilmeyerek sadece gıda olarak tanıtılması tıbbi reçete gerektirmeden uluslararası pazarda bulunmalarını kolaylaştırmaktadır. Yaşlı yetişkinler birçok ülkede nüfusun önemli ve büyüyen bir kesimi olduğundan, bitkisel ürün kullanımının yaygınlığını bilmek önemlidir. Bu yaş grubundaki birçok insan reçeteli ve reçetesiz çeşitli ilaçlarla birlikte bitkileri de almaktadır. Bu durum, tedavi sırasında alınan ilaçlarla birlikte bitkilerin eş zamanlı kullanımından kaynaklanan sağlık komplikasyonlarına yol açabileceğinin farkında olunması bakımından önemlidir. İnsan vücudunun birçok fizyolojik aktivitesi, örneğin böbrek ve karaciğer detoksifikasyonu ve temizlenmesi genellikle yaşla birlikte azaldığından, 60 yaş üstü kişiler bu açıdan savunmasız bir nüfustur.

Bitkisel takviyelerin kullanımı, genç nüfusa kıyasla reçeteli ilaçların orantısız bir payını alan yaşlı bireyler arasında yaygındır. Otlar ve bitkisel ürünler genellikle doğadan kaynaklandıkları için güvenli kabul edilir. Belirli bitkisel ürünler hakkındaki bilgiler ya yanıltıcıdır ya da basitçe mevcut değildir. Bu ürünler gerçekten de bir tedavi seçeneği olabilir, ancak bazıları yalnızca bir sağlık uzmanının rehberliğinde uygun şekilde kullanılabilir. Hem otlar hem de bitkisel ürünler genellikle refahı artırmak ve yaşamı tehdit etmeyen durumları önlemek ve iyileştirmek için kişisel bakım olarak kullanılır. Ancak, bunların kullanımı kanser gibi ciddi hastalıkları olan kişilerde de yaygındır. Yapılan çalışmalarda ortaya çıkarılan sorunlar arasında, tıbbi profesyoneller ve hastalar arasında bitkisel takviyelerin kullanımı hakkında diyalog eksikliği görülmüştür. Bu nedenle hastalar çok çeşitli bitkisel sağlık ürünlerini tek başlarına veya geleneksel ilaçlarla birlikte alırlar. Otlar birden fazla aktif bileşen içerdiğinden, bitkisel ürünlerin ve reçeteli ilaçların eş zamanlı kullanımı farmakokinetik profilleri etkileyebilir ve etkileşimler sonucunda istenmeyen etkilere neden olabilir.

Bu çalışmanın amacı Yalova Termal Bölgesinde yaşayan 60 yaş üstü bireylerin hem GETAT uygulamaları hakkında hem de bitkisel takviye kullanım durumlarını inceleyerek farkındalığın artmasına yardımcı olmak ve reçete yazanların, bitkisel takviyelerin kullanımını göz önünde bulundurmaları ve farmakolojik tedaviler hakkında karar verirken konuyu yaşlı hastalarıyla görüşmesinin önemine katkıları sağlamaktır.

Anahtar Kelimeler: Yaşlı, Bitkisel Takviye, Tıbbi Bitkiler, Bilgi, GETAT, Yalova, Termal Bölgesi

ABSTRACT

Traditional and Complementary Medicine (TCM) practices aim to improve individuals' quality of life by offering preventive, therapeutic, and supportive approaches alongside modern medicine. There has been an exponential increase in the use of medicinal herbal products in recent years. In many countries, these products are not considered drugs but are promoted solely

as food, facilitating their availability on the international market without requiring a medical prescription. Because older adults constitute a significant and growing segment of the population in many countries, understanding the prevalence of herbal product use is important. Many people in this age group take herbs along with various prescription and over-the-counter medications. This is important to recognize that concurrent use of herbs with medications taken during treatment can lead to health complications. Because many physiological activities of the human body, such as kidney and liver detoxification and cleansing, generally decline with age, people over 60 are a vulnerable population.

The use of herbal supplements is common among older individuals, who take a disproportionate share of prescription medications compared to younger populations. Herbs and herbal products are generally considered safe because they originate from nature. Information about certain herbal products is either misleading or simply unavailable. These products can indeed be a treatment option, but some can only be used appropriately under the guidance of a healthcare professional. Both herbs and herbal products are often used as personal care to enhance well-being and prevent and treat non-life-threatening conditions. However, their use is also common in people with serious illnesses such as cancer. Among the problems uncovered in studies is a lack of dialogue between medical professionals and patients about the use of herbal supplements. Consequently, patients take a wide variety of herbal health products either alone or in combination with conventional medications. Because herbs contain multiple active ingredients, the concurrent use of herbal products and prescription medications can affect pharmacokinetic profiles and lead to adverse effects due to interactions.

The aim of this study is to examine the use of herbal supplements among individuals aged 60 and over living in the Yalova Thermal Region, both regarding GETAT practices and herbal supplement use, and to contribute to the importance of prescribers considering the use of herbal supplements and discussing the issue with their elderly patients when making decisions about pharmacological treatments.

Keywords: Elderly, Herbal Supplement, Medicinal Plants, Information, GETAT, Yalova, Thermal Region

THE IMPACT OF GEOPOLITICAL TENSIONS ON BLUE ECONOMY SUPPLY CHAINS: A COMPARATIVE ANALYSIS OF MAJOR TRADE BLOCS

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Abstract

The global ocean economy is a critical driver of trade, economic development, and technological innovation, yet a comprehensive, comparative analysis of ocean goods trade across the world's major economic blocs remains absent from the literature. This study conducts a longitudinal and comparative assessment of ocean goods trade for BRICS, the European Union (EU), G-20, G-77, and the OECD from 2012 to 2023, utilizing nominal and real trade data from UNCTAD. The research employs a quantitative methodology to analyze total trade values, sectoral composition, growth trajectories, and per capita trade, interpreting the findings through the theoretical lenses of Comparative Advantage, Global Value Chains, and Structural Transformation. The results reveal a global ocean economy characterized by a persistent but shifting hierarchy. The EU and OECD maintain dominance in high-value, technology-intensive sectors such as ships, port equipment, and high-technology manufactures, underpinned by their abundant capital and advanced innovation ecosystems. In contrast, BRICS emerges as a dynamic and disruptive force, demonstrating the most rapid growth, particularly post-2021, and a strategic transition from a resource-based to a manufacturing-oriented ocean economy, heavily reliant on importing capital goods for industrial upgrading. The G-77 retains a comparative advantage in resource-intensive sectors like marine fisheries but shows nascent signs of moving into value-added processing, while the G-20 acts as an aggregate barometer of global trends. A profound developmental disparity is uncovered through per capita analysis, with the EU's per capita trade exceeding that of BRICS and the G-77 by more than a factor of ten, highlighting a significant "blue wealth" gap. This study concludes that the geography of the global ocean economy is undergoing a significant rebalancing. It provides a critical evidence base for policymakers in developed blocs to foster innovation, for emerging economies to strategize their ascent in global value chains, and for developing nations to avoid the resource curse by promoting value addition and equitable growth. The findings underscore the necessity for targeted, bloc-specific strategies to harness the ocean's economic potential sustainably and inclusively.

Keywords: Economic blocs, Global value chains, International trade, Ocean economy, Sustainable development.

EVE KOZMETİK MARKASINA AİT GÖRSELLERİN GÖZ İZLEME (EYE TRACKİNG) YÖNTEMİ İLE İNCELENMESİ
ANALYSIS OF VISUALS BELONGING TO A EVE COSMETIC BRAND USING THE EYE-TRACKING METHOD

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ÖZET

Son yıllarda araştırmacıların, tüketicileri satın alma davranışına teşvik etmede beynin rolünü incelemeye başlamasıyla birlikte, yeni bir alan olan Nöropazarlamaya yöneldikleri görülmüştür. Nöropazarlama; tüketici davranışını anlamak ve pazarlama stratejilerini geliştirmek için beyin mekanizmalarının incelenmesini içermekte; beynin dış uyaranlara maruz kaldığında gösterdiği duysal, motor, bilişsel ve duygusal tepkilere odaklanan bir pazarlama alanını ifade etmektedir (Voicu, 2012, s. 1472).

Nöropazarlama araştırma yöntemlerinden biri olan Göz İzleme (Eye-Tracking) Yönteminin kullanıldığı bu araştırma, Kozmetik Sektöründe faaliyet gösteren markaların görsel pazarlama stratejilerini optimize etmelerinde güçlü bir yol gösterici olacaktır. Bu bilgiler doğrultusunda araştırmanın amacı; Eve Kozmetik markasının afişlerini inceleyen tüketicilerin görsel etki düzeylerini Göz İzleme Yöntemi kullanarak analiz etmektir. Bu amaç doğrultusunda Eve Kozmetik markasına ait 2 adet görsel 30 katılımcıya izlettirilmiştir. Marka İsmi, Logo, Slogan, Referans Gücü başlıkları altında ilgi alanları oluşturularak analiz edilmiş ve görsel etki düzeyleri ısı haritası verileriyle belirlenmiştir. Yapılan analiz sonucunda ise, slogan ve referans gücünün ön plana çıktığı tespit edilmiştir.

Elde edilen bulguların, bir görsel, afiş, web sayfası hazırlanırken dikkat edilmesi gereken hususlara yardımcı olacağı düşünülmektedir. Ayrıca, tüketicilerin dikkatini çeken unsurları daha iyi anlama ve pazarlama stratejilerini bu doğrultuda optimize etme fırsatı sunacaktır. Araştırma, bu alanda bir boşluğu doldurarak ilk etapta Kozmetik Sektöründe görsel pazarlama stratejilerine ve sonrasında da diğer sektörlerde faaliyet gösteren işletmelere de katkı sunmayı hedeflemektedir. Bununla birlikte işletmelerin, tüketici odaklı içerikler üretmelerine, daha etkili tanıtım stratejileri geliştirmelerine ve pazarlama bütçelerini daha verimli kullanmalarına katkı sağlayacaktır.

Ayrıca ilgili literatür incelendiğinde, Nöropazarlama alanında çalışmaların mevcut olduğu (Yücel vd., 2020; Zalluhoğlu vd., 2015; Yücel ve Göker, 2020), ancak Kozmetik sektöründe Göz İzleme Yöntemi kullanılarak yapılan çalışmaların sınırlı olduğu görülmüştür. Bu yönüyle de çalışmanın, akademik bilgi birikimine de katkıda bulunması ve sektördeki yenilikçi çalışmalara öncülük etmesi öngörülmektedir.

Anahtar Kelimeler: Marka, Nöropazarlama, Göz İzleme Yöntemi.

ABSTRACT

In recent years, as researchers have begun to examine the role of the brain in encouraging consumers to make purchases, they have turned to a new field called Neuromarketing. Neuromarketing involves studying brain mechanisms to understand consumer behavior and develop marketing strategies; it refers to a field of marketing that focuses on the sensory, motor, cognitive, and emotional responses exhibited by the human brain when exposed to external stimuli (Voicu, 2012, s. 1472).

This study, which uses Eye-Tracking, one of the methods used in neuromarketing research, will be a powerful guide for businesses in the cosmetics industry seeking to optimize their visual

marketing strategies. The aim of the study is to analyze the visual impact levels of consumers viewing the visual of the Eve cosmetics brand using the Eye-Tracking Method. To this end, two visuals belonging to the Eve cosmetics brand were shown to 30 participants; areas of interest were created under the headings of Brand Name, Logo, Slogan and Reference Power, analyzed, and visual impact levels were determined using heat map data. The analysis revealed that the slogan and reference power stood out.

The findings obtained are expected to assist in identifying key considerations when preparing visuals. Additionally, they will provide an opportunity to better understand the elements that capture consumers' attention and optimize marketing strategies accordingly. The research aims to fill a gap in this field (Yücel vd.,2020; Zalluhoğlu vd.,2015; Yücel ve Göker, 2020), initially contributing to visual marketing strategies in the cosmetics industry and subsequently to businesses operating in other sectors. It will also help businesses produce consumer-focused content, develop more effective promotional strategies, and use their marketing budgets more efficiently.

Keywords: Brand, Neuromarketing, Eye Tracking Method.

YAŞLI BAKIMINDA YENİ BİR MODEL, TÜRKİYE’DE İLK YAŞLI BAKIM KOOPERATİFİ: “AYKA”

A NEW MODEL IN ELDERLY CARE, TURKEY'S FIRST ELDERLY CARE COOPERATIVE: “AYKA”

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ÖZET

Türkiye, yaşlı nüfusun her geçen yıl artmasıyla birlikte “çok yaşlı nüfus” kategorisine geçmiştir. TÜİK 2024 verilerine göre, 65 yaş ve üzeri nüfus 9 milyon 112 bin 298 kişiye ulaşmış ve toplam nüfusun %10,6’sını oluşturmuştur. Yaşlanan nüfusun sağlık, bakım ve sosyal destek ihtiyaçları giderek artarken, çekirdek aile yapısının yaygınlaşması, kadınların iş gücüne katılımının artması ve profesyonel bakım hizmetlerinin yetersizliği, yaşlı bakımında yeni ve sürdürülebilir modellerin gerekliliğini ortaya koymaktadır.

Bu bağlamda Karabük’te kurulan “S.S. AYKA Yaşlı Bakım Kadın Girişimi Üretim ve İşletme Kooperatifi”, Türkiye’de ilk ve tek yaşlı bakım kooperatifi olma özelliği taşımaktadır. AYKA, yaşlı bakımında kadın girişimciliğini teşvik eden, yerinde yaşlanmayı destekleyen ve nitelikli bakım hizmetini toplum temelli bir yapıyla bütünleştiren yenilikçi bir model sunmaktadır.

Kooperatifin temel amaçları arasında; Yaşlı Bakımı Programı mezunu teknikerlere istihdam yaratmak, ailelerin ve yaşlı bireylerin nitelikli bakım hizmetine erişimini kolaylaştırmak, sağlık hizmetleri yükünü ve maliyetlerini azaltmak ve aile bütünlüğünün korunmasına destek olmak yer almaktadır. Evde (yerinde) bakım modeli kapsamında bireysel bakım, psikososyal destek, vital bulgu takibi, ilaç yönetimi, beslenme desteği gibi hizmetler sunulmakta; ayrıca hastanelerde refakatçilik hizmeti sağlanmaktadır.

AYKA Kooperatifi aynı zamanda toplumsal farkındalığı güçlendirmeye yönelik sosyal sorumluluk projeleri de yürütmektedir. Bu projelerle kuşaklar arası dayanışma ve kültürel süreklilik hedeflenmektedir. Ayrıca model yaşlı bakımı ihtiyacının ötesinde, sosyal hizmet anlamında hem kadınların hem de gençlerin avantajlı konuma geçmesi için bütüncül bir yapı hedeflemiş bir kadın girişimidir.

AYKA Yaşlı Bakım Kooperatifi ilk olmakla birlikte profesyonel yaşlı bakım hizmetlerinin yaygınlaştırılması, kadın istihdamının artırılması, yaşlı bireylerin yaşam kalitesinin yükseltilmesi ve aktif yaşlanma anlayışının topluma yerleşmesi açısından Türkiye’ye örnek olabilecek yenilikçi bir model sunmaktadır.

Anahtar Kelimeler: Yaşlı bakım, evde bakım modeli, kooperatifçilik, kadın kooperatifi, yaşlı bakım kooperatifi, aktif yaşlanma

ABSTRACT

With its ageing population increasing every year, Turkey has entered the category of a ‘highly aged population’. According to 2024 data from the Turkish Statistical Institute (TÜİK), the population aged 65 and over reached 9,112,298, constituting 10.6% of the total population. As the health, care and social support needs of the ageing population increase, the spread of the nuclear family structure, the increase in women's participation in the workforce and the inadequacy of professional care services highlight the need for new and sustainable models of elderly care.

In this context, the ‘S.S. AYKA Elderly Care Women's Initiative Production and Management Cooperative’ established in Karabük is the first and only elderly care cooperative in Turkey. AYKA offers an innovative model that encourages women's entrepreneurship in elderly care, supports ageing in place, and integrates quality care services into a community-based structure.

The cooperative's main objectives include creating employment for technicians who have graduated from the Elderly Care Programme, facilitating access to quality care services for families and elderly individuals, reducing the burden and costs of healthcare services, and supporting the preservation of family unity. Within the scope of the home-based care model, services such as individual care, psychosocial support, vital sign monitoring, medication management, and nutritional support are provided; in addition, hospital escort services are offered.

The AYKA Cooperative also carries out social responsibility projects aimed at strengthening social awareness. These projects target intergenerational solidarity and cultural continuity. Furthermore, beyond meeting the need for model elderly care, it is a women's initiative that aims for a holistic structure in terms of social services to put both women and young people in an advantageous position.

The AYKA Elderly Care Cooperative is the first of its kind and offers an innovative model that could serve as an example for Turkey in terms of promoting professional elderly care services, increasing female employment, improving the quality of life for elderly individuals, and establishing the concept of active ageing in society.

Keywords: Elderly care, home care model, cooperativism, women's cooperative, elderly care cooperative, women's entrepreneurship, active ageing

**TÜRKİYE’DE KONUT KREDİSİ FAİZ ORANLARININ KONUT PİYASASINA
ETKİSİNE YÖNELİK GÖSTERGELER (2013–2025)**
MORTGAGE INTEREST RATES AND HOUSING MARKET INDICATORS IN TÜRKİYE
(2013–2025)

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ÖZET

Bu çalışma, Türkiye’de konut kredisi faiz oranlarının konut piyasası üzerindeki etkilerini 2013–2025 dönemine ait yüksek frekanslı veriler kullanarak incelemektedir. Konut piyasasının temel unsurları olan fiyat endeksleri ve satış hacimleri, faiz oranları aracılığıyla işleyen kredi maliyetleriyle doğrudan ilişkilidir. Bu doğrultuda çalışmada, haftalık konut kredisi faiz oranları aylık ortalamaya dönüştürülmüş, konut fiyat endeksleri ile birleştirilmiş ve faiz–fiyat–satış etkileşimini ortaya koyan bütünlük bir analiz çerçevesi oluşturulmuştur.

Elde edilen bulgular, faiz indiriminin konut talebi üzerinde güçlü ve istatistiksel olarak anlamlı bir etki yarattığını göstermektedir. Özellikle 2020 yılında uygulanan düşük faizli kredi genişlemesi, hem satış hacminde hem de fiyat düzeylerinde tarihsel bir sıçramaya yol açmıştır. Buna karşılık, 2023 sonrası dönemde yürütülen sıkı para politikası, faiz oranlarında belirgin artışa neden olmuş; bu durum konut satışlarının daralmasına ve fiyat artış hızının belirgin biçimde yavaşlamasına yol açmıştır. Bulgular, konut piyasasının kredi koşullarındaki değişimlere yüksek derecede duyarlı olduğunu ve para politikası geçiş mekanizmasının konut sektörü üzerinde doğrudan işlediğini teyit etmektedir.

Sonuç olarak çalışma, faiz–fiyat–satış üçgeninin konut piyasasının yapısal dinamiğini oluşturduğunu göstermekte; sürdürülebilir bir konut piyasası için faiz politikaları ile arz ve talep yönlü konut politikalarının eşgüdümlü biçimde tasarlanmasının gerekli olduğunu vurgulamaktadır.

Anahtar kelimeler: Konut Kredisi Faiz Oranları, Konut Fiyat Endeksi, Konut Satışları, Para Politikası.

ABSTRACT

This study analyzes the impact of mortgage interest rates on the Turkish housing market using high-frequency data for the period 2013–2025. Housing price indices and sales volumes—two fundamental indicators of housing market performance—exhibit a strong theoretical and empirical linkage to borrowing costs shaped by monetary policy. Accordingly, weekly mortgage interest rates were transformed into monthly averages and integrated with housing price and sales indicators to construct a comprehensive analytical framework that captures the dynamics of the interest rate–price–sales nexus.

The empirical findings reveal that reductions in mortgage interest rates generate a substantial and statistically significant increase in housing demand, subsequently exerting upward pressure on housing prices. The low-interest credit expansion implemented in 2020 led to an unprecedented surge in housing sales and a rapid escalation in nominal price indices.

Conversely, the post-2023 period, marked by a tightening monetary policy stance, resulted in higher borrowing costs, a pronounced contraction in sales volumes, and a notable deceleration in price growth. These results confirm that the Turkish housing market is highly responsive to changes in credit conditions and that the monetary transmission mechanism operates strongly through the housing channel.

Overall, the study demonstrates that the interaction among interest rates, housing prices, and sales volumes constitutes the core structural dynamic of the housing market. Ensuring a stable and sustainable housing market requires the coordination of demand-side and supply-side housing policies with the broader orientation of monetary policy.

Key words: Mortgage Interest Rates, Housing Price Index, Housing Sales, Monetary Policy.

**GORDON'UN FONKSİYONEL SAĞLIK ÖRÜNTÜLERİ MODELİ'NE GÖRE
RADİKAL SİSTEKTOMİ ve İLEAL KONDUİT UYGULANAN HASTANIN
HEMŞİRELİK BAKIMI: OLGU SUNUMU**

**NURSING CARE OF A PATIENT WITH ILEAL CONDUIT AND RADICAL
CYSTECTOMY ACCORDING TO GORDON'S FUNCTIONAL HEALTH PATTERNS
MODEL: A CASE REPORT**

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ÖZET

Mesane kanseri, erkeklerde kadınlara göre daha yüksek insidansa sahip olup toplumda sık karşılaşılan bir malignite türüdür. Radikal sistektomi ve pelvik lenf nodu diseksiyonu, invaziv mesane kanserinin cerrahi tedavisinde altın standart olarak uygulanmakta ve bu cerrahi girişim üriner diversiyon gerektirmektedir. Üriner diversiyon birçok şekilde uygulanmakta olup güvenli, düşük komplikasyon riski ve yaşam kalitesini iyileştirmede daha etkili olması nedeniyle en sık ileal konduit uygulanmaktadır. İleal konduit uygulamasından sonra, erken ve geç dönemde bazı komplikasyonlar görülmektedir. Bunlar, ileus, anastomoz kaçağı, enfeksiyon, kanama ve hematoma, üriner sistem komplikasyonları ve stoma ile ilişkili komplikasyonlar görülmektedir. Radikal sistektomi öncesi, sonrası ve sonrası dönemde iyileşme süreci yönünden hemşirelik bakımı oldukça önemlidir. Hemşirelik girişimlerinin sistematik şekilde uygulanmasında, çeşitli kuramsal modellerden yararlanılmaktadır. Bu modellerden biri olan Gordon'un Fonksiyonel Sağlık Örüntüleri Modeli, cerrahi hastalarda bütüncül değerlendirme ve hemşirelik bakımının planlanmasında rehberlik sağlamaktadır. Bu model, 11 fonksiyonel alanda bireyin bakım gereksinimlerini belirlemektedir. Bu fonksiyonel örüntüler; sağlığı algılama-sağlık yönetimi, beslenme durumu, boşaltım, hareket-aktivite, uyku-dinlenme, bilişsel algılama, kendini algılama-benlik, rol-ilişki, cinsellik-üreme, baş etme-stres toleransı ve inanç değerleridir. Bu çalışmada, radikal sistektomi ve ileal konduit uygulanan 72 yaşındaki kadın bir hastanın hemşirelik bakım süreci, Gordon'un Fonksiyonel Sağlık Örüntüleri Modeli doğrultusunda planlanmış olup, modelin hemşirelik uygulamalarında kullanımına ilişkin bir örnek oluşturmak amaçlanmıştır. Verilerin kapsamlı incelenmesi ile bu modelin radikal sistektomi ameliyatı olan hastalarda kullanımının yararlı olduğu saptanmıştır.

Anahtar Kelimeler: hemşirelik bakımı, ileal konduit, olgu sunumu, radikal sistektomi.

ABSTRACT

Bladder cancer is a malignancy with a higher incidence in men than in women and is frequently encountered in the general population. Radical cystectomy with pelvic lymph node dissection is considered the gold standard surgical treatment for invasive bladder cancer, and this procedure requires urinary diversion. Among various types of urinary diversion, the ileal conduit is the most commonly used method because it is safe, has a low risk of complications, and is more effective in improving quality of life. However, several early and late complications may occur following ileal conduit surgery, including ileus, anastomotic leakage, infection, bleeding or hematoma, urinary system complications, and stoma-related problems. Nursing care plays a crucial role in the preoperative, intraoperative, and postoperative recovery process of patients undergoing radical cystectomy. To ensure systematic implementation of nursing interventions, various theoretical models are utilized. One of these, Gordon's Functional Health Patterns Model, provides a systematic framework for holistic assessment and nursing care planning in surgical patients. The model identifies an individual's care needs in 11 functional areas: health perception–health management, nutritional–metabolic, elimination, activity–exercise, sleep–rest, cognitive–perceptual, self-perception–self-concept, role–relationship, sexuality–reproductive, coping–stress tolerance, and value–belief. In this case study, the nursing care process of a 72-year-old female patient who underwent radical cystectomy and ileal conduit surgery was planned based on Gordon's Functional Health Patterns Model, aiming to provide an example of its use in nursing practice. Comprehensive analysis of the data revealed that the use of this model was beneficial in the care of patients undergoing radical cystectomy.

Keywords: nursing care, ileal conduit, case report, radical cystectomy.

DÜNYA MUZEYLƏRİNDƏ İSLAMIN İZLƏRİ.

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Xülasə

İslam sivilizasiyası minilliklər boyu geniş bir coğrafiyada – Yaxın Şərqdən Şimali Afrikaya, Orta Asiyadan Avropanın mərkəzinə qədər – zəngin memarlıq abidələri, incəsənət nümunələri və əlyazmalarla öz izini qoymuşdur. Bu irs təkcə dini dəyərlərin ifadəsi deyil, həm də elmin, mədəniyyətin və bədii zövqün yüksək səviyyəsini əks etdirən universal bir mədəniyyət xəzinəsidir. Müxtəlif dövrlərdə yaradılmış məscidlər, saraylar, karvansaralar, xəttatlıq nümunələri, miniatürlər, keramika və metal məmulatları, həmçinin qədim Quran əlyazmaları bu irsin bənzərsiz nümunələri kimi dünya muzeylərinin vitrinlərini bəzəməkdədir.

Bu gün Parisdəki Luvr Muzeyindən Londondakı Britaniya Muzeyinə, İstanbul Topkapı Sarayından Qahirə İslam İncəsənəti Muzeyinə qədər sayısız-hesabsız nüfuzlu mədəniyyət ocaqlarında İslam mədəniyyətinə aid nadir eksponatlar qorunur. Hər bir əsər yalnız öz dövrünün sənət və texnika nailiyyətlərini deyil, həm də İslam dünyasının multikultural və beynəlmiləl təbiətini əks etdirir. Avropada, Yaxın Şərqdə və Asiyada saxlanılan bu abidələr, əsərlər və əlyazmalar, xalqlar arasında mədəni mübadilənin, elmi əməkdaşlığın və incəsənət üslublarının qarşılıqlı təsirinin canlı şahidləridir.

Bu məqalədə məqsəd – müxtəlif qitələrdə yerləşən məşhur muzeylərdəki İslam memarlığına aid maket və sənət nümunələrini, nadir əlyazmaları və bədii əsərləri araşdırmaq, onların tarixi, mədəni və estetik dəyərini təhlil etməkdir. Araşdırma həm akademik yanaşmanı əhatə edəcək, həm də geniş oxucu kütləsinin mövzunu daha dərinlən qavramasına imkan yaradacaq.

Açar sözlər: muzey, dünya, İslam, incənət, mədəniyyət

Summary

Over the course of millennia, Islamic civilization has left its mark across a vast geographical expanse – from the Middle East to North Africa, from Central Asia to the heart of Europe – through magnificent architectural monuments, artistic masterpieces, and manuscripts. This heritage is not merely an expression of religious values, but also a universal cultural treasure reflecting the high achievements of science, culture, and artistic taste. Mosques, palaces, caravanserais, works of calligraphy, miniatures, ceramics, metalwork, as well as ancient Qur'an manuscripts created in different periods, stand as unique examples of this legacy and continue to grace the showcases of museums around the world.

From the Louvre Museum in Paris to the British Museum in London, and from Istanbul's Topkapı Palace to the Museum of Islamic Art in Cairo, countless prestigious cultural institutions around the world preserve rare and valuable artifacts of Islamic culture. Each piece not only showcases the artistic and technical achievements of its time but also reflects the multicultural and international nature of the Islamic world. These monuments, artworks, and manuscripts, spread across Europe, the Middle East, and Asia, stand as living witnesses to cultural exchange among peoples, scientific collaboration, and the mutual influence of artistic styles.

The purpose of this article is to explore architectural models, artistic samples, rare manuscripts, and works of art related to Islamic architecture housed in renowned museums across different continents, and to analyze their historical, cultural, and aesthetic significance.

This research will encompass an academic approach while also enabling a broad audience to gain a deeper understanding of the subject.

Key words: museum, world, Islam, art, culture

Резюме

На протяжении тысячелетий исламская цивилизация оставила глубокий след на обширных просторах — от Ближнего Востока до Северной Африки, от Центральной Азии до сердца Европы — в виде великолепных архитектурных памятников, произведений искусства и рукописей. Это наследие является не только отражением религиозных ценностей, но и универсальным культурным сокровищем, воплощающим высокий уровень развития науки, культуры и художественного вкуса. Мечети, дворцы, караван-сарай, образцы каллиграфии, миниатюры, изделия из керамики и металла, а также древние рукописи Корана, созданные в разные эпохи, представляют собой уникальные свидетельства этой цивилизации и продолжают украшать экспозиции музеев по всему миру.

От Лувра в Париже до Британского музея в Лондоне, от дворца Топкапы в Стамбуле до Музея исламского искусства в Каире — бесчисленное множество престижных культурных учреждений по всему миру сохраняют редкие и ценные экспонаты исламской культуры. Каждый экспонат не только демонстрирует художественные и технические достижения своей эпохи, но и отражает мультикультурную и международную природу исламского мира. Эти памятники, произведения искусства и рукописи, расположенные в Европе, на Ближнем Востоке и в Азии, являются живыми свидетельствами культурного обмена между народами, научного сотрудничества и взаимного влияния художественных стилей.

Цель данной статьи — исследовать архитектурные макеты, образцы искусства, редкие рукописи и произведения искусства, связанные с исламской архитектурой, хранящиеся в известных музеях различных континентов, а также проанализировать их историческую, культурную и эстетическую ценность. Исследование охватит как академический подход, так и позволит широкой аудитории глубже понять рассматриваемую тему.

Ключевые слова: музей, мир, ислам, изысканность, культура

**POST-TRUTH ÇAĞDA SİYASAL SÖYLEM: 2024 ABD BAŞKANLIK
MÜNAZARASININ (HARRIS-TRUMP) DEMOKRASİ BAĞLAMINDA SÖYLEM
ANALİZİ**

POLITICAL DISCOURSE IN THE POST-TRUTH ERA: DISCOURSE ANALYSIS OF THE
2024 U.S. PRESIDENTIAL DEBATE (HARRIS-TRUMP) IN THE CONTEXT OF
DEMOCRACY

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ÖZET

Hakikatin tartışmalı hale geldiği post-truth dönemde en fazla tartışılan konulardan birini siyasi aktörlerin söylemlerinin incelenmesi oluşturmaktadır. Özellikle siyasi aktörlerin duygusal ya da popülist söylemleri hakikati tartışmalı hale getiren nedenlerin başında gelmektedir. Buradan hareketle bu çalışmada, post-truth çağıın siyasi söylem dinamikleri bağlamında Kamala Harris ve Donald Trump arasında geçen 2024 ABD Başkanlık münazarasının incelenmesi amaçlanmıştır. Çalışmada bu amaç doğrultusunda çalışmada iki adayın münazaradaki söylemleri Fairclough'un üç boyutlu eleştirel söylem analizi yöntemi ile analiz edilmiştir. Yapılan analiz sonunda her iki adayın da hakikatlere dayalı rasyonel politika tartışmak yerine, seçmen kitlelerinde güçlü duygusal tepkiler uyandırmayı hedefleyen stratejilere başvurduğu tespit edilmiştir. Bununla birlikte analiz bulgularına göre adayların iki farklı duygusal mobilizasyon pratiğine sahip olduğu ortaya konmuştur. Bu kapsamda Donald Trump'ın söylemini "felaket", "içeri yağıyor" ve "ülkeyi yok etme" gibi ifadeleri içeren kriz, istila ve ahlaki panik anlatısı üzerine kurduğu, gerçekliği ise hakikatten ziyade sansasyonel imgeler kullanarak inşa ettiği saptanmıştır. Buna karşılık Kamala Harris, "ahlaksızca", "diktatör" ve "şiddet yanlısı" gibi ifadelerle ahlaki öfke ve bireysel ıstırap söylemini benimsemiştir. Kürtaj gibi politikaları, "otoparkta kanlar içinde kalan kadın" gibi duygusal yoğunluğu yüksek bireysel trajediler üzerinden çerçeveleyerek, Trump'ı kişisel ve demokratik bir tehdit olarak kodlamıştır. Dolayısıyla her iki adayın da "hissedilen gerçeği" olgusal gerçekliğin önüne koyduğu tespit edilmiştir.

Anahtar Kelimeler: Post-truth, Siyasal Söylem, Eleştirel Söylem Analizi, Popülizm, Duygusal Mobilizasyon, 2024 ABD Başkanlık Münazarası.

ABSTRACT

The study of political actors discourses constitutes one of the most debated topics in the post-truth era, where the concept of truth itself has become contested. Emotional or populist discourses employed by political actors, in particular, are among the primary reasons for making truth controversial. Proceeding from this, this study aims to examine the 2024 U.S. Presidential debate between Kamala Harris and Donald Trump within the context of post-truth era political discourse dynamics. To this end, the discourses of the two candidates in the debate were analyzed using

Fairclough's three-dimensional Critical Discourse Analysis (CDA) method. The analysis concluded that both candidates resorted to strategies aimed at evoking strong emotional responses in the electorate, rather than engaging in rational policy discussions based on facts. Furthermore, the analysis findings revealed that the candidates employed two distinct emotional mobilization practices. In this context, it was determined that Donald Trump built his discourse on a narrative of crisis, invasion, and moral panic, utilizing phrases such as “disaster”, “pouring in”, and “destroying the country”. Trump constructed reality using sensational imagery rather than factual truth. In contrast, Kamala Harris adopted a discourse of moral outrage and individual suffering, using phrases like “immoral”, “dictator”, and “violent”. She framed policies like abortion through highly emotional, individual tragedies, such as “a woman bleeding out in a parking lot”, thereby coding Trump as a personal and democratic threat. Consequently, it was determined that both candidates prioritized “felt truth” over factual reality.

Keywords: Post-truth, Political Discourse, Critical Discourse Analysis, Populism, Emotional Mobilization, 2024 U.S. Presidential Debate.

**FAİZ ORANLARI VE ENFLASYONUN (ÜFE VE TÜFE) BORSA İSTANBUL
SEKTÖR GETİRİLERİ ÜZERİNDEKİ ETKİSİ: AMPİRİK BİR ANALİZ**
THE EFFECT OF INTEREST RATES AND INFLATION (PPI AND CPI) ON BORSA
ISTANBUL SECTOR RETURNS: AN EMPIRICAL ANALYSIS

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ABSTRACT

This study investigates the impact of interest rates and inflation on sectoral stock market indices using monthly indicators from January 2016 to August 2024. The Producer Price Index (PPI) and Consumer Price Index (CPI) constitute the inflation data used to measure inflation. Research on the impact of inflation and interest rates on investment decisions and market dynamics demonstrates a long- and short-run relationship between these factors. The study uses econometric techniques to assess whether sectoral stock returns respond differently to inflationary pressures and interest rate fluctuations. The findings indicate a significant relationship between inflation, interest rates, and sectoral stock market returns. While some sectors are sensitive to inflation and interest rate changes, others are resistant, highlighting the heterogeneous impact of macroeconomic variables across different sectors. The study provides empirical evidence that changes in inflation (both CPI and PPI) and interest rates affect stock returns, highlighting the importance of macroeconomic stability for financial markets. These results contribute to the existing literature by providing sector-specific insights into how inflation and interest rates shape stock market performance in an emerging economy. These findings will also provide insights for investors, policymakers, and financial analysts in formulating strategies to mitigate the risks associated with inflation and interest rate fluctuations.

The analyses used Johansen Cointegration Analysis, and no significant relationship was found between stock market indices and interest rates. However, the long-term coefficients demonstrate a positive relationship between inflation and stock market indices, indicating that increases in inflation lead to a 10-15% increase in index returns.

Keywords: Inflation, Stocks, Interest Rates, PPI, CPI

ÖZET

Bu çalışmada faiz oranları ve enflasyonun 2016 Ocak-2024 Ağustos tarihleri arasındaki aylık göstergelerinden yola çıkarak sektörel borsa indeksleri üzerindeki etkisi araştırılmıştır. Üretici fiyat endeksi (ÜFE) ve Tüketici fiyat endeksi (TÜFE) enflasyonun ölçülmesinde kullanılan enflasyon verilerini oluşturmaktadır. Enflasyon ve faiz oranının yatırım kararları ve market dinamikleri üzerinde etkisi üzerine yapılan araştırmalar bu faktörler arasında uzun ve kısa dönemde ilişki olduğunu göstermektedir. Çalışma, sektörel hisse senedi getirilerinin enflasyonist baskılara ve faiz oranı dalgalanmalarına farklı tepki verip vermediğini

değerlendirmek için ekonometrik teknikler kullanmaktadır. Bulgular, enflasyon ve faiz oranları ile borsa sektörel getirileri arasında anlamlı bir ilişki olduğunu göstermektedir. Bazı sektörler enflasyon ve faiz oranı değişikliklerine karşı hassasiyet gösterirken, diğerleri direnç göstererek makroekonomik değişkenlerin farklı sektörler üzerindeki heterojen etkisini vurgulamaktadır. Çalışma, enflasyon (hem TÜFE hem de ÜFE) ve faiz oranlarındaki değişikliklerin hisse senedi getirilerini etkilediğine dair ampirik kanıtlar sunarak makroekonomik istikrarın finansal piyasalar için önemini vurgulamaktadır. Bu sonuçlar, gelişmekte olan bir ekonomide enflasyon ve faiz oranlarının borsa performansını nasıl şekillendirdiğine dair sektöre özgü içgörüler sunarak mevcut literatüre katkıda bulunmaktadır. Ayrıca bu bulgular sayesinde yatırımcılar, politika yapıcılar ve finansal analistler için enflasyon ve faiz oranı dalgalanmalarıyla ilişkili riskleri azaltmaya yönelik stratejiler formüle etme konusunda çıkarımlarda bulunabileceklerdir.

Yapılan analizlerde Johansen Eş Bütünleşme Analizi kullanılmış ve borsa endeksleri ile faiz oranı arasında anlamlı bir ilişki tespit edilememiştir. Ancak uzun dönem katsayılarında enflasyon ile borsa endeksleri arasında pozitif etki yani enflasyon artışlarının endeks getiri oranlarında %10-15 arasında artışa sebep olduğu gözlemlenmiştir.

Anahtar Kelimeler: Enflasyon, Hisse Senedi, Faiz Oranları, ÜFE, TÜFE

BATI TRAKYA MÜSLÜMAN TÜRK GENÇLERİ BAĞLAMINDA KİMLİK–DİN EĞİTİMİ İLİŞKİSİ*

Sezin Azizoglou**

ÖZET

Bu çalışma, Yunanistan’ın Batı Trakya bölgesinde yaşayan Müslüman Türk gençlerinin dini kimlik inşa süreçlerini, din eğitimi deneyimleriyle ilişkilendirerek incelemektedir. Seküler bir toplumda azınlık konumunda bulunan gençlerin inanç, ibadet, sosyal çevre ve eğitim tecrübelerinin dini kimliklerine etkisi analiz edilmiştir. Araştırmanın amacı, din eğitiminin gençlerin dini yönelimleri, dindarlık biçimleri ve kimlik aidiyetleri üzerindeki belirleyiciliğini ortaya koymaktır.

Araştırma nitel yöntem esasına dayanmaktadır. Veriler 2023–2024 yıllarında, Batı Trakya Bölgesinde yaşayan, yükseköğrenimini Yunanistan ve Türkiye’de sürdüren veya mezun olan Batı Trakyalı üniversite öğrencilerinden toplanmıştır. Katılımcılarla yarı yapılandırılmış mülakatlar yapılmış, toplamda 40 öğrenciyle görüşülmüştür. Elde edilen veriler betimsel analiz yöntemiyle değerlendirilmiştir.

Bulgulara göre katılımcıların büyük çoğunluğu çocukluk döneminde din eğitimi almış olsa da bu eğitimin içerik ve pedagojik açıdan yetersiz olduğunu belirtmiştir. Türkiye’de eğitim almış ve muhafazakar çevrede sosyalleşmiş gençlerin din bilgisi düzeyi daha sistematik ve güçlü bulunmuştur. Yunanistan’daki seküler eğitim ortamı, gençlerin dini yönelimlerini dönüştürmekte; buna karşın aile ve topluluk desteği kimlik edinme sürecini beslemektedir.

Bulgular, katılımcıların çoğunun çocuklukta din eğitimi almasına rağmen bu eğitimi içerik ve pedagojik açıdan yetersiz bulunduğunu göstermektedir. Türkiye’de eğitim alan gençlerin din bilgisinin daha sistematik olduğu; Yunanistan’daki seküler ortamın ise dini yönelimleri dönüştürdüğü belirlenmiştir. Buna karşın aile ve topluluk desteği kimlik inşasını güçlendirmektedir. Gençlerde seküler dindarlık eğilimi öne çıkmakta, din daha çok aidiyet göstergesi olarak sürdürülmektedir. Kimlik oluşumunda aile, sosyal çevre, medya ve devlet politikaları etkili olurken; anadilde eğitim koruyucu bir rol üstlenmektedir.

Sonuç olarak araştırma, Batı Trakya Müslüman Türk gençlerinin din eğitimi süreçlerinin kimlik inşasında temel belirleyici olduğunu ortaya koymaktadır. Çalışma, din eğitimi politikalarının yeniden yapılandırılması ve azınlık gençlerin dini-kültürel kimliklerini destekleyici modellerin geliştirilmesi gerektiğini vurgulamaktadır.

Anahtar Kelimeler: Yunanistan, Batı Trakya, Din, Gençlik

THE RELATIONSHIP BETWEEN IDENTITY AND RELIGIOUS EDUCATION IN THE CONTEXT OF MUSLIM TURKISH YOUTH IN WESTERN THRACE*

ABSTRACT

This study examines the religious identity construction processes of Muslim Turkish youth living in the Western Thrace region of Greece by situating these processes within their experiences of religious education. It analyzes how the beliefs, worship practices, social environments, and educational trajectories of young people—who occupy a minority position within a secular social context—shape their religious identities. The primary aim of the research

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is to identify the extent to which religious education influences their religious orientations, forms of religiosity, and sense of identity-based belonging.

The study employs a qualitative research design. Data were collected in 2023–2024 from university students of Western Thracian origin who reside in the region and who either pursue or have completed their higher education in Greece or Turkey. Semi-structured interviews were conducted with a total of 40 participants, and the data were analyzed using descriptive analysis. Findings indicate that although most participants received religious education during childhood, they consider this education to be insufficient in terms of content and pedagogy. Students who studied in Turkey and were socialized in conservative environments exhibit a more systematic and comprehensive level of religious knowledge. While the secular educational setting in Greece reshapes young people's religious orientations, familial and communal support mechanisms contribute significantly to the maintenance of religious identity.

The results further demonstrate an emerging tendency toward “secular religiosity” among Western Thracian youth, where religion persists primarily as a marker of group belonging rather than as a consistently practiced lifestyle. Identity formation is shaped by family, social networks, media, migration, state minority policies, and globalization; mother-tongue education plays a protective role in sustaining religious identity.

In conclusion, the research reveals that religious education constitutes a central determinant in the identity construction of Muslim Turkish youth in Western Thrace. The study underscores the need to restructure religious education policies and to develop models that more effectively support the religious and cultural identities of minority youth.

Keywords: Greece, Western Thrace, Religion, Youth

SYNTHESIS OF FeTi_2O_4 SPINEL VIA SOLID-STATE REACTION METHOD AND ITS THERMAL, OPTICAL, AND ELECTRICAL CHARACTERIZATION

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ABSTRACT

FeTi_2O_4 was successfully synthesized using the conventional solid-state reaction method. This technique enables efficient diffusion and homogeneous mixing of raw materials, leading to phase-pure compound formation. thermal behavior, phase transitions, and stability of the synthesized material were investigated using Thermogravimetric and Differential Thermal Analysis (TGA/DTA). Fourier Transform Infrared Spectroscopy (FTIR) was employed to confirm the identify characteristic vibrational modes of the Fe–O and Ti–O bonds, thereby confirming the formation of the spinel structure. The optical properties of FeTi_2O_4 were examined using UV-Visible spectrophotometry in the wavelength range of 300–800 nm. The results revealed strong absorption in the visible region, and the optical band gap was estimated to be approximately 3.08 eV, indicating that FeTi_2O_4 is a wide band gap semiconductor. This suggests its potential applicability in optoelectronic devices such as UV photodetectors and transparent conducting layers. Electrical characterization was carried out using the two-probe method. The temperature-dependent resistivity measurements demonstrated semiconducting behaviour, with conductivity increasing with temperature. Activation energy was found 0.66eV at 333–353K, 0.94eV at 429–429K & 1.18eV at 583–613K. Overall, the optical and electrical analyses confirm that FeTi_2O_4 is a multifunctional material with promising applications in optoelectronics, photovoltaics, spintronic devices, and high-temperature semiconductor devices.

Keywords: Solid-State Synthesis, Thermal Analysis (TGA/DTA), Optical Band Gap, and Electrical Resistivity

OCCUPATIONAL HEALTH PROBLEMS AMONG TOBACCO FARMERS ACROSS DIFFERENT STAGES OF TOBACCO CULTIVATION IN THE KUSHTIA DISTRICT

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ABSTRACT

Tobacco cultivation has a negative impact on health, the environment, and socioeconomic conditions for tobacco farmers. This study examined occupational health problems experienced by tobacco farmers across different stages of tobacco cultivation in the Kushtia District. Primary data were collected using a structured questionnaire survey, and a purposive sampling technique was employed to select 150 respondents. Both descriptive and inferential statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) Version 27 and Microsoft Excel (2015). The results indicated that health problems varied significantly across cultivation stages. During the seedbed preparation and transplanting stages, 21.7% of farmers reported body aches, the highest among 18 identified health issues. Similarly, during the plant-caring stage and the irrigation, fertilizer, and pesticide application stages, 37.1% and 29.8% of farmers, respectively, reported body aches. In the caring-for-mature-leaves stage and the suckering and removal of auxiliary shoots and leaves stage, 28.6% and 26.4% of farmers reported experiencing a persistent bitter taste. Hand pain was the most prevalent problem during the sticking stage, affecting 46.7% of farmers. The curing stage inside the kiln posed multiple health risks, with insomnia (12.0%), excessive sweating (11.6%), and dizziness (10.9%) being the most frequently reported symptoms. In the final baling and marketing stage, 40.9% of farmers experienced allergies. The study highlights substantial occupational health risks across all stages of tobacco cultivation, underscoring the urgent need for enhanced protective measures, improved farming practices, and increased health awareness among tobacco-farming communities.

Keywords: Tobacco cultivation; Occupational Health Problems; Body Ache; Allergies; insomnia; Occupational Protective Measures.

**«I MEDICI»: AN AUDIOVISUAL FICTION.
FROM (LOCAL) FASCISM TO (GLOBAL) WESTERNIST STEROTYPE.**

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ABSTRACT

This article examines *I Medici* as a multimedia cultural text that reinterprets the Italian Renaissance through a global audiovisual lens. In the Introduction, the study situates the series within a broader genealogy of cultural reconstruction, from Fascist appropriations of Medicean symbolism to contemporary strategies of national rebranding. The article analyzes the industrial, political, and narrative mechanisms that shape the series: transnational production contexts; the Bernabei legacy and its pedagogical ethos; and the transition from local memory to global heritage branding. The central discussion highlights how the show adopts Anglo-American prestige-TV conventions to construct Lorenzo de' Medici as a heroic archetype while deploying genre-driven strategies—thriller pacing, melodrama, and selective authenticity—that mediate historical knowledge for global audiences.

In the Discussion, the article examines representational dynamics related to gender, multiculturalism, and Western stereotypes, showing how the series navigates contemporary identity politics while departing from historiographical consensus. The analysis also explores the role of soft power and national branding in transforming the Renaissance into a transnational cultural product shaped by global market expectations.

The Conclusion argues that *I Medici* exemplifies how modern historical dramas simultaneously democratize access to the past and generate mythologized narratives that blur fact and fiction. Through such processes, the Renaissance emerges as a fluid, internationally co-produced heritage construct. References include primary historical sources, media-industry documents, and secondary scholarship from cultural studies, historiography, adaptation theory, and memory studies.

KÜLTÜREL SÜRDÜRÜLEBİLİRLİK KAPSAMINDA GEÇMİŞTEN GÜNÜMÜZE GAZİANTEP MÜSTAKİL KONUT TİPOLOJİLERİNİN DEĞİŞİMİ

THE TRANSFORMATION OF DETACHED HOUSING TYPES FROM PAST TO
PRESENT IN GAZİANTEP WITHIN THE SCOPE OF CULTURAL SUSTAINABILITY

Sude BIÇKICI

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ÖZET

Gaziantep, köklü tarihi ve kültürel mimari mirası ile özgün bir şehir karakterine sahiptir. Konut kavramı tüm insanlık tarihi boyunca sosyal, ekonomik ve kültürel değişimlerin etkisiyle sürekli olarak evrilmiştir. Konutlar, insan yaşamı için büyük önem taşır. Antik dönemlerden itibaren yapılar, temel barınma ihtiyacının karşılanması amacıyla şekillenmiş; yalnızca güvenlik ve koruma sağlamakla kalmayıp, yaşam kalitesini artıran ve estetik değer sunan mekânlara dönüşmüştür. Sanayi Devrimi ile hızlanan kentleşme, modern bina mimarisinin ve toplu konut üretiminin esasını meydana getirmiştir. 20. yüzyıldan itibaren işlevsellik ve kalıcılığı birleştiren modernist yaklaşımlar ön plana çıkarken, çevre dostu ve sürdürülebilir tasarım anlayışı önem kazanmıştır. İnsanların yaşam tarzlarındaki değişiklikler, konutların yeniden şekillenmesine yol açmıştır.

Bu çalışma, Gaziantep'teki yapı mimarisinin geleneksel dönemlerden günümüze kadar geçirdiği plan tipoloji dönüşümünü sürdürülebilirlik çerçevesinde detaylı biçimde incelemektedir. Araştırma, geleneksel mimariyi temsil eden Bey Mahallesi'ndeki konutlar ile modern kent merkezindeki Şehircösteren Mahallesi'nde bulunan villalar üzerinde odaklanmaktadır. Çalışmanın amacı, bu iki konut tipinin mekânsal dağılımını, iklim adaptasyon önerilerini ve sürdürülebilirlik potansiyellerini karşılaştırmalı olarak değerlendirmektir. Ayrıca, sürdürülebilir mimari ilkeler bağlamında, değişen sosyal, ekonomik, kültürel ve çevresel dinamiklerin konutların mekânsal tasarımı, kullanım alışkanlıkları ve yaşam kültürüne etkileri analiz edilmektedir.

Çalışma kapsamında kapsamlı bir literatür taraması yapılmıştır. Mekânsal analizler gerçekleştirilmiş, bölgenin geçmiş ve şimdiki durumu fotoğraflarla belgelenmiş ve konut planı diyagramları oluşturulmuştur. Yerel halk ve uzmanlarla anketler yapılmıştır. Sonuç olarak incelenen müstakil konutların iklimi, yapı çevresi, şehir planlaması ilişkisi, mekânsal organizasyonu ve plan tipolojisi karşılaştırmalı olarak değerlendirilmiştir. Değerlendirmenin sonucunda modern müstakil konutun geleneksel müstakil konuta öykündüğü analiz edilmiştir. Bu nedenle, modern konut tasarımlarında; iklime uyumlu mekânsal çözümler, doğal ışık ve hava akışını destekleyen düzenlemeler ile geleneksel konut tipolojisinin mekânsal çözümlerinin yeniden incelenmesi önerilmektedir.

Anahtar Kelimeler: Kültürel Sürdürülebilirlik, Gaziantep Mimarisi, Müstakil Konut, Konut Tipolojileri, Geleneksel Konut, Modern Konut

ABSTRACT

Gaziantep possesses a unique urban character with its deep-rooted historical and cultural architectural heritage. The concept of housing has continuously evolved throughout human

history under the influence of social, economic, and cultural changes. Housing is of great importance for human life. Since ancient times, structures have been shaped to meet basic shelter needs; they have not only provided security and protection but have also become spaces that enhance quality of life and offer aesthetic value. Urbanization, which accelerated with the Industrial Revolution, formed the basis of modern building architecture and mass housing production. From the 20th century onwards, modernist approaches combining functionality and durability came to the fore, while eco-friendly and sustainable design gained importance. Changes in people's lifestyles have led to the reshaping of housing. This study examines in detail the transformation of building architecture in Gaziantep from traditional periods to the present day in terms of sustainability. The research focuses on the residences in Bey District, which represent traditional architecture, and the villas in Şehirgösteren District, which is in the modern city center. The aim of the study is to comparatively evaluate the spatial distribution, climate adaptation proposals, and sustainability potential of these two housing types. Furthermore, within the context of sustainable architectural principles, the effects of changing social, economic, cultural, and environmental dynamics on the spatial design, usage habits, and living culture of the residences are analyzed. Within the scope of the study, a comprehensive literature review was conducted. Spatial analyses were performed, the past and present state of the region was documented with photographs, and housing plan diagrams were created. Surveys were conducted with local residents and experts, and possible scenarios were examined. As a result, the climate, building environment, relationship with urban planning, spatial organization, and plan typology of the single-family homes examined were evaluated comparatively. The evaluation revealed that modern detached houses mimic traditional detached houses. Therefore, it is recommended that modern housing designs incorporate climate-adaptive spatial solutions, arrangements that support natural light and air flow, and a re-examination of the spatial solutions of traditional housing typologies.

Keywords: Cultural Sustainability, Gaziantep Architecture, Detached House, Housing Typologies, Traditional Housing, Modern Housing

ENDÜSTRİYEL BASINÇ SİSTEMLERİNDE KULLANILAN YIRTIлма DİSKLERİ

THE RUPTURE DISCS USED IN INDUSTRIAL PRESSURE SYSTEMS

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ÖZET

Yırtılma Diskleri (YD), basınçlı sistemleri aşırı basınçtan koruyan ve tekrar kapanmayan emniyet elemanlarıdır. Patlama disk, patlama diyaframı veya basınç emniyet disk olarak da bilinen bu elemanlar ince metal levhalardan imal edilirler ve basınç değişimlerine milisaniye düzeyinde tepki verirler. YD, normal çalışma koşullarında akışkanı tutarken, basınç değeri belirli bir eşiği aştığında hızla yırtılır ve sistemdeki basıncı serbest bırakır. Böylece, basınç sistemi veya tesisatın hasar görmesi, patlaması veya sızıntı oluşturmaları gibi tehlikeli durumlar engellenir. YD patladıktan sonra kapanma özelliğine sahip olmadığından tekrar kullanılamaz. Sistemin yeniden devreye alınabilmesi için yenisinin takılması gerekir. YD'nin çalışma prensibi oldukça mekaniktir. Öncelikle YD, sistemdeki basınç artışı sonucu elastik şekil değişimi gösterir. Daha sonra belirlenen patlama basıncına ulaşıldığında, diskin malzemesinde çekme gerilmeleri artarak malzeme dayanım sınırını aşar ve disk yırtılarak açılır. Bu yırtılma çoğunlukla YD üzerindeki çapraz oyuklar veya önceden zayıflatılmış hatlar boyunca gerçekleşir. Böylece YD, kontrollü bir biçimde parçalanır ve akış yolu tamamen açılır. Bu prensip sayesinde, tahliye çok kısa sürede ve tam kesit üzerinden sağlanır. YD'nin performansı: malzeme türü ve kalınlığı, kubbe yüksekliği, kubbe çapı, oluk geometrisi, oluk derinliği ve üretim tekniği gibi parametrelere bağlıdır. YD'ler, özellikle ani basınç yükselmesinin kritik olduğu petrokimya, havacılık, enerji üretimi, kimyasal reaktörler, hidrojen depolama üniteleri gibi birçok kritik endüstride yaygın olarak kullanılırlar. YD'ler, özellikle hızlı basınç yükselmesi veya patlama riski bulunan sistemlerde, emniyet valflerine göre çok daha hızlı tepki verirler. Ayrıca YD'lerde, emniyet valflerinde görülen mikro sızıntı, titreşim etkisiyle kaçaklar ve düzenli bakım ihtiyacı gibi sorunlar da yoktur. Bu nedenle YD'ler, yüksek saflıkta gaz sistemleri, kriyojenik depolama üniteleri ve yüksek basınç reaktörleri gibi tam sızdırmazlık ve ani tahliye gerektiren uygulamalarda en uygun çözüm elemanlarıdır.

Bu çalışmada, endüstriyel basınç sistemlerinde kullanılan YD'lerin çalışma prensibi, malzeme tipleri, çeşitleri, hesaplama yöntemleri, üretim teknolojileri ve kullanım alanları hakkında kapsamlı bilgiler verilmiştir. Ayrıca hem endüstriyel güvenliği artırmak hem de sistem verimliliğine katkı sağlamak amacıyla yapılan tasarım optimizasyonlarının hangi kriterlere bağlı olduğu da detaylı olarak açıklanmıştır.

Anahtar Kelimeler: Yırtılma diskleri, patlama diskleri, patlama diyaframı, basınç emniyet disk, kubbe yüksekliği, disk kalınlığı, oluk geometrisi, oluk derinliği.

ABSTRACT

Rupture Discs (RD) are safety elements that protect pressurized systems from excessive pressure and do not reclose. These elements, also known as bursting discs, bursting diaphragms or pressure relief discs, are manufactured from thin metal sheets and respond to pressure changes at the millisecond level. While the RD retains the fluid under normal operating conditions, it quickly ruptures and releases the pressure in the system when the pressure value exceeds a certain threshold. In this way, dangerous situations such as damage, explosion or leakage of the pressure system or installation are prevented. RD cannot be used again after it explodes because it does not have a closing feature. A new one must be installed before the system can be put back into service. The working principle of RD's is quite mechanical. First of all, RD shows elastic deformation as a result of the pressure increase in the system. Then, when the determined bursting pressure is reached, the tensile stresses in the material of the disc increase and exceed the material strength limit, and the disc tears open. This rupture occurs most often along cross-grooved or previously weakened lines on the RD. Thus, the RD is broken down in a controlled manner and the flow path is completely opened. Thanks to this principle, evacuation is achieved in a very short time and over a full cross-section. The performance of RD's depends on parameters such as material type and thickness, dome height, dome diameter, groove geometry, groove depth and manufacturing technique. RDs are widely used in many critical industries such as petrochemical, aviation, power generation, chemical reactors, hydrogen storage units, especially where sudden pressure increases are critical. RDs react much faster than safety valves, especially in systems with rapid pressure rise or risk of explosion. Additionally, there are no problems such as micro-leakage, leaks due to vibration, or the need for regular maintenance in RD, which are common in safety valves. For this reason, RDs are the most suitable solution elements in applications requiring complete sealing and instantaneous discharge, such as high-purity gas systems, cryogenic storage units and high-pressure reactors.

In this study, comprehensive information is given about the working principle, material types, varieties, calculation methods, production technologies and application areas of RDs used in industrial pressure systems. Moreover, the criteria on which design optimizations are made to increase both industrial safety and contribute to system efficiency are explained in detail.

Keywords: Rupture discs, bursting discs, bursting diaphragm, pressure relief disc, dome height, disc thickness, groove geometry, groove depth.

**EXAMINING THE RELATIONSHIPS BETWEEN CURIOSITY, MATHEMATICS
SELF-EFFICACY, SOCIOECONOMIC STATUS, AND MATHEMATICS
ACHIEVEMENT USING STRUCTURAL EQUATION MODELING BASED ON PISA
2022 DATA**

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Abstract

This study employs Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to examine the relationships among socioeconomic status (ESCS), curiosity (CURIOAGR), mathematics self-efficacy (MATEFF), the advanced mathematics self-efficacy 2021 form (MATEFF21), and mathematical literacy (PV1MATH) in the Turkish sample of PISA 2022. In the first stage, three alternative CFA models were tested to assess the measurement validity of the affective constructs. Curiosity was included in all models, while mathematics self-efficacy was modeled in two distinct forms. Model comparisons were conducted based on factor loadings and widely used fit indices. Considering methodological critiques noting that the CMIN/DF ratio is not a reliable indicator in large samples (Tabachnick & Fidell, 2019; Kline, 2023; Schumacker & Lomax, 2016), the evaluation primarily relied on more robust indices such as RMSEA, CFI and TLI. The third model demonstrated superior measurement fit and was therefore selected for subsequent structural analyses. In the structural model, ESCS was specified as an exogenous variable, and the relationships among curiosity, advanced mathematics self-efficacy, and mathematical literacy were examined. The findings highlight the complementary role of non-cognitive factors in explaining mathematics performance and provide evidence on how socioeconomic background may exert indirect effects on cognitive outcomes within the PISA framework.

Keywords: PISA 2022, Curiosity, Mathematics Self-Efficacy (MATEFF), Advanced Mathematics Self-Efficacy (MATEFF21), ESCS, Mathematical Literacy, CFA, SEM

OKUL YÖNETİCİLERİNİN LİDERLİK YAKLAŞIMLARINA İLİŞKİN ALGILARI: BİR FENOMENOLOJİK ANALİZ

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ÖZET

Eğitim örgütlerinin etkin işleyişi ve başarı hedeflerine ulaşması, güçlü ve vizyoner bir yönetici liderliğini zorunlu kılar. Okul yöneticilerinin liderlik becerileri; sadece akademik başarıyı değil, aynı zamanda öğretmen motivasyonunu, okul iklimini ve öğrenci gelişimini de doğrudan etkilemektedir. Bu bağlamda, çağdaş liderlik yaklaşımlarının benimsenmesi, eğitim kurumlarının değişen ihtiyaçlara uyum sağlaması ve sürdürülebilir başarı elde etmesi açısından kritik öneme sahiptir. Bu anlayıştan hareketle, bu çalışmanın temel amacı, okul yöneticisi ve öğretmenlerin bakış açılarına dayalı olarak, mevcut müdür liderlik uygulamalarını derinlemesine incelemek ve onların çağdaş anlamda daha etkili liderlik yapabilmeleri için somut öneriler geliştirmektir. Araştırma, 2025-2026 eğitim-öğretim yılında, Aksaray il merkezi ile Konya'nın Karapınar ilçesinde bulunan okullarda gerçekleştirilecektir. Çalışmada, katılımcıların deneyimlerine içeriden bir bakış açısı getirmeyi hedefleyen nitel araştırma yöntemi benimsenecek ve olgunun katılımcıların gözünde nasıl anlamlandırıldığını keşfetmek için fenomenolojik (olgubilim) desen kullanılacaktır. Katılımcı grubu, çeşitliliği ve ulaşılabilirliği gözetken tabakalı, amaçlı ve kolay ulaşılabilir örnekleme stratejilerinin bir arada kullanımı ile belirlenecektir. Veri toplama aracı olarak, araştırmacılar tarafından kapsamlı bir alan yazın taramasının ardından özel olarak geliştirilecek yarı yapılandırılmış bir görüşme formu kullanılacak ve bu form aracılığıyla seçilen okul yöneticileri ve öğretmenlerle birebir görüşmeler yapılarak zengin ve derinlemesine nitel veriler toplanacaktır. Toplanan bu veriler, içerik analizi yöntemiyle sistematik bir şekilde kodlanacak, kategorilere ayrılacak ve ortaya çıkan ana temalar yorumlanacaktır. Son aşamada ise, ulaşılan bu bulgular, alan yazındaki mevcut çalışma sonuçları ile karşılaştırılarak kapsamlı bir şekilde tartışılacak ve nihai olarak, okul müdürleri gibi uygulayıcılar, eğitim yöneticileri ve politika yapıcılar için teorik ve pratik anlamda değer taşıyan somut sonuç ve öneriler sunulacaktır.

Anahtar kelimeler: Liderlik, Okul Yöneticisi, Liderlik Yaklaşımları

PERCEPTIONS OF SCHOOL ADMINISTRATORS REGARDING LEADERSHIP APPROACHES: A PHENOMENOLOGICAL ANALYSIS

ABSTRACT

The effective functioning of educational organizations and their achievement of success goals necessitate strong and visionary administrative leadership. The leadership skills of school administrators directly impact not only academic achievement but also teacher motivation, school climate, and student development. In this context, the adoption of contemporary leadership approaches is critical for educational institutions to adapt to changing needs and achieve sustainable success. Based on this understanding, the primary aim of this study is to examine the current leadership practices of principals in depth, based on the perspectives of school administrators and teachers, and to develop concrete recommendations to enable them to lead more effectively in a contemporary sense. The research will be conducted in schools located in the city center of Aksaray and the Karapınar district of Konya during the 2025-2026 academic year. The study will adopt a qualitative research method, aiming to provide an insider's perspective into the participants' experiences, and will utilize a phenomenological design to explore how the phenomenon is meaningfully experienced by the participants. The participant group will be determined using a combination of stratified, purposive, and convenience sampling strategies to ensure diversity and accessibility. A semi-structured interview form, which will be specifically developed by the researchers following a comprehensive literature review, will be used as the data collection instrument. Through this form, one-on-one interviews will be conducted with selected school administrators and teachers to gather rich and in-depth qualitative data. The collected data will be systematically coded, categorized, and interpreted using the content analysis method to identify emerging key themes. In the final stage, the obtained findings will be comprehensively discussed by comparing them with the results of existing studies in the literature. Ultimately, concrete conclusions and recommendations, valuable in both theoretical and practical terms for practitioners such as school principals, educational administrators, and policymakers, will be presented.

Key words: Leadership, School Administrator, Leadership Approaches.

DİJİTAL ÇAĞDA YENİDEN DÜŞÜNMEK: SİBER ZORBALIK ve ÖĞRENCİ RETHINKING IN THE DIGITAL AGE: CYBERBULLYING AND STUDENT

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ÖZET

Günümüzde dijital iletişim araçlarının kullanımının yaygınlaşması, öğrenciler arasındaki etkileşim biçimlerini önemli ölçüde değiştirmiştir. Bu dönüşüm, öğrencilerin sosyal ilişki ağlarını genişletirken aynı zamanda karmaşıklaştıran yeni bir iletişim ve etkileşim sistemini ortaya çıkarmıştır. Bu durum, dijital ortamlarda çeşitli siber zorbalık türlerinin ortaya çıkmasına zemin hazırlamakta ve öğrencilerin psikolojik iyi oluşu ile öğrenme süreçleri üzerinde olumsuz etkiler yaratmaktadır. Öğrenciler fiziksel ortamlarda karşılaştıkları geleneksel zorbalığı dijital ortama taşıyarak; ya zorbalığa karışmakta ya da maruz kalmaktadır. Bu araştırmanın amacı, ortaöğretim öğrencilerinin okul ortamında karşılaştıkları siber zorbalık türlerini öğrencilerin bakış açısıyla ortaya koymak ve öğrencilerin bu durumlarla başa çıkma stratejilerini incelemektir. Araştırma, nitel araştırma yöntemi ve fenomenolojik desen çerçevesinde yürütülmüştür. Katılımcılar, tabakalı, amaçlı ve kolay ulaşılabilir örnekleme yöntemleri kullanılarak belirlenmiş ve 2025-2026 eğitim-öğretim yılı birinci döneminde öğrenim görmekte olan 12 öğrenci çalışmaya dâhil edilmiştir. Veri toplama sürecinde yarı yapılandırılmış görüşme formu kullanılmış ve elde edilen veri içerik analizi yöntemi ile çözümlenerek kod, tema ve alt temalar hâlinde çözümlenmiştir. Araştırmadan elde edilen bulgular, öğrencilerin karşılaştıkları siber zorbalık biçimlerinin oldukça çeşitli olduğunu ortaya koymuştur. Ayrıca çalışma, siber zorbalıkla mücadelede etkili önleme stratejilerinin geliştirilmesine katkı sağlamış; dijital vatandaşlık bilincinin güçlendirilmesine yönelik önemli sonuçlar sunmuştur. Bununla birlikte araştırma, okul temelli politika geliştirme süreçlerine ilişkin somut öneriler ortaya koyarak uygulamaya dönük bir rehber işlevi görmüştür.

Anahtar Kelimeler: Siber zorbalık, ortaöğretim, dijital ortam, öğrenci

ABSTRACT

The widespread use of digital communication tools today has significantly changed the forms of interaction among students. This transformation has given rise to a new system of communication and interaction that expands students' social networks while also making them more complex. This situation paves the way for various types of cyberbullying to emerge in digital environments and has negative effects on students' psychological well-being and learning processes. Students either engage in or are subjected to bullying by transferring traditional bullying encountered in physical environments to the digital environment. The aim

of this research is to reveal the types of cyberbullying encountered by secondary school students in the school environment from the students' perspective and to examine the students' coping strategies for these situations. The research was conducted within the framework of qualitative research methods and a phenomenological design. Participants were determined using stratified, purposive, and convenience sampling methods, and 12 students enrolled in the first semester of the 2025-2026 academic year were included in the study. During the data collection process, a semi-structured interview form was used, and the data obtained was analysed using content analysis, resulting in codes, themes, and sub-themes. The findings from the research revealed that the forms of cyberbullying encountered by students were quite diverse. Furthermore, the study contributed to the development of effective prevention strategies against cyberbullying and presented important results for strengthening digital citizenship awareness. In addition, the research served as an application-oriented guide by putting forward concrete recommendations regarding school-based policy development processes.

Keywords: Cyberbullying, secondary education, digital environment, student

PALİMPSEST TARİHİ YERLEŞİMLERİN “KABUK, GİZLİ VE KİSMİ KABUK” TİPOLOJİLERİNİN DEĞER ANALİZİ İLE BELİRLENMESİ

DETERMINING THE TYPOLOGY OF “SHELL, LATENT AND PARTIAL SHELL” OF
PALIMPSESTS HISTORICAL SETTLEMENTS THROUGH VALUE ANALYSIS

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ÖZ

Palimpsest kavramı köken olarak eski bir el yazmasının silinerek üzerine yeniden yazı yazılması anlamına gelmektedir. Kentlerde ise, yerleşimlerin zaman içinde biriktirdiği mimari, arkeolojik ve peyzaj öğeleriyle birlikte toplumsal ve ekonomik izleri de kapsayan bir kavramdır. Geleneksel korumanın çoğunlukla tek döneme odaklanması sorun kabul edilmekte; bu yüzden çok katmanlı yapıyı bir bütün olarak okumaya yönelik, tipolojiye ve değerlere göre bir koruma yaklaşımı önerilmektedir. Bu nedenle katmanlar arasındaki ilişkiyi tanımlayabilmek için üç adet tipoloji belirlenmiştir.

Kabuk tipolojisi (aynı strüktür içinde üst üste gelen dönemler), *Kısmi kabuk* tipolojisi (farklı dönemlerin yan yana / iç içe eklenildiği yapılar) ve *Gizli katman* tipolojisi (yeraltında korunmuş arkeolojik katmanlar). Bu üç tipolojiye ek olarak, özellikle devşirme malzemenin yeni kabuğa strüktür ve malzeme olarak tümüyle entegre olduğu durumları tanımlamak üzere “*kaynaşmış/bütünleşmiş*” (spolia temelli) bir alt tip de önerilmektedir. Atina–Plaka’da Panagia Gorgoepikoos Kilisesi’nin devşirme bloklarla örülü kabuğu, Roma–Monti’de ortaçağ revaklı evlerde forumlardan sökülen sütun ve sütun başlıklarının kullanımı, Kudüs Cardo–Batı Duvarı koridorunda payandaya gömülü Roma sütunu, Toledo ve Mexico City’de önceki uygarlıklara ait taşların yeni dinî ve kamusal yapılarda malzeme olarak kullanılması bu tipolojinin örnekleri olarak ele alınmaktadır.

Bu çalışmada, Atina–Plaka, Roma–Monti, Kudüs Eski Şehir’de Cardo–Batı Duvarı koridoru ve Toledo tarihî merkezi olmak üzere yurtdışından seçilen dört yerleşim ayrıntılı biçimde incelenmektedir. Bu alanlar, farklı coğrafya, kültür ve tarihi temsil etmeleri nedeniyle karşılaştırmalı analiz için seçilmiştir. Her yerleşim örneğinde, Feilden ve Jokilehto’nun değer ölçütleri kullanılarak değer profili oluşturulmuştur. Böylece katman tipolojileri ile değer puanlamaları arasındaki ilişkiler ortaya konmuştur. Bulgular, her katman tipinin belirli risklerle ilişkili olduğunu göstermiştir. Farklı yapı tipleri için risk analizi yapılmakta ve buna dayanarak yapının değerini öne çıkaran bütüncül koruma senaryoları önerilmektedir. Böylece palimpsest kentler için, katmanların okunabilirliğini artırmayı ve farklı dönemlerin değerlerini birlikte yaşatmayı hedefleyen yeni bir koruma çerçevesi sunulmaktadır.

Anahtar Kelimeler: Palimpsest, Çok Katmanlı Kentler, Tipoloji, Değer Analizi, Bütüncül Koruma, Tipoloji Analizi

ABSTRACT

The concept of palimpsest originates from the act of erasing an old manuscript and writing over it again. In cities, it is a concept that encompasses the architectural, archaeological, and landscape elements accumulated by settlements over time, as well as their social and economic traces. The fact that traditional conservation often focuses on a single period is considered problematic; therefore, a conservation approach based on typology and values, aimed at reading the multi-layered structure as a whole, is proposed. For this reason, three typologies have been defined to describe the relationship between the layers.

Shell typology (periods superimposed within the same structure), partial shell typology (structures where different periods are juxtaposed/intertwined), and hidden layer typology (archaeological layers preserved underground). In addition to these three typologies, a sub-type of “fused/integrated” (spolia-based) is also proposed to describe situations where the spolia material is completely integrated into the new shell in terms of structure and material. The shell of the Panagia Gorgoepikoos Church in Athens-Plaka, built with spolia blocks, the use of columns and column capitals removed from forums in medieval arcaded houses in Rome–Monti, a Roman column embedded in a buttress in the Cardo–Western Wall corridor in Jerusalem, and the use of stones from previous civilizations as material for new religious and public buildings in Toledo and Mexico City are addressed as samples of this typology.

In this study, four selected settlements abroad are examined in detail: Athens–Plaka, Rome–Monti, the Cardo–Western Wall corridor in the Old City of Jerusalem and the historic center of Toledo. These areas were chosen for comparative analysis because they represent different geographies, cultures, and histories. A value profile was created for each sample settlement using Feilden and Jokilehto's value criteria. Therefore, the relationships between layer typologies and value scores were presented. The findings show that each layer type is associated with specific risks. Risk analysis is being conducted for different building types, and based on this, comprehensive conservation scenarios that highlight the value of the structure are being proposed. Thus, it offers a new conservation framework for palimpsest cities that aims to increase the legibility of layers and preserve the values of different periods together.

Keywords: Palimpsest, Multi-layered cities, Typology, Value assessment, Integrated conservation, Typological analysis

DOĞAL AĞRI YÖNETİMİ: GEBELİK VE DOĞUMDA NONFARMAKOLOJİK YÖNTEMLER

NATURAL PAIN MANAGEMENT: NON-PHARMACOLOGICAL METHODS IN PREGNANCY AND BIRTH

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ÖZET

Gebelikte ve özellikle doğum eylemi sırasında deneyimlenen ağrı, kadın sağlığının yönetimi açısından merkezi bir konuyu teşkil etmektedir. Farmakolojik yaklaşımların fetüs üzerindeki potansiyel etkileri ve sınırlı kullanım alanları göz önüne alındığında, nonfarmakolojik ağrı yöntemleri önem kazanmaktadır. Bu yöntemler, fizyolojik ve psikolojik mekanizmalar üzerinden ağrı algısını etkileyerek, daha güvenli, bütüncül ve anne merkezli bir deneyim sağlamayı hedefler. Gebelikte ve doğum eylemi sürecinde ağrı deneyimini yönetmek için kullanılan nonfarmakolojik yöntemler, anne ve fetüs sağlığı açısından risksiz, bütüncül bir alternatifi temsil eder. Bu kapsamda gevşeme teknikleri (Hipnoz, Biofeedback, Müzik, Yoga) anksiyeteyi azaltarak ve parasempatik aktiviteyi artırarak kas gerginliğini hafifletir. Ayrıca, solunum teknikleri (Lamaze ve Dick-Read), kadının dikkatini ritmik bir eyleme yönlendirerek ağrı sinyalinin uzaklaştırır. Benzer şekilde, mental uyarılma teknikleri (Odaklanma, Hayal Kurma ve Dikkat Dağıtma) yoluyla, merkezi sinir sisteminde ağrıya ayrılan bilinçsel kaynaklar başka yöne kaydırılarak algılanan ağrı yoğunluğu düşürülür.

Tensel ve fiziksel uyarı yöntemleri ise daha çok periferik sinir sistemi ve omurilik düzeyinde çalışır. Masajın doğum ağrısı üzerindeki etkisi, Kapı Kontrol Teorisi (KKT) ile açıklanmaktadır. KKT, masajın “kapıyı kapatmada” etkili olabileceğini, bununla birlikte ağrı algısını değiştirdiği gözlenen büyük sinir liflerini uyararak, zararlı uyarıların iletimini durdurabilmesine dayanmaktadır. Akupunktur yönteminde ise beden meridyenlere bölünmekte ve periferik sinirlerine iğne uygulanma ve elektriksel akım verilmesiyle ağrı durumu azaltılmaktadır. Bu bütüncül stratejiler, gebeye doğum eylemi üzerinde yüksek bir kontrol hissi sağlayarak, daha güvenli ve pozitif bir doğum deneyimine önemli katkılarda bulunur.

Sonuç olarak, gebelerde nonfarmakolojik ağrı yöntemlerinin kullanılması, doğum sürecinin fizyolojik sürecini destekleyen doğum deneyimini olumlu yönde etkileyen bir bakım bileşeni olarak kabul edilmektedir.

Anahtar kelimeler: Ağrı, doğum, gebe

ABSTRACT

Pain experienced during pregnancy, and especially during labor, constitutes a central issue in the management of women's health. Given the potential effects of pharmacological approaches on the fetus and their limited application areas, non-pharmacological pain management methods are gaining importance. These methods aim to provide a safer, holistic, and mother-centered experience by influencing pain perception through physiological and psychological mechanisms. Non-pharmacological methods used to manage pain during pregnancy and labor represent a risk-free, holistic alternative for maternal and fetal health. In this context, relaxation techniques (hypnosis, biofeedback, music, yoga) alleviate muscle tension by reducing anxiety and increasing parasympathetic activity. Furthermore, breathing techniques (Lamaze and Dick-Read) direct the woman's attention to a rhythmic action, diverting it from the pain signal. Similarly, through mental stimulation techniques (Focus, Imagery, and Distraction), the conscious resources allocated to pain in the central nervous system are diverted, reducing the perceived pain intensity. Sensual and physical stimulation methods, on the other hand, work primarily at the peripheral nervous system and spinal cord level. The effect of massage on labor pain is explained by the Gate Control Theory (GCT). GCT is based on the theory that massage can be effective in "closing the gate," stimulating large nerve fibers that have been shown to alter pain perception and thus interrupting the transmission of noxious stimuli. Acupuncture, on the other hand, divides the body into meridians and reduces pain by applying needles and applying electrical currents to peripheral nerves. These holistic strategies provide the pregnant woman with a greater sense of control over her labor, contributing significantly to a safer and more positive birth experience.

Ultimately, the use of non-pharmacological pain management in pregnant women is considered a component of care that supports the physiological processes of labor and positively impacts the birth experience.

Keywords: Pain, birth, pregnant

**SERAMİK SİHHİ ÜRÜNLER İÇİN ÜRÜN FORMUNA UYUMLU AMBALAJ
TASARIMI**
FORM-FITTING PACKAGING DESIGN FOR SANITARY CERAMIC PRODUCTS

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ÖZET

Seramik ürünlerin lojistik süreçlerinde her yıl milyonlarca metreküp hava (boşluk) sevkiyatı yapılmaktadır. Ürünler ile ambalajları arasında kalan ve hapsolan gereksiz hacim, dünyanın dört bir yanında depolarda, tırlarda, gemilerde ve uçaklarda ürünler için ayrılan alanı işgal etmektedir. Basit geometrik şekle sahip olmayan ürünlerin formuna tam uygun olmayan genellikle dikdörtgen prizma ve türevi formlardaki ambalajlarda depolama yapılmaktadır. Bu sebepten sevkiyat esnasında ürün başına düşen hacim miktarı artarak daha geniş alanlar kaplamakta ve daha az ürünün daha fazla araç ile sevk edilmesine yol açmaktadır. Bu durum yalnızca firmaların lojistik maliyet artışı, depolama alan problemleri vs. sebep olmakla kalmayıp, aynı zamanda karbon salınımını da arttırarak hava kirliliğine ve karbon ayak izinde artışa yol açacaktır. Bu çalışmada, belirtilen problemler doğrultusunda bazı sıhhi seramik ürünlerin formuna uygun bir ambalaj tasarımı gerçekleştirilmiştir. Şimdilik yalnızca birkaç klozet modeli ile uyumlu olan tasarım, vitrifiye ürünlerde lojistik, depolama / istifleme vb. alanlarda inovatif bir başlangıçtır. Sevk edilecek ürünün formuna uygun biçimde tasarlanan ambalaj, yan yana ve üst üste biçimde istiflenen ürünlerin belirli hacimlerde daha verimli alan kullanımına imkan tanıyacaktır. Burada amaç, paketleme esnasında yaşanan verimsiz hacim kullanımını minimuma indirmek, ambalaj ile ürün arasında oluşan boşlukları minimize ederek iç bölgeye hapsolan hacmi dış bölgeye kazandırıp alandan tasarruf sağlamaktır. Sağlanan alan tasarrufu sonucunda daha verimli bir istiflemeyle beraber daha az araçla daha fazla ürünün sevkiyatının mümkün kılınması ve sürdürülebilir bir gelecek için daha düşük karbon ayak izi ve sürdürülebilirliği desteklemeyi hedeflenmektedir.

Anahtar Kelimeler: Sıhhi Ürün, Paketleme Tasarımı, Lojistik optimizasyonu, Karbon Ayak İzin Azaltma

ABSTRACT

In the logistics processes of ceramic sanitary ware, millions of cubic meters of air (void volume) are transported every year. The unnecessary void spaces trapped between products and their packaging occupy a significant portion of the available storage and transportation volume in warehouses, trucks, ships, and aircraft worldwide. Due to the irregular and complex geometries of sanitary ceramic products, they are typically packed in rectangular or prismatic boxes that do not conform to the product's actual form. Consequently, the volumetric space allocated per product during transportation increases, resulting in lower load efficiency and a greater need for transport vehicles. This situation not only increases logistics and warehousing costs for manufacturers but also contributes to elevated carbon emissions, air pollution, and a larger carbon footprint. In this study, a packaging design conforming to the form of selected sanitary

ceramic products has been developed to address these issues. The proposed design, which is currently compatible with several water closet (WC) models, represents an innovative step toward improving logistics, storage, and stacking efficiency in vitreous china products. The form-fitting packaging structure enables more efficient utilisation of available cargo space by allowing the products to be stacked both side-by-side and vertically with minimal voids. The main objective is to minimise inefficient volume usage during packing, reduce the internal empty spaces between the product and its packaging, and thus reclaim trapped volume for external use. The resulting spatial efficiency allows for the shipment of more products with fewer vehicles, supporting both cost reduction and environmental sustainability through a lower carbon footprint and improved resource efficiency.

Keywords: Sanitary ware, packaging design, logistics optimisation, carbon footprint reduction

DOUBLE BODY FLOW SIMULATIONS WITH A BULK CARRIER AT MODEL SCALE AND FULL-SCALE

Utku Cem KARABULUT

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Abstract

Accurate prediction of a ship's resistance and wake field is crucial for optimizing hull design and propeller performance. However, the scale effect between model and full scale remains a significant challenge in computational fluid dynamics (CFD) for naval architecture. This study investigates the scale effect on the form resistance and wake distribution of the Japan Bulk Carrier (JBC), a widely recognized benchmark hull form. Steady Reynolds-Averaged Navier-Stokes (RANS) simulations are performed for both model and full-scale geometries in a double-body flow configuration, effectively isolating the viscous and pressure resistance components by neglecting free-surface effects. The primary objective is to compute and compare the form factor ($1+k$) and the nominal wake fraction at both scales. The simulations reveal a notable scale effect on the viscous resistance, with the form factor demonstrating a measurable increase at full scale compared to the model scale. Furthermore, the analysis of the nominal wake field shows significant differences in the velocity distribution and the extent of the wake region at the propeller plane. These findings underscore the importance of accounting for scale effects in the extrapolation of model-scale resistance tests and in the design of propellers for full-scale operation. The results provide valuable validation data for scale-correction methodologies and contribute to the improved hydrodynamic performance prediction of full-form vessels.

Keywords: Scale Effect, Form Factor, Nominal Wake, RANS Simulations, Japan Bulk Carrier.

DERIVATION OF SEVEN PARAMETER MATHEMATICAL HULL FORMS

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Abstract

The availability of practical, parametrically defined hull forms is essential for efficient hydrodynamic studies and preliminary ship design. While established models like the Wigley hull are valuable for fundamental research, their geometric limitations restrict their application to modern, full-formed vessels. This paper presents a novel methodology for deriving closed-form mathematical hull forms through a series of coordinated transformations applied to a base ellipsoid. The formulation is governed by seven principal parameters: Length-to-Beam ratio (L/B), Beam-to-Draft ratio (B/T), Block Coefficient (C_B), Maximum Sectional Area Coefficient (C_M), Waterplane Area Coefficient (C_{WP}), Longitudinal Center of Buoyancy (LCB), and Vertical Center of Buoyancy (VCB). These parameters provide direct control over the hull's fundamental geometric and hydrostatic properties, enabling the generation of a wide spectrum of hull shapes—from fine, high-speed forms to full, cargo-carrying hulls—with realistic sectional area and waterplane distributions. The resulting mathematical expressions are explicit and computationally inexpensive, making them ideal for generating baseline geometries without reliance on complex CAD systems. The primary aim of this work is to provide a versatile and practical tool for academic research, serving as a benchmark for computational fluid dynamics (CFD) validation, seakeeping analysis, and optimization studies. Furthermore, the method offers significant utility in the preliminary design stage, allowing for the rapid exploration of the design space and the establishment of feasible starting points for more detailed design development. This approach bridges a critical gap between simplistic academic models and complex, production-oriented hull forms.

Keywords: Parametric hull design, Mathematical hull forms, Geometric modelling, Preliminary design

BİYO KAYNAKLI KOMPOZİT MALZEMELERİN MEKANİK DAYANIMI
MECHANICAL STRENGTH OF BIO-BASED COMPOSITE MATERIALS

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ÖZET

Kimyasal atıkların çevrede uzun yıllar boyunca çözünmemesinden dolayı çevre kirliliği artmaktadır. Bundan dolayı son yıllarda biyobozunur malzemelerin önemi artmaktadır. Biyo malzemelerin her geçen gün daha sık kullanımının artması ile petro kimyasal malzemelerin kullanımı azalmaktadır. Teknolojinin gelişmesi ile yeni üretim metotları bulunmaktadır. Bu yeni üretim metotlarından birisi de elektrospinning üretim yöntemidir. Elektrospinning ile üretilen nanofiberler mekanik özellikleri olarak daha dayanıklı malzemeler üretilir. Üretilen nanofiberler çevre dostu kompozit malzemelere dönüştürülmektedir. Bizim yaptığımız deney düzeneğinde biyopolimer olarak PVA (Polivinil Alkol) polimeri kullandık. Elektrospinning ile üretim yönteminde 24kV voltajda, şırıngadan 0.8 ml/h miktarda sıvı beslemesi ile şırınga ve toplayıcı silindir arasındaki mesafe 15 cm olarak ayarlanmıştır. Elde edilen nanofiberlerin kimyasal ve morfolojik özelliklerine; SEM (Taramalı elektron mikroskobu) bakılmıştır. Üretilen nanofiber malzemeler çekme testi standartlarına uygun olacak şekilde kesilmiştir. 24 saat ortam sıcaklığında son kürleşme için bırakılan malzemeler sonrasında kompozit malzeme üretiminde kullanılmışlardır. Kompozit malzemeler Polivinil Alkol nanofiberleri, Karbon nanotüp elyaf ve Cam elyaflarla sıralı bir şekilde 9 katmanlı olacak şekilde epoksi reçine kullanılarak üretilmişlerdir. Kompozit malzemeler ilk kürleşme de 24 saat ortam sıcaklığında sertleşmeleri beklendikten sonra kalıptan çıkarılarak sonrasında ortam sıcaklığında 24 saat ikinci kürleşme için bekletilmişlerdir. Üretilen kompozit malzemelerin düşük çeneli çekme cihazında testleri yapılmıştır. Elde edilen sonuçların literatür ile karşılaştırılması sonucunda, sonuçlarda pozitif yönde iyileşme elde edildiği tespit edilmiştir.

Anahtar kelimeler: Kompozit Malzeme, PVA, Biyopolimer, Nanofiber, Elektrospinning

ABSTRACT

Chemical waste does not dissolve in the environment for many years, leading to increased environmental pollution. For this reason, the importance of biodegradable materials has increased in recent years. With the increasing use of biomaterials every day, the use of petrochemical materials is decreasing. With the advancement of technology, new production methods have emerged. One of these new production methods is the electrospinning production method. Nanofibers produced by electrospinning are more durable materials in terms of mechanical properties. The produced nanofibers are converted into environmentally friendly composite materials. In our experimental setup, we used PVA (Polyvinyl Alcohol) polymer as a biopolymer. In the electrospinning production method, the distance between the syringe and the collector cylinder was set to 15 cm, with a liquid feed rate of 0.8 ml/h from

the syringe at a voltage of 24kV. The chemical and morphological properties of the obtained nanofibers were examined using SEM (Scanning Electron Microscope). The produced nanofiber materials were cut to comply with tensile test standards. The materials, left for final curing at ambient temperature for 24 hours, were subsequently used in composite material production. The composite materials were produced using epoxy resin in a sequential manner with 9 layers consisting of polyvinyl alcohol nanofibers, carbon nanotube fibers, and glass fibers. The composite materials were left to cure for 24 hours at room temperature for initial curing, then removed from the mold and left for 24 hours at room temperature for secondary curing. The produced composite materials were tested on a low-tension tensile testing machine. Comparison of the results with the literature revealed a positive improvement in the results.

Keywords: Composite Material, PVA, Biopolymer, Nanofiber, Electrospinning

GEBELİK SÜRECİNDE ORTAYA ÇIKABİLECEK ÇATIŞMALAR VE BU ÇATIŞMALARA YÖNELİK KARAR VERME SÜRECİ

CONFLICTS THAT MAY ARISE DURING PREGNANCY AND THE DECISION-MAKING PROCESS FOR THESE CONFLICTS

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ÖZET

Gebelik, kadının biyolojik, psikolojik ve sosyal alanlarda kapsamlı değişimler yaşadığı çok boyutlu bir adaptasyon sürecidir. Bu süreç yalnızca fizyolojik dönüşümleri değil, anne adayının duygusal durumu, aile ilişkileri ve toplumsal konumunu da etkilemektedir. Literatür, gebelerde kaygı ve endişe düzeylerinin özellikle birinci ve üçüncü trimesterlerde arttığını; ilk trimesterde görülen fiziksel rahatsızlıklar ve düşük korkusunun eş ilişkilerinde yakınlık ve cinsel istekte azalmaya neden olabildiğini göstermektedir. Eş desteği, doğum sonrası anneliğe uyum ve annelik yeterliliği açısından koruyucu bir unsur olarak değerlendirilmektedir. Modern iş yaşamında kadınların artan görünürlüğü, annelik ve kariyer rolleri arasında çatışma yaratmakta; iş yerinde ayrımcılık, bakım yükünün eşitsiz dağılımı ve kreş erişimindeki kısıtlılık mesleki sürdürülebilirliği olumsuz etkilemektedir. Bu nedenle cinsiyet eşitliğini destekleyen politikalar ve sosyal destek sistemleri önem taşımaktadır. Gebelikte beden ölçülerindeki hızlı değişim ve toplumsal güzellik normları, beden imajı memnuniyetsizliğini tetikleyebilmektedir. İstenmeyen gebelikler ise fiziksel ve ruhsal sağlık açısından risk oluşturmakta ve güvensiz düşük girişimlerini artırabilmektedir. Güvenilir bilgiye erişim, yargılayıcı olmayan danışmanlık ve modern tıp ile geleneksel yaklaşımların bilinçli entegrasyonu, sağlıklı gebelik deneyimini destekleyen temel unsurlardır.

Anahtar Kelimeler: Ebelik, gebelik, çatışma, yöntemler, çözümler

ABSTRACT

Pregnancy is a multidimensional adaptation process in which women experience significant biological, psychological, and social changes. This period affects not only physiological transformation but also the emotional state, family relationships, and social position of the expectant mother. Research indicates that anxiety and worry increase particularly during the first and third trimesters. Physical discomfort and fear of miscarriage in the first trimester may reduce intimacy, sexual desire, and communication with the partner. Partner support functions as a protective factor, facilitating postpartum adjustment and maternal competence. In contemporary work life, the increasing visibility of women creates a conflict between motherhood and career roles. Workplace discrimination, unequal distribution of caregiving responsibilities, and limited access to childcare negatively impact women's professional continuity. Therefore, policies promoting gender equality and social support systems are essential. Rapid bodily changes during pregnancy, combined with societal beauty norms, may lead to body image dissatisfaction. Unwanted pregnancies pose physical and psychological risks and may increase unsafe abortion attempts. Access to reliable information, nonjudgmental counseling, and the conscious integration of modern medical practices with traditional approaches contribute to a healthier pregnancy experience.

Keywords: Midwifery, pregnancy, conflict, methods, solutions

SÜRDÜRÜLEBİLİRLİK MUHASEBESİNDE YENİ UFUKLAR: NLP VE YAPAY ZEKA İLE FİNANSAL OLMAYAN BİLGİLERİN ÖLÇÜM, KAYIT VE RAPORLAMA DÖNÜŞÜMÜ

NEW HORIZONS IN SUSTAINABILITY ACCOUNTING: THE TRANSFORMATION OF MEASURING, RECORDING, AND REPORTING NON-FINANCIAL INFORMATION THROUGH NATURAL LANGUAGE PROCESSING AND ARTIFICIAL INTELLIGENCE

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ÖZET

Kurumsal değerin önemli bir bölümünün artık maddi olmayan varlıklardan kaynaklanması, geleneksel finansal raporlama sisteminin işletmelerin ekonomik, sosyal ve çevresel (üçlü sorumluluk) performansını yansıtmada yetersiz kalmasına neden olmaktadır. Bu durum, muhasebenin görev alanını genişleterek işletme faaliyetlerinin çevresel ve toplumsal etkilerini izleyen, ölçen ve raporlayan Sürdürülebilirlik Muhasebesi (SM) kavramını ortaya çıkarmıştır. Sürdürülebilirlik Muhasebesinin temel zorluğu, hem nicel (emisyonlar, enerji tüketimi, kaynak kullanımı) hem de nitel (stratejik açıklamalar, risk yönetimi, dayanıklılık politikaları) finansal olmayan verilerin güvenilir, tutarlı ve karşılaştırılabilir biçimde yönetilmesi gerekliliğidir.

Bu karmaşık yapının etkin biçimde yönetilebilmesi, bilgi teknolojilerinin ve özellikle Yapay Zekâ (YZ) ile Doğal Dil İşleme (NLP) sistemlerinin entegrasyonunu zorunlu kılmaktadır. Yapay Zeka destekli modeller ve NLP teknikleri, sürdürülebilirlik raporlarında yer alan metin temelli verileri analiz ederek şirketlerin çevresel ve sosyal performansına dair ölçülebilir göstergeler üretmekte, “yeşil badana” (greenwashing) risklerini azaltmakta ve raporların karşılaştırılabilirliğini artırmaktadır. Bu sayede muhasebe, yalnızca finansal sonuçların değil, aynı zamanda işletmelerin toplum ve çevre üzerindeki etkilerinin de güvenilir biçimde sunulduğu stratejik bir bilgi sistemine dönüşmektedir.

Uluslararası alanda Uluslararası Sürdürülebilirlik Standartları Kurulu (ISSB)’nin kurulması ve dijital raporlama altyapısının vurgulanması, finansal olmayan bilginin dijitalleştiği yeni bir dönemi temsil etmektedir. Türkiye bağlamında yapılan çalışmalar da Borsa İstanbul şirketlerinde sürdürülebilirlik açıklamalarının finansal performansla pozitif ilişkisini doğrulamaktadır. Bu çerçevede muhasebe meslek mensuplarının sürdürülebilirlik okuryazarlığını geliştirerek dijitalleşmeye uyum sağlaması, hem Sürdürülebilirlik Muhasebesinin yeni misyonunun başarısı hem de sürdürülebilir kalkınma hedeflerine ulaşılması açısından kritik önemdedir.

Anahtar Kelimeler: Sürdürülebilirlik Muhasebesi, Finansal Olmayan Bilgiler, Yapay Zeka, Doğal Dil İşleme (NLP)

ABSTRACT

A significant portion of corporate value today stems from intangible assets, revealing the inadequacy of the traditional financial reporting system in reflecting firms' economic, social, and environmental (triple-bottom-line) performance. This limitation has expanded the scope of accounting and led to the emergence of Sustainability Accounting (SA) — a field that monitors, measures, and reports the environmental and social impacts of business activities. The primary challenge of Sustainability Accounting lies in managing both quantitative (e.g., emissions, energy consumption, resource use) and qualitative (e.g., strategic disclosures, risk management, resilience policies) non-financial information in a reliable, consistent, and comparable manner.

Effectively managing this complexity necessitates the integration of information technologies, particularly Artificial Intelligence (AI) and Natural Language Processing (NLP) systems. AI-driven models and NLP techniques can analyze text-based sustainability disclosures to generate measurable indicators of companies' environmental and social performance, mitigate the risks of greenwashing, and enhance the comparability and credibility of reports. Consequently, accounting is evolving into a strategic information system that not only presents financial results but also provides transparent and verifiable insights into organizations' societal and environmental impacts.

At the global level, the establishment of the International Sustainability Standards Board (ISSB) and the emphasis on digital reporting infrastructures signify the emergence of a new era in the digitalization of non-financial information. Empirical studies conducted in the Turkish context similarly confirm a positive relationship between sustainability disclosures and financial performance among Borsa İstanbul (BIST) companies. In this regard, enhancing the sustainability literacy of accounting professionals and their adaptation to digital transformation are critical for the success of Sustainability Accounting's new mission and for achieving the Sustainable Development Goals (SDGs).

Keywords: Sustainability Accounting, Non-Financial Information, Artificial Intelligence, Natural Language Processing (NLP)

**SAĞLIK KURUMLARINDA ÖRGÜTSEL DESTEK VE PSİKOLOJİK GÜVENLİK
İLİŞKİSİ: LİTERATÜR TABANLI BİR DEĞERLENDİRME
THE RELATIONSHIP BETWEEN PERCEIVED ORGANIZATIONAL SUPPORT
AND PSYCHOLOGICAL SAFETY IN HEALTHCARE INSTITUTIONS:
A LITERATURE-BASED EVALUATION**

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ÖZET

Sağlık kurumları, insan odaklı hizmet yapıları nedeniyle çalışanların duygusal ve psikolojik durumlarından doğrudan etkilenen kurumlardır. Bu bağlamda, çalışanların kurumlarından algıladıkları örgütsel destek düzeyi, yalnızca iş tatmini ve bağlılık gibi tutumları değil, aynı zamanda psikolojik güvenlik algılarını da önemli ölçüde şekillendirmektedir. Bu çalışmanın amacı, sağlık kurumlarında örgütsel destek ve psikolojik güvenlik kavramları arasındaki ilişkiyi mevcut literatür ışığında incelemektir. Çalışmada, 2019–2024 yılları arasında Web of Science, Scopus ve TR Dizin veri tabanlarında yayımlanmış ulusal ve uluslararası 12 araştırma incelenmiştir. Bulgular, örgütsel desteğin çalışanların ekip içi güven, açık iletişim, hata paylaşımı ve yenilikçi davranışlarını olumlu yönde etkilediğini göstermektedir. Ayrıca, lider desteği ve adil yönetim uygulamaları örgütsel desteğin psikolojik güvenlik üzerindeki etkisini güçlendiren temel faktörler olarak öne çıkmaktadır. Sonuç olarak, yöneticilerin destekleyici liderlik tarzlarını benimsemeleri, sağlık kurumlarında güven temelli bir örgüt kültürünün gelişimine katkı sağlamaktadır.

Anahtar Kelimeler: Örgütsel destek, psikolojik güvenlik, sağlık kurumları, örgütsel davranış, liderlik

ABSTRACT

Healthcare institutions are directly influenced by the emotional and psychological states of their employees due to their human-centered service structure. In this context, the level of perceived organizational support significantly shapes not only employees' job satisfaction and commitment but also their sense of psychological safety. The purpose of this study is to examine the relationship between perceived organizational support and psychological safety in healthcare settings based on existing literature. A total of 12 studies published between 2019 and 2024 in Web of Science, Scopus, and TR Dizin databases were reviewed. The findings indicate that higher levels of perceived organizational support positively contribute to team trust, open communication, error sharing, and innovative behaviors. Furthermore, leadership support and fair management practices are key factors that strengthen the impact of organizational support on psychological safety. Consequently, adopting supportive leadership styles contributes to the development of a trust-based organizational culture in healthcare institutions.

Keywords: Organizational support, psychological safety, healthcare institutions, organizational behavior, leadership

ERKEN ÇOCUKLUK DÖNEMİNDE GÖRÜLEN UYUM VE DAVRANIŞ PROBLEMLERİYLE İLGİLİ LİSANSÜSTÜ TEZLERİN İNCELENMESİ

AN EXAMINATION OF GRADUATE THESES ON ADAPTATION AND BEHAVIORAL
PROBLEMS IN EARLY CHILDHOOD

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ÖZET

Erken çocukluk dönemi, bireyin gelişim temellerinin atıldığı, çok yönlü destek gerektiren kritik bir gelişim evresidir. Bu dönemde verilen eğitim, çocuğun fiziksel, motor, bilişsel, sosyal-duygusal ve dil gelişim alanlarını bütüncül biçimde desteklemeyi amaçlar. Çocuk bu süreçte çevresine uyum sağlama, sosyal kuralları öğrenme ve duygularını tanıma gibi temel becerileri edinirken, çeşitli uyum ve davranış problemleri yaşayabilmektedir. Erken çocukluk döneminde ortaya çıkan uyum ve davranış problemlerine yönelik yapılan araştırmalar hem çocukların gelişimsel süreçlerinin anlaşılması hem de etkili eğitim yaklaşımlarının oluşturulması açısından önem taşımaktadır. Bu bağlamda araştırmanın amacı, Türkiye’de erken çocukluk döneminde görülen uyum ve davranış problemleri alanında 2020–2025 yılları arasında yapılmış yüksek lisans ve doktora tezlerinin incelenmesidir. Çalışmada, alanyazındaki lisansüstü tezlerin sistematik biçimde değerlendirilmesiyle, bu alandaki eğilimlerin, yoğunlaşan temaların ve mevcut boşlukların belirlenmesi hedeflenmiştir. Bu çalışma nitel araştırma deseniyle yürütülmüş ve verilerin incelenmesinde doküman analizi yöntemi kullanılmıştır. Veriler, Yükseköğretim Kurulu (YÖK) Tez Merkezi’nde “davranış problemi”, “problem davranış” ve “istenmeyen davranış” anahtar kelimeleriyle yapılan tarama sonucunda elde edilmiştir. İnceleme sonucunda toplam 35 tez tespit edilmiştir. Bu tezler; yayımlandıkları yıl, yöntem, üniversite ve enstitü, örneklem türü, yaş grubu ve anabilim dalı değişkenlerine göre analiz edilmiştir. Araştırma bulgularına göre, tezlerin 30’unda nicel 3’ünde nitel ve 2’sinde karma araştırma yöntemi kullanılmıştır. Tezlerin, 31’i yüksek lisans, 3’ü doktora tezidir. Araştırmadan elde edilen bulgular tablolar halinde sunulmuş ve ilgili değerlendirmeler sonuç bölümünde ayrıntılı biçimde ele alınmıştır.

Anahtar Kelimeler: Davranış Problemi, Erken Çocukluk Dönemi, Lisansüstü Tez, Türkiye, Doküman Analizi

ABSTRACT

Early childhood is a critical developmental phase in which the foundations of an individual's development are laid and which requires multifaceted support. Education provided during this period aims to holistically support the child's physical, motor, cognitive, social-emotional, and language developmental domains. While children acquire fundamental skills such as adapting to their environment, learning social rules, and recognizing their emotions during this process, they may experience various adjustment and behavioral problems. Research conducted on adjustment and behavioral problems that emerge in early childhood is important both for understanding children's developmental processes and for establishing effective educational approaches. In this context, the purpose of this study is to examine master's and doctoral theses conducted in Turkey on adjustment and behavioral problems observed in early childhood between 2020 and 2025. The study aims to identify trends, concentrated themes, and existing gaps in this field through a systematic evaluation of graduate theses in the literature. This study was conducted using a qualitative research design, and document analysis method was used for data examination. Data were obtained as a result of a search conducted in the Council of Higher Education (YÖK) Thesis Center using the keywords "behavioral problem," "problem behavior," and "undesirable behavior." As a result of the examination, a total of 35 theses were identified. These theses were analyzed according to the variables of year of publication, method, university and institute, sample type, age group, and department. According to the research findings, quantitative research methods were used in 30 of the theses, qualitative in 3, and mixed research methods in 2. Of the theses, 31 are master's theses and 3 are doctoral dissertations. The findings obtained from the research are presented in tables, and relevant evaluations are discussed in detail in the conclusion section.

Keywords: Behavioral Problem, Early Childhood, Graduate Thesis, Turkey, Document Analysis

NOSTALGIA NOSTALJİ PAZARLAMASI VE GEÇMİŞİN TÜKETİMİ MARKETING AND THE CONSUMPTION OF THE PAST

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Özet

Geride bıraktığımız yıllar da ticari pazarlarda meydana gelen dengesizlik ve rekabet ortamının güçlenmesinden kaynaklı geçmişin tüketim materyali olarak sunulması marka yönetimi ve tüketiciyle duygusal bir marka bağı kurulması açısından oldukça önemli bir stratejik yaklaşım haline gelmiştir. Bu pazarlama stratejisi, sadece geçmişte ki popüler kültür öğelerinin pazarlara sunulması olarak görülmeyp, tüketicide ki geçmişe özlem duygusundan faydalanarak bireyi tüketime hazır hale getirmektedir. Bu bildiri çalışmasının asıl amacı, nostaljik tüketim öğelerinin, bireyin üzerinde yarattığı psikolojik ve iletişim bilimi bağlamında ki işlevini analiz ederek, nostalji pazarlamasının ve geçmişin tüketiminin stratejik bir yaklaşım olarak ele alınması ve eleştirel olarak incelenmesidir.

Edward T. Hall'ın Kültürel iletişim bağlamında ele aldığı kavramlardan başlanarak, noltaljik kültürel öğelerin nasıl güncel ve yeni bir tüketim nesnesi olarak tüketiciye sunulduğu ele alınacaktır. Geçmiş dönemlerin kültürel nesneleri, bireyin aklında yüksek bir bağlam yaratarak, ürüne ait uzun bir öykü anlatılmadan da güçlü duygular uyandırılmaktadır. Bu yaklaşıma ek olarak Frankfurt Okulu'nun "kültür endüstrisi" yaklaşımı ele alınarak, nostaljik pazarlamanın geçmişin öğelerini akıllıca sunması ve sadece pozitif yönleriyle tüketicinin önüne sürmesine dikkat çekilecektir. Nostaljik tüketim öğeleriyle bireyin nasıl bir duygusal bağ kurduğunu ve bunu ne şekilde kullandığını da belirli kuşaklar bağlamında nasıl yeniden anlamlandırarak kullandığını da açıklanacaktır. Çalışmanın daha açıklayıcı olabilmesi adına örnek bir markanın nostalji pazarlaması ele alınarak, bu ürünü pazara sunduğu zaman nasıl duygular uyandırdığı ve bunu asıl kullandığı da anlatılmaya çalışılacaktır. Geçmişin tüketimi reklamcılık alanı ve markalar için sadece bir pazarlama stratejisi değil, tüketime meyilli modern toplumun geçmiş ile kurduğu duygusal bağın gün yüzüne çıkmasıdır. Çalışma, örgütlerin yalnız kapitalist sistem odaklı ilerleyerek tüketicinin geçmişe özlem duygusunu sömürmek odaklı olması yerine, geçmişin kültürel öğelerine saygılı bir iletişim stratejisi ile ilerlemeleri konusunda tavsiyeler verilecektir. Sonuç kısmında geçmişin tüketimi ve nostaljik pazarlamanın yalnızca bir meta olarak değil, örnek alınmış bir zaman dilimi ve duygusal bağlılığı da pazarladığı, tümevarımına yer verilecektir.

Anahtar Kelimeler: Nostalji, tüketim, nostalji pazarlaması, kültür, kültür endüstrisi, nostaljik tüketim.

Abstract

In recent years, the instability and intensifying competition within commercial markets have made the presentation of the past as a consumption material a crucial strategic approach for brand management and establishing an emotional connection with consumers. This marketing strategy is not merely seen as the reintroduction of past popular culture elements but rather capitalizes on the consumer's feeling of longing for the past, thereby making the individual ready for consumption. The main purpose of this conference paper is to analyze the

psychological and communication science functions of nostalgic consumption elements on the individual, and to strategically and critically examine nostalgia marketing and the consumption of the past.

The study will begin by addressing concepts from Edward T. Hall's perspective on Cultural Communication, exploring how nostalgic cultural elements are presented to consumers as current and new consumption objects. Cultural objects from past eras evoke strong emotions in the individual by creating a high context in their minds, without the need for telling a long story associated with the product. In addition to this approach, the Frankfurt School's "culture industry" critique will be addressed, highlighting how nostalgia marketing cleverly presents the elements of the past and often submits them to the consumer focusing only on their positive aspects.

The paper will also explain how individuals build an emotional connection with nostalgic consumption elements, and how organizations use and reinterpret this connection within the context of specific generations. To further clarify the study, an example of a brand's nostalgia marketing campaign will be examined, detailing the emotions it evokes and how the brand utilizes them when introducing this product to the market. The consumption of the past is not merely a marketing strategy for advertising and brands but the surfacing of the emotional bond that the consumption-prone modern society holds with its history. The study will conclude with recommendations for organizations to move forward with a culturally respectful communication strategy, rather than solely focusing on the capitalist system to exploit the consumer's longing for the past. The conclusion will inductively argue that the consumption of the past and nostalgic marketing sell not only a commodity but also a borrowed time frame and emotional attachment.

Keywords: Nostalgia, consumption, nostalgia marketing, culture, culture industry, nostalgic consumption.

EFL LEARNERS' FOREIGN LANGUAGE CLASSROOM ANXIETY: DOES GENDER MATTER?

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ABSTRACT

The last thirty years have seen a significant increase in the amount of research on anxiety and language learning, particularly in the areas of second and foreign language (L2) acquisition and pedagogy. The rationale for this growing interest might be the realization that anxiety related to L2 learning is a key variable in forming teaching theories and strategies related to L2 acquisition, as well as in explaining individual differences in L2 acquisition. There are contradictory results from FLS research regarding the variables that might influence anxiety. The complicated nature of the concept, which is predicted by several variables, such as gender, may contribute to this extant literature. To this end, this study aims to contribute to the existing body of knowledge by exploring the foreign language classroom anxiety (FLCA) levels of Turkish undergraduate learners who learn English as a foreign language and revealing the possible gender differences in this regard. Sampling 287 freshman students, enrolled in the Faculty of Engineering, this research employed a cross-sectional survey design to achieve its research goals. Overall, the results gleaned from this study indicated that the participants exhibited a moderate level of anxiety. Notably, data revealed that communication apprehension garnered the highest mean score, implying that participants may experience heightened anxiety or discomfort when engaging in communication activities in their L2 classrooms. Furthermore, there was no statistically significant differences in anxiety scores between male and female participants, suggesting that FLCA was unaffected by gender. Based on these findings, instructors are advised to create a stress-free classroom atmosphere to ease that undesirable feeling of students.

Keywords: Foreign language classroom anxiety, EFL learners, gender, quantitative research

**KADIN ERKEK ÜCRET EŞİTSİZLİĞİ BEKLENTİLERİ: KOCAELİ
ÜNİVERSİTESİ ÖĞRENCİLERİ ÖRNEĞİ¹**
EXPECTATIONS OF WAGE INEQUALITY BETWEEN MEN AND WOMEN: THE
KOCAELI UNIVERSITY STUDENTS SAMPLE

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ÖZET

Bu çalışma, işgücü piyasasında temel bir sorun olan cinsiyete dayalı ücret eşitsizliğini, Kocaeli Üniversitesi öğrencileri örneği üzerinden incelemektedir. TÜİK verilerine göre insan sermayesine en çok yatırım yapan yükseköğretim mezunlarında %17,4 oranında görülen ücret farkı, geleceğin işgücü adaylarının beklentilerini analiz etmeyi önemli hale getirmiştir. Araştırmanın temel amacı, öğrencilerin eşitsizlik algılarını ve mezuniyet sonrası ilk işlerinden bekledikleri aylık net ücretleri cinsiyet değişkeni açısından analiz etmektir.

Araştırma kapsamında 501 kadın ve 503 erkek olmak üzere toplam 1004 öğrenciye anket uygulanmış ve veriler SPSS programı ile analiz edilmiştir. Yapılan analizler sonucunda, kadın öğrencilerin ücret eşitsizliği konusundaki farkındalıklarının ve tutum puanlarının erkeklere göre istatistiksel olarak anlamlı düzeyde daha yüksek olduğu görülmüştür. Ancak bu yüksek farkındalık, kadınların kendi maaş beklentilerini belirlerken aleyhte bir durum yaratmaktadır. Çalışma bulgularına göre, "2 asgari ücret ve üzeri" beklentisine sahip olanların %54,1'i erkek iken, en düşük ücret kategorisini seçenlerin %62,5'ini kadınlar oluşturmaktadır.

Sonuç olarak çalışma, kadın öğrencilerin yapısal eşitsizliğin farkında olduklarını ancak bu durumun onların kariyer başlangıç beklentilerini kısıtlayan bir öngörü olarak işlediğini ortaya koymaktadır. Erkek öğrenciler ise sorunu daha bireysel algılamakta ve daha yüksek maddi beklentiler taşımaktadır. Cinsiyete dayalı ücret farkının temelinde yatan ilk maaş eşitsizliğinin katlanarak artan bir dezavantaja dönüşmemesi için, üniversite eğitim dönemi bu döngüyü kırmak adına en stratejik zaman dilimi olarak öne çıkmaktadır. Bu tezatlığın giderilmesi ve "ilk maaş" eşitsizliğinin önlenmesi adına, üniversitelerde pazarlık gücünü artıracak mentorluk ve eğitim programlarının uygulanması önerilmektedir.

Anahtar Kelimeler: Eşitsizlik, Cinsiyet Ayrımcılığı, Üniversite Öğrencileri, Beklentiler

ABSTRACT

This study examines gender based wage inequality, one of the fundamental issues in the labor market, through the case of students at Kocaeli University. According to TÜİK data, the wage gap among higher education graduates, who invest the most in human capital, is 17.4%, which makes it important to analyze the expectations of future labor market participants. The main

¹ Bu çalışma TÜBİTAK 2209-A 1919B012415024 numaralı proje kapsamında yapılan Kadın Erkek Ücret Eşitsizliği Beklentileri: Kocaeli Üniversitesi Öğrencileri Örneği isimli çalışmadan türetilmiştir. Yazarlar desteğinden dolayı TÜBİTAK'a teşekkür eder.

purpose of the research is to analyze students' perceptions of inequality and the monthly net salary they expect from their first job after graduation in terms of gender.

Within the scope of the study, a survey was administered to a total of 1,004 students, 501 women and 503 men, and the data were analyzed using the SPSS program. The findings reveal that female students have statistically significantly higher levels of awareness and attitude scores regarding wage inequality compared to male students. However, this heightened awareness creates a disadvantage for women when determining their own salary expectations. According to the results, 54.1% of those who expect "two minimum wages or more" are men, while 62.5% of those who select the lowest wage category are women.

In conclusion, the study shows that female students are aware of structural inequality, yet this awareness operates as a limiting expectation affecting their career starting points. Male students, on the other hand, perceive the issue more individually and have higher financial expectations. To prevent the initial salary inequality underlying the gender wage gap from evolving into a progressively widening disadvantage, the university education period emerges as a strategically critical phase to break this cycle. To address this contradiction and prevent initial salary inequality, it is recommended that universities implement mentorship and training programs aimed at strengthening students' negotiation abilities.

Keywords: Inequality, Gender Discrimination, University Students, Expectations

YENİDEN İŞLEVLENDİRİLMİŞ GAZİANTEP EVLERİNDE İÇ MEKANLARIN SÜRDÜRÜLEBİLİR TASARIM İLKELERİ AÇISINDAN İNCELENMESİ

AN ANALYSIS OF THE INTERIOR SPACES OF THE RENOVATED GAZİANTEP HOUSES IN TERMS OF SUSTAINABLE DESIGN PRINCIPLES

F. Büşra Kızıldağ

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ÖZET

Teknolojik gelişmeler yapı endüstrisinde yaşam standartlarını yükseltirken, artan enerji ve su tüketimi ile yükselen sera gazı emisyonları gibi çevresel etkiler, sürdürülebilirlik açısından ciddi tehditler oluşturmaktadır. Bu durum enerji verimliliğini artırmayı, çevresel tehditleri en aza indirmeyi ve doğal kaynakları korumayı hedefleyen sürdürülebilir tasarım anlayışını mimarlık alanında öncelikli hale getirmiştir.

Günümüzde sürdürülebilir kaynaklara duyulan ihtiyaç doğrultusunda, ekonomik verimliliği gözeterek yaklaşımlar, mevcut mimarlık mirasının korunması ve yeniden işlevlendirilmesine odaklanmaktadır. Bu yaklaşım yalnızca yapıların fiziksel olarak yeniden kullanımını sağlamakla kalmayıp, çevresel duyarlılığı, iklimsel sürdürülebilirliği ve kültürel sürekliliği de birlikte ele almayı amaçlamaktadır.

Bu çalışmada, Gaziantep'in geleneksel konut kültürünü yansıtan ve günümüzde restoran olarak işlevlendirilen yapılar, iç mekân tasarımı bağlamında sürdürülebilir tasarım ilkeleri açısından incelenmiştir. Çalışmada, yeniden işlevlendirme, iç mekân tasarımı ve sürdürülebilirlik kavramları ile Gaziantep'in tarihi ve geleneksel konut yapıları literatür taramalarıyla açıklanmıştır. Seçilen üç örnek yapı, saha çalışmaları ve yerinde gözlemler ile karşılaştırmalı analiz yöntemi kullanılarak, sosyal, çevresel ve ekonomik sürdürülebilirlik kriterleri doğrultusunda değerlendirilmiştir. Bu çalışma, geleneksel Gaziantep konutlarının yeniden işlevlendirilmesinde sürdürülebilir tasarım ilkelerinin uygulanabilirliğine ilişkin bir değerlendirme sunarak, mimarlık ve koruma pratiğine katkı sağlamayı hedeflemektedir.

Anahtar Kelimeler: Yeniden İşlevlendirme, Gaziantep Evleri, İç Mekân Tasarımı, Sürdürülebilirlik

ABSTRACT

Technological advancements in the construction industry have raised living standards, but environmental impacts such as increased energy and water consumption and rising greenhouse gas emissions pose serious threats to sustainability. This situation has made sustainable design, which aims to increase energy efficiency, minimize environmental impacts, and conserve natural resources, a priority in the field of architecture.

In line with the need for sustainable resources today, approaches that consider economic efficiency focus on preserving and repurposing the existing architectural heritage. This approach aims not only to ensure the physical reuse of buildings but also to address environmental sensitivity, climatic sustainability, and cultural continuity.

In this study, buildings that reflect Gaziantep's traditional housing culture and are currently used as restaurants were examined in terms of sustainable design principles in the context of interior design. The concepts of repurposing, interior design, and sustainability, along with Gaziantep's historical and traditional residential buildings, were explained through literature reviews. Three selected example structures were evaluated according to social, environmental, and economic sustainability criteria using a comparative analysis method based on field studies and on-site observations. This study aims to contribute to architectural and conservation practices by providing an assessment of the applicability of sustainable design principles in the repurposing of traditional Gaziantep residences.

Keywords: Repurposing, Gaziantep Houses, Interior Design, Sustainability.

**EBOLA VİRÜSÜNÜN HIZLI VE HASSAS TESPİTİ İÇİN LABEL-FREE
ELEKTROKİMYASAL DNA BİYOSENSÖR**
RAPID AND SENSITIVE DETECTION OF EBOLA VIRUS USING A LABEL-FREE
ELECTROCHEMICAL DNA BIOSENSOR

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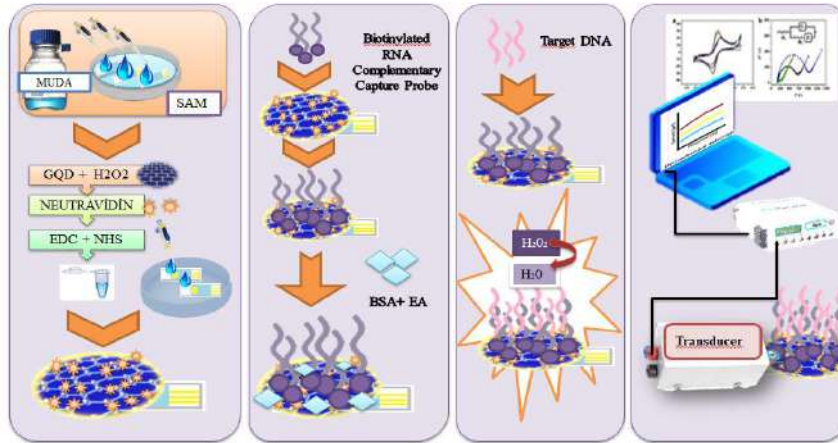
ÖZET

Ebola virüs, 1976 yılında tanımlanan tek zincirli RNA yapısında, yüksek bulaşıcılığı ve biyoterörizm potansiyeli nedeniyle küresel sağlık tehdidi oluşturan ölümcül bir patojendir. Ebola virüsünü tespit etmek için, altın standart hücre kültürü tabanlı merkezi laboratuvar testleri (ELISA, PCR ve spektrofotometri) kullanılmaktadır. Bu yöntemler yüksek kontaminasyon riski taşımasının yanı sıra özel reaktifler, eğitimli personeli olan tesisler ve iki ila on gün arasında değişen bir zaman dilimi gerektirir; bu da düşük erişilebilirliğe ve sonuçların gecikmesine yol açar. Biyosensör teknolojisinin kullanımı; yüksek hassasiyeti, hızı ve kullanım kolaylığı nedeniyle basit ama güvenilir hasta başı (point-of-care) analitik araçlardır.

Bu çalışmada, Ebola virüsünün tespiti için enzimatik olmayan GQD'la modifiye edilmiş uygun maliyetli serigrafı baskılı altın elektrot (SPGE) kullanılmıştır. SPGE yüzeyine biyotinlenmiş bir RNA tamamlayıcı yakalama probu (ssDNA) immobilize edilmiş (sabitlenmiş) ve tek iplikli hedef oligonükleotitler (ssDNA) ile hibridize edilmiştir. GQD tabanlı elektrokimyasal DNA sensörünün seçiciliği, özgüllüğü ve kararlılığı ticari biyosensör sistemi (metrohm dropsens) ile amperometrik ölçümler kullanılarak hedef ssDNA dizilerinin (ebola virüs) ayırt edilmesi sağlanmıştır.

Ebola virüs tespiti, GQD sensör çipi üzerindeki immobilize yakalama DNA yüzey probu ile 10^{-5} M hedef Ebola DNA konsantrasyonu hibritleşmesi sonucu oluşan sinyalin tespitiyle yapılarak yüksek özgüllük gösterdiği görülmüştür. Tüm basamaklar AFM ve FTIR karakterizasyon yöntemleri ile analiz edilmiştir. AFM karakterizasyonunda, $1 \times 1 \mu\text{m}$ tarama alanında elde edilen 3D yüzey topografisi görüntülerinde immobilizasyon sonrası ve hibritleşme sonrası yüzey yükseklikleri sırasıyla 8.3 nm ve 12.5 nm olarak bulunmuştur. Yüzey yüksekliğindeki kademeli artış, DNA sensörünün hedef tespitini başarıyla gerçekleştirdiğini doğrulamıştır. Sonuç olarak, bu biyosensör tespit sistemi taşınabilir elektrokimyasal cihazlara entegrasyon için aday olup, patojen tespiti için hızlı, yüksek duyarlılığa ve özgüllüğe sahip tanı testleri sunmaktadır.

Anahtar Kelimeler: DNA Biyosensör; Ebola virus; GQD; Hızlı Tanı, Label-free DNA Biyosensör



Şekil 1: Ebola virüsü tespiti için elektrokimyasal DNA biyosensörünün şematik gösterimi

ABSTRACT

Ebola virus is a single-stranded RNA pathogen identified in 1976, and due to its high transmissibility and bioterrorism potential, it represents a global public health threat. To detect the Ebola virus, gold-standard central laboratory tests based on cell culture (ELISA, PCR, and spectrophotometry) are used. In addition to carrying a high risk of contamination, these methods require specialized reagents, facilities with trained personnel, and a time frame ranging from two to ten days, which leads to low accessibility and delays in obtaining results. The use of biosensor technology provides simple yet reliable point-of-care analytical tools due to their high sensitivity, speed, and ease of use.

In this study, a cost-effective screen-printed gold electrode (SPGE) modified with GQDs was used for the detection of the Ebola virus in a non-enzymatic sensing system. A biotinylated RNA complementary capture probe (ssDNA) was immobilized onto the SPGE surface and hybridized with single-stranded target oligonucleotides (ssDNA). The selectivity, specificity, and stability of the GQD-based electrochemical DNA sensor were evaluated using amperometric measurements with a commercial biosensor system (Metrohm Dropsens), enabling the discrimination of the target ssDNA sequences (Ebola virus).

Quantitative detection of Ebola with the DNA sensor was investigated with the high specificity shown by detecting the signal resulting from the hybridization of 10^{-5} M target Ebola DNA concentration with the immobilized capture DNA surface probe on the GQD sensor chip. The developed DNA biosensor exhibited high specificity. All steps were analyzed using AFM (Atomic Force Microscopy) and FTIR (Fourier-Transform Infrared Spectroscopy) characterization techniques. In AFM characterization, 3D surface topography images obtained over a $1 \times 1 \mu\text{m}$ scanning area revealed surface heights of 8.3 nm after immobilization and 12.5 nm after hybridization, respectively. The gradual increase in surface height confirmed that the DNA sensor successfully achieved target detection. Consequently, this biosensing detection system is a strong candidate for integration into portable electrochemical devices, providing rapid, highly sensitive, and highly specific diagnostic tests for pathogen detection.

Keywords: DNA Biosensör; Ebola virus; GQD; Fast Detect, Label-free DNA Biosensor

SECONDARY VOLATILE METABOLITE COMPOSITION OF *Polygonum bistorta*
COLLECTED FROM RİZE

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Abstract

Polygonaceae is a large flowering plant family of approximately 48 genera and 1200 species with a worldwide distribution. Bistort or snakeroot, or *Polygonum bistorta* L. (Polygonaceae), is a circumboreal species that is widely distributed throughout Europe, from Eastern Portugal to the Pyrenees, the Alps, and the Carpathians. It is also widely distributed throughout Russia, reaching its easternmost stations in the Lake Baikal region and China. There have also been reports of this plant species in North America. The first comprehensive study of the genus *Polygonum* in Türkiye was done by Boissier in 1879 who reported 45 species. Currently, it is represented in the flora of Türkiye by 108 taxa under six genera.

P. bistorta has been known for the anti-inflammatory and astringent properties of its rhizomes, and has long been employed in traditional Chinese medicine in the treatment of suppurative dermatitis, haemorrhoids, and haematemesis; this activity was attributed to the presence of several bioactive compounds such as flavonoids, phenolic acids, tannins, and triterpenoids. Its aerial parts, especially rich in flavones, have been used as sources for pharmacopoeial drugs as well.

Aerial parts of *Polygonum bistorta* collected from Rize was analyzed based on its secondary volatile metabolite composition. It contained 12.36 % Heneicosane, 9.08 % Heptadecane, 8.15 % Hexadecane, 7.41 % Drimenol and 5.82 % Phytone, components displaying important biological activities.

Key words: *Polygonum bistorta*, chemical composition, GC-MS

SECONDARY VOLATILE METABOLITE COMPOSITION OF DIFFERENT
PLANT PARTS OF *Rhodendron luteum*

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Abstract

Europe, North America, Southeast Asia, China, Japan, and Australia are home to more than 850 species of *Rhododendron* (Ericaceae). Native to Eastern Europe (the Caucasus region), northeastern Lithuania, and Poland, *Rhododendron luteum* Sweet (Yellow-flowered *Rhododendron*) is widely cultivated as an ornamental plant and in floriculture due to its winter tolerance. It can be found in the north of Türkiye, especially along the Eastern Black Sea coast, in the North Anatolian Mountains, in a few places south of the Marmara Sea, and in the southeast Taurus Mountains. Due to the presence of polyphenolic compounds, carotenoids, and antioxidant properties, the flowers of *R. luteum* exhibit anti-inflammatory, antiviral, antibacterial, anticancer, anti-diabetic, immunomodulatory, cardioprotective, and hepatoprotective effects. In tests with extracts of its leaves and flowers, it was shown that the extract showed specific cytotoxicity against colon and liver cancer cells relative to normal fibroblast cells.

Stem, leaf and flower parts of *Rh. Luteum* were analysed using GC/MS regarding their secondary volatile metabolite content. Stem parts of *Rhododendron luteum* contained 12.47 % α -Zinbergene, 9.36 % α -trans-Bergamotene, 6.53 % δ -Cadinene, 5.66 % Germacrene D, 5.50 % β -Bourbenene and 5.36 % Aromadendrene. In leaf parts, β -Caryophyllene (20.76 %), Seychellene (16.40 %) and Phytol (14.65 %) were detected in high amounts. High amounts of β -caryophyllene (31.83 %), Seychellene (21.24 %), α -Humulene (4.67 %), β -Elemene (3.22 %), Caryophyllene oxide and Hexadecane were detected in flower parts of *Rhododendron luteum*. All investigated plant parts contained components displaying important biological activities.

Key words: *Rhododendron luteum*, chemical composition, GC-MS

**SYNTHESIS AND CHARACTERIZATION OF NOVEL METACRYLATE
COPOLYMER
(YENİ METAKRİLAT KOPOLİMERİNİN SENTEZİ VE KARAKTERİZASYONU)**

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Abstract

Methacrylate polymers and copolymers are among the most important commercial polymers with a wide range of applications. They are used in the production of many industrial materials such as shatterproof glass, lighting fixtures, and bathtubs. Acrylic monomers can be copolymerized with other monomers to produce industrial materials with the properties required by industry, particularly due to the different functional groups within their structures. In this study, firstly 2-(bis(cyanomethyl)amino)-2-oxoethyl methacrylate (CMA2OEM) monomer was pre-synthesized and characterized. Then, novel copolymer (poly(CMA2OEM-co-DAAM)), synthesized by copolymerization reaction of 2-(bis(cyanomethyl)amino)-2-oxoethyl methacrylate (CMA2OEM) and diacetoneacrylamide (DAAM) monomers. The copolymer was synthesized for via free radical polymerization reaction. The structure of the synthesized poly(CMA2OEM-co-DAAM) copolymer was characterized by FT-IR and ¹H-NMR spectroscopic methods. The results obtained from spectroscopic techniques were in agreement with the literature.

Keywords: 2-(bis(cyanomethyl)amino)-2-oxoethyl methacrylate (CMA2OEM), diacetoneacrylamide (DAAM), Copolymer, Synthesis, Characterization.

CHARACTERIZATION OF POISSON-AGUF DISTRIBUTION WITH APPLICATION

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ABSTRACT

This research introduces a novel one-parameter discrete probability distribution termed the Poisson-AGUF Distribution (PAFD). By compounding the Poisson and AGUF distributions, the PAFD is designed to accommodate a broad spectrum of dispersion characteristics, offering a more flexible, and robust tool for count data fitting and modeling. The PAFD statistical properties, moments, generating functions, and maximization technique of the likelihood of PAFD to estimate its parameter is performed. A simulation to determine the stability of the PAFD was performed and four real life data sets was fitted to the PAFD and compared to other five competing discrete distributions namely Poisson, Negative Binomial, Poisson-Shanker Distribution, Poisson-Janardan Distribution, and Poisson-Lindley Distribution. The results showed that the MTL is a stable estimation technique and the PAFD was found to be the overall best fitted distribution based on Akaike Information Criteria (AIC), Bayesian Information Criteria (BIC), and χ^2 -Goodness-of-fit test (χ^2 -GOFT), the PAFD was found to be the overall best fitted distribution with the lowest AIC and BIC, and largest χ^2 -GOFT p-value across all the four data sets used in the study. The results affirm that the Poisson-AGUF Distribution offers a superior alternative for analyzing count data with varying dispersion levels.

Keywords: Poisson-AGUF distribution, Over-dispersion, Under-dispersion, Equi-dispersion, Maximization of likelihood, Simulation

LABEL-FREE ELECTROCHEMICAL DETECTION OF *HELICOBACTER PYLORI* USING CARBON DOT-FUNCTIONALIZED ELECTRODES

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ABSTRACT

Helicobacter pylori is a gram-negative, acidophilic bacterium recognized as an etiological agent of various gastrointestinal disorders. Defined by the International Agency for Research on Cancer (IARC) as a Group 1 carcinogen, it remains a major public health concern. Globally, its infection prevalence exceeds 50%, varying regionally. Infected individuals frequently develop peptic ulcer, chronic gastritis, and gastric cancer, which is the third leading cause of cancer-related mortality. Beyond gastrointestinal diseases, *H. pylori* infection also increases the risk of cardiovascular, neurological, and metabolic disorders.

Early, rapid, and reliable detection of this pathogen is crucial for effective disease management. Conventional diagnostic approaches such as histopathology, microbial culture, and rapid urease testing are invasive, time-consuming, and limited in portability and applicability. Moreover, endoscopic methods are costly and uncomfortable for patients, underscoring the need for rapid, specific, point-of-care, and cost-effective diagnostic technologies.

In this preliminary study, electrochemical immunosensor was developed for the selective and sensitive detection of *H. pylori*, employing carbon dots (CDs)-modified gold electrodes with high conductivity. *H. pylori*-specific monoclonal antibodies were immobilized onto the modified surface via EDC/NHS coupling chemistry. The electrochemical biosensor platform evaluated in this study was tested through repeated measurements performed on the sensor platform using *H. pylori* concentrations ranging from 10 to 10⁶ cfu/mL. As preliminary findings from ongoing experiments, these results indicate that the sensor platform possesses the capability for highly sensitive bacterial detection levels, corresponds to a range of approximately 8–11 CFU/mL. In conclusion, the carbon-dot-based electrochemical immunosensor currently under development offers an innovative approach for the rapid, specific, and sensitive detection of *H. pylori*, and holds strong potential for portable point-of-care systems and early diagnostic applications.

Keywords: *Helicobacter pylori*, pathogen detection, early diagnosis, electrochemical biosensor

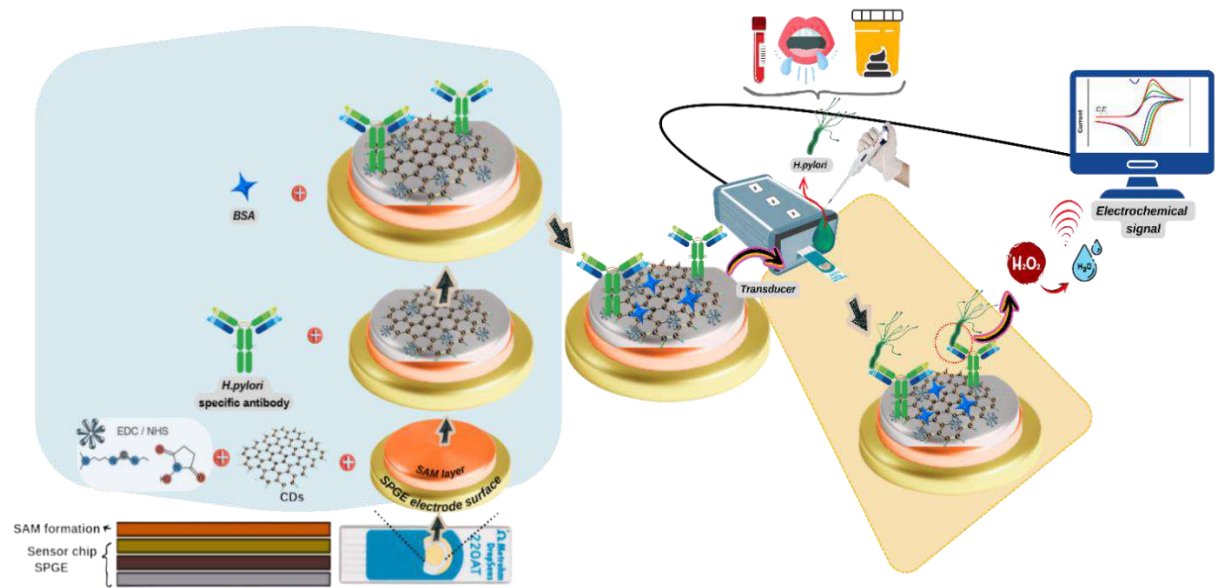


Figure 1. Principle of CDs-based immunosensor for *Helicobacter pylori* detection.

SÜRDÜRÜLEBİLİRLİK PERSPEKTİFİNDEN DİJİTAL İKİZ KENT UYGULAMALARI¹

DIGITAL TWIN CITY APPLICATIONS FROM A SUSTAINABILITY PERSPECTIVE

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Siyaset Bilimi ve Kamu Yönetimi Bölümü

ÖZET

Sürdürülebilirlik, mevcut kaynakların kullanımında gelecek nesillerin ihtiyaçlarını gözeterek koruma ve kullanma arasında dengeli bir yaklaşım geliştirilmesini gerektirir. Dijitalleşme kentsel hizmetlerin sürdürülebilir biçimde yürütülmesine katkı sunarak kaynaklar üzerindeki baskıyı azaltan yenilikleri beraberinde getirmektedir. Kentlerde dijital ikiz uygulamaları özellikle enerji, ulaşım, atık ve su yönetimi gibi temel hizmet alanlarında önemli kazanımlar sunmaktadır. Bir kentin dijital ikizi sensörler, IoT cihazları, büyük veri analitiği, yapay zekâ ve bulut bilişim altyapısının bütünleşmesiyle oluşturulur. Bu sayede binalardan ulaşım, enerji altyapısından su sistemlerine kadar pek çok unsur dijital ortamda sürekli güncellenen bir modelde temsil edilir. Böylece yöneticiler, şehirde meydana gelebilecek değişimleri önceden tahmin edebilir, riskleri azaltabilir ve kaynak kullanımını optimize edebilir. Dijital ikiz uygulamaları kentlerde sürdürülebilirlik hedeflerine ulaşmada önemli bir dönüşüm aracıdır. Fiziksel kentsel sistemlerin gerçek zamanlı verilerle desteklenen sanal modelleri olan dijital ikizler, enerji tüketimi, ulaşım akışı, su yönetimi ve altyapı performansı gibi kritik alanlarda daha doğru analiz ve öngörüler sunulmasını sağlarlar. Dijital ikiz uygulamaları karar vericilere yol göstererek daha isabetli ve hızlı karar almalarını sağlar, faaliyetlerin çevresel olumsuz etkileri azaltabilecek tedbirlerin alınmasına katkıda bulunur. Ayrıca kentsel hizmetlerin verimliliğini artırır ve maliyetleri düşürür. Literatür üzerinden dijital ikiz uygulamalarının kentlerde sunulan hizmetler bağlamında incelenmesi, bu teknolojinin sürdürülebilirliğin çevresel, ekonomik ve toplumsal boyutu ile ilişkili olduğunu göstermektedir. Dijital ikiz uygulamaları Birleşmiş Milletler Sürdürülebilir Kalkınma Amaçları içinde yer alan “Sürdürülebilir Şehirler ve Topluluklar” hedefiyle doğrudan ilişkilidir. Dünya dijital ikiz uygulamaları içinde Almanya, Finlandiya, Singapur örnekleri dikkat çekicidir. Aynı zamanda Türkiye’nin politika belgelerinde sürdürülebilirliği sağlamada dijitalleşmeyi bir araç olarak görmesi dijital ikiz çalışmaları konusunda kent yönetimlerini cesaretlendirmektedir.

Anahtar Kelimeler: Sürdürülebilirlik, Dijital İkiz Teknolojisi, Kentsel Hizmetler

¹ Bu bildiri Çanakkale Onsekiz Mart Üniversitesi Lisansüstü Eğitim Enstitüsü, Siyaset Bilimi ve Kamu Yönetimi Tezli Yüksek Lisans Programı’nda “Dijital İkiz Teknolojisinin Kentsel Hizmetlerde Uygulanması Üzerine Bir İnceleme” adlı devam etmekte olan yüksek lisans tez çalışması çerçevesinde hazırlanmıştır.

ABSTRACT

Sustainability requires the development of a balanced approach between protection and use, taking into account the needs of future generations in the use of available resources. Digitalization contributes to the sustainable execution of urban services and brings innovations that reduce the pressure on resources. Digital twin applications in cities offer significant gains, especially in basic service areas such as energy, transportation, waste and water management. A city's digital twin is created by integrating sensors, IoT devices, big data analytics, artificial intelligence and cloud computing infrastructure. In this way, many elements from buildings to transportation, from energy infrastructure to water systems are represented in a constantly updated model in the digital environment. Thus, managers can anticipate changes that may occur in the city, reduce risks and optimize resource use. Digital twin applications are an important transformation tool in achieving sustainability goals in cities. Digital twins, which are virtual models of physical urban systems supported by real-time data, enable more accurate analysis and forecasts to be provided in critical areas such as energy consumption, transportation flow, water management and infrastructure performance. Digital twin applications guide decision makers to make decisions more accurately and quickly, and contribute to taking measures that can reduce the environmental negative effects of activities. It also increases the efficiency of urban services and reduces costs. Examining digital twin applications in the context of services provided in cities through literature shows that this technology is related to the environmental, economic and social dimensions of sustainability. Digital twin applications are directly related to the goal of “Sustainable Cities and Communities” within the United Nations Sustainable Development Goals. Among the world's digital twin applications, the examples of Germany, Finland and Singapore are noteworthy. At the same time, the fact that Turkey sees digitalization as a tool in ensuring sustainability in its policy documents encourages city administrations in digital twin studies.

Keywords: Sustainability, Digital Twin Technology, Urban Services

STRATEGIES TO INCREASE MOTIVATION IN LEARNING MULTIPLE FOREIGN LANGUAGES

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This research addresses a current issue related to optimizing the multilingual education process for students by enhancing their motivation to learn multiple languages simultaneously. The study focused on analyzing the concept of multilingual education from various teaching perspectives and perceiving it from a motivational point of view. The goal of implementing the concept of multilingual education to improve equity and the opportunities offered to students, enabling them to develop multilingual skills and intercultural competencies that will allow them to become fulfilled citizens. Multilingual education has been established as a priority in numerous educational policy documents, such as Common European Framework of Reference for Languages and the Key Competences for Lifelong Learning, which emphasize the importance of multilingual competences. Multilingual Learning refers to the process through which individuals acquire and use multiple languages. It focuses on the personal and cognitive aspects of learning languages and the way individuals develop language skills. It is more related to the learner's experience, the methods and strategies used to learn and use multiple languages effectively. It highlights the learning process itself, including techniques and practices that make acquiring and using multiple languages easier. Thus multilingual learning focuses on the individual processes and strategies used to acquire and use multiple languages. Learning a foreign language has a significant impact on the student's identity, shaping not only external communication, but also internal perception. Teachers play a key role in creating a teaching environment to support students in developing their identity in various situations.

Key words: multilingualism, multilingual education, multilingual learning, foreign language learning practices, strategies for learning multiple languages, motivational theories, motivation for learning

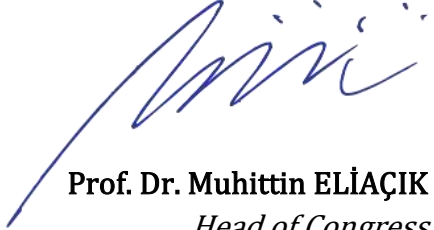
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9. Uluslararası HALIÇ MULTİDİSİPLİNER BİLİMSEL ARAŞTIRMALAR KONGRESİ 03-04 Aralık 2025 tarihinde İstanbul, Türkiye’de (çevrimiçi ve çevrimdışı) 26 farklı ülkenin akademisyen/araştırmacılarının katılımıyla gerçekleşmiştir. Kongre 16 Ocak 2020 Akademik Teşvik Ödeneği Yönetmeliğine getirilen “Tebliğlerin sunulduğu yurt içinde veya yurt dışındaki etkinliğin uluslararası olarak nitelendirilebilmesi için Türkiye dışında en az beş farklı ülkeden sözlü tebliğ sunan konuşmacının katılım sağlaması ve tebliğlerin yarıdan fazlasının Türkiye dışından katılımcılar tarafından sunulması esastır.” değişikliğine uygun düzenlenmiştir.

Bilgilerinize arz edilir,
Saygılarımla


Prof. Dr. Muhittin ELİAÇIK
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İlgili kararın ifası için görevlendirilen düzenleme kurulu üyeleri unvan ve isimleri aşağıda belirtilmiş olup bilim ve danışma kurulunun düzenleme kurulu tarafından teşekkür ettirilmesi ile kongreye bizzat iştirak edecek düzenleme kurulu üyelerinin yolluk ve gündeliklerinin saymanlığımız tarafından ilgili harcama kaleminden ödenmesi

Arz rica olunur



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