BOOK OF ABSTRACTS

EJONS

19TH INTERNATIONAL

CONGRESS ON SCIENTIFIC RESEARCH AND RECENT DEVELOPMENTS

June 25-27, 2026

Istanbul, Turkiye

EDITORS
Prof. Dr. Osman ERKMEN
Lecturer Dr. Neşe YILMAZ

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Scientific Research and Recent Developments

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Session-1
Hall-1

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858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Asst. Prof. Gökcen DOĞAN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Bahar ÖZTOPRAK TOPCU Asst. Prof. Dr. Handan IŞIKLAR	*İstanbul Okan University, Türkiye* *Yalova University, Türkiye*	**CYSTIC FIBROSIS AND NUTRITIONAL MANAGEMENT FROM THE NUTRIGENETIC PERSPECTIVE**
Berşan ŞENOL Asst. Prof. Dr. Handan IŞIKLAR	*İstanbul Okan University, Türkiye* *Yalova University, Türkiye*	**MITOCHONDRIAL CHANGES IN CANCER CELLS - OXIDATIVE STRESS AND APOPTOSIS**
Sena ÖREN YERLİ Can Volkan YUMUK Mehmet Umut ÇAPAR Ali ARSLAN Berkay Yekta EKREN Prof. Dr. Osman Uğur SEZERMAN Prof. Dr. Volkan Demirhan YUMUK	*Istanbul Okan University, Türkiye* *Acibadem University, Türkiye* *Istanbul University-Cerrahpaşa, Türkiye* *Yildiz Technical University, Türkiye*	**THE EFFECT OF PERSONALIZED MEDITERRANEAN DIET INTERVENTION ON GUT MICROBIOTA AND ANTHROPOMETRIC PARAMETERS IN INDIVIDUALS WITH OBESITY: A DIETITIAN-LED PILOT STUDY**
Duygu KOÇAK Assoc. Prof. Dr. Sedat ARSLAN	*Istanbul Okan University, Türkiye* *Bursa Uludağ University, Türkiye*	**A CURRENT PERSPECTIVE ON THE RELATIONSHIP BETWEEN STRESS, SLEEP QUALITY, AND NUTRITIONAL STATUS IN BASKETBALL PLAYERS**
Asst. Prof. Dr. Burcu USLU PhD. Ezgi DOĞAN	*Lokman Hekim University, Türkiye* *Yüksek İhtisas University, Türkiye*	**THE IMPACT OF RENEWABLE ENERGY CONSUMPTION ON FOOD INSECURITY IN TÜRKİYE: EVIDENCE FROM 2001–2023**
Fezanur HACICAFEROĞLU TEKİN Assoc. Prof. Dr. Sedat ARSLAN	*Okan University, Türkiye* *Bursa Uludağ University, Türkiye*	**HOUSEHOLD FOOD INSECURITY AND OBESITY RISK AMONG HOUSEWIVES**
Doğa ATASOY Asst. Prof. Dr. Sadet KARABULUT	*Okan University, Türkiye*	**THE ROLE OF NUTRITION IN BRAIN BIOCHEMISTRY AND NEUROTRANSMITTER REGULATION: SEROTONIN AND DOPAMINE IN MENTAL DISORDERS**
Elif BİRGÜL AY Asst. Prof. Dr. Sadet KARABULUT	*Okan University, Türkiye* *Yalova University, Türkiye*	**EFFECTS OF HIGH-FAT DIETS ON FETAL PROGRAMMING**

Session-1 Hall-2	**Online Session-1 · Hall-2** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Lecturer Cansu OĞUZ

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Yusuf KEP	*Istanbul Esenyurt University, Türkiye*	**REGRESSION ANALYSIS OF SOLAR ENERGY POTENTIAL IN ISTANBUL USING ARTIFICIAL NEURAL NETWORKS AND ITS EVALUATION FOR SUSTAINABLE CITIES**
Res. Asst. Erkin KOÇ Prof. Dr. Engin Cemal MENGÜÇ Assoc. Prof. Dr. Erdem ASLAN	*Kayseri University / Erciyes University, Türkiye* *Kayseri University, Türkiye* *Erciyes University, Türkiye*	**DUAL-BAND FENCE-SHAPED SILVER NANOANTENNA DESIGN FOR INFRARED SENSING APPLICATIONS**
Metin ÇELTİK Prof. Dr. Yakup HAMEŞ Prof. Dr. Mehmet Ali BELEN	*İskenderun Technical University, Türkiye*	**MICROSTRIP PATCH ANTENNA DESIGN FOR LTE BAND APPLICATIONS**
Musa DEMİR Prof. Dr. Yakup HAMEŞ Prof. Dr. Mehmet Ali BELEN	*İskenderun Technical University, Türkiye*	**BEAM SCANNING MICROSTRIP ANTENNA DESIGN**
Asst. Prof. Dr. Salim ÇINAR	*Niğde Ömer Halisdemir University, Türkiye*	**DETERMINATION OF R AND C VALUES IN THE DESIGN OF A WIEN BRIDGE OSCILLATOR USING LTSPICE SIMULATION AND OPTIMISATION METHODS**
Mehmet UYGUN Umut COŞGUN Assoc. Prof. Dr. Ahmet FEYZİOĞLU	*Kormetal A.Ş., Türkiye* *Marmara University, Türkiye*	**DEVELOPMENT OF A FULLY AUTOMATED DEBURRING UNIT FOR THE INJECTION DIE CASTING LINE**
Emre GÜL Umut COŞGUN Assoc. Prof. Dr. Ahmet FEYZİOĞLU	*Kormetal A.Ş., Türkiye* *Marmara University, Türkiye*	**IMPROVEMENT OF MACHINING COOLANT PERFORMANCE IN THE CNC MACHINING DEPARTMENT OF A HIGH-PRESSURE DIE CASTING PLANT**

Session-1 Hall-3	**Online Session-1 · Hall-3** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Assoc. Prof. Tülay YAZICI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Sinan ASLAN Assoc. Prof. Dr. Aslı KÖSEOĞLU	*Atatürk University, Türkiye*	**PRESENTATION OF FEMICIDE NEWS ON ONLINE NEWS SITES: AN ANALYSIS OF "YENIAKIT.COM.TR"**
Zeynep KOCAMAN Assoc. Prof. Dr. Aslı KÖSEOĞLU	*Atatürk University, Türkiye*	**AN ANALYSIS OF INSTAGRAM ADVERTISEMENTS FOR FASHION AND PERSONAL CARE PRODUCTS PROMOTED BY FAMALE INFLUENCERS**
Prof. Dr. Vahit İLHAN İrem ÜNAL	*Erciyes University, Türkiye*	**SOCIAL MEDIA JOURNALISM IN THE CONTEXT OF AGENDA-SETTING THEORY: THE CASE OF X**
Asst. Prof. Dr. Ferhat ATİK	*Girne American University, Turkish Republic of Northern Cyprus*	**POST-SUBJECT AND DISTRIBUTED IDENTITY: ONTOLOGICAL STATUS OF THE FRAGMENTED SELF ESTABLISHED ON DATA TRACES**
Cem Onur BALCI Asst. Prof. Dr. Hüsnü Çağlar DOĞRU	*Çanakkale Onsekiz Mart University, Türkiye*	**GIANTS AND SCAPEGOATS: HELLBLADE II LUDONARRATIVE APPROACH TO MYTHOLOGY**
Pınar YILDIZ Prof. Dr. Zeynep ÇETİN ERUS	*Marmara University, Türkiye*	**FROM POWER TO SANCTUARY: SPATIAL TRANSFORMATION IN PELIN ESMER'S WATCHTOWER**

Session-1
Hall-4

Online Session-1 · Hall-4
Zoom
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25 June 2026 · Ankara Time: **13:00-15:00**

MEETING ID
858 1117 0419

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HEAD OF SESSION: Ali Akbar FIROOZI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Mohammed MOUTAOUEKKIL	*Université Mohammed I, Morocco*	**HIGH-Q PHONONIC CRYSTAL DESIGN BASED ON DISC-SHAPED CAVITIES**
Md Tanweer ALAM Awadesh PRASAD	*V. K. S. University, India*	**RECENT ADVANCES AND APPLICATIONS OF PEROVSKITE-BASED DIELECTRIC MATERIALS**
Soukaina AIT ELMAKKI Abderrazak BOUBEKRI Laila MOUAKKIR	*Hassan II University of Casablanca, Morocco*	**MAGNETIC PROPERTIES OF A FERRIMAGNETIC MIXED-SPIN TRILAYER KAGOME NANOSTRUCTURE: AN EFFECTIVE FIELD THEORY STUDY**
Fabiano Cardoso da SILVA Prof. Dr. Henrique Antonio Mendonça FARIA	*São Paulo State University (UNESP), Brazil*	**THEORETICAL INVESTIGATION OF NATURAL DYE PRODUCED BY AMAZONIAN FUNGUS: APPLICATION IN DYE-SENSITIZED SOLAR CELLS**
Y. CHNIKA A. JABAR	*Mohammed V University in Rabat, Morocco* *Hassan II University of Casablanca, Morocco*	**FIRST-PRINCIPLES INVESTIGATION OF TIFE AND TIFEHX HYDRIDES FOR SOLID-STATE HYDROGEN STORAGE: ELECTRONIC, MECHANICAL, VIBRATIONAL, THERMODYNAMIC, AND OPTICAL PROPERTIES**
Magdeline TSHAMBANE Ali Akbar FIROOZI Sajid Mubashir SHEIKH Ali Asghar FIROOZI	*University of Botswana, Botswana*	**DIGITAL TWIN READINESS IN MINING OPERATIONS: A STRATEGIC FRAMEWORK FOR SAFER, SMARTER, AND MORE RESILIENT MINES**
Magdeline TSHAMBANE Ali Akbar FIROOZI Sajid Mubashir SHEIKH Ali Asghar FIROOZI	*University of Botswana, Botswana*	**AI-ENABLED SUSTAINABLE MINING: A CONCEPTUAL FRAMEWORK FOR INTEGRATING OPERATIONAL EFFICIENCY, SAFETY, AND ENVIRONMENTAL STEWARDSHIP**
Ali Akbar FIROOZI Ali Asghar FIROOZI Magdeline TSHAMBANE Sajid Mubashir SHEIKH	*University of Botswana, Botswana*	**CYBERSECURITY AND DATA GOVERNANCE CHALLENGES IN AUTONOMOUS AND CONNECTED MINING SYSTEMS**

Session-1 Hall-5	**Online Session-1 · Hall-5** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Prof. Dr. Zahra KARIMI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. M. K. GANESHAN	*AMET University, India*	**ARTIFICIAL INTELLIGENCE AND ECONOMIC GROWTH IN INDIA**
Konstantinos VAKOUFTSIS Dimitrios SYNDOUKAS Stavros KALOGIANNIDIS Vasileios SPANOS	*University of Western Macedonia, Greece*	**DECARBONIZATION AND JUST TRANSITION IN WESTERN MACEDONIA: ECONOMIC AND SOCIAL IMPACTS ON REGIONAL DEVELOPMENT**
Prof. Dr. Zahra KARIMI Elmira AZIZI NOROUZABADI	*University of Tabriz, Iran*	**THE CAUSAL RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND NON-OIL EXPORT DEVELOPMENT IN IRAN**
Cristian-Romeo SPĂTARU Prof. Dr. Cristian Constantin POPESCU	*Alexandru Ioan Cuza University of Iași, Romania*	**PERSISTENCE, INSTITUTIONS, AND DEVELOPMENT: A MULTI-METHOD PANEL ANALYSIS OF CORRUPTION DETERMINANTS IN EUROPEAN COUNTRIES**
Lucky Gany RIZKY Gaby THE Bambang Rizky RAMADHAN	*University of Lampung, Indonesia*	**THE EFFECTIVENESS OF CARBON TAX POLICY IN REDUCING ENVIRONMENTAL DAMAGE IN INDONESIA**
Georgiana Anamaria DUNĂ	*Romanian Academy, Romania*	**EMERGING DIGITAL TECHNOLOGIES AND ECONOMIC DEVELOPMENT IN THE EUROPEAN UNION: A LITERATURE REVIEW**
Faton MORINA Dr. Sc. Valbon BYTYQI	*University of Tirana, Albania* *University of Prishtina, Kosovo*	**CATALOGS AS A TOOL FOR TOURISM PROMOTION - CASE MUNICIPALITY OF PRIZREN**

Session-1
Hall-6

Online Session-1 · Hall-6
Zoom
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25 June 2026 · Ankara Time: **13:00-15:00**

MEETING ID **858 1117 0419**

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HEAD OF SESSION: Dr. Janet Iyabode OWOLABI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. Janet Iyabode OWOLABI	*Federal College of Education (Technical), Nigeria*	**ATTITUDES, READINESS, AND BARRIERS TO CYBERSECURITY PRACTICES AMONG BUSINESS EDUCATION STUDENTS IN NIGERIAN TERTIARY INSTITUTIONS**
María Cruz CUEVAS ÁLVAREZ	*Universidad Juárez Autónoma de Tabasco, Mexico*	**ACADEMIC FREEDOM OR FREEDOM IN TEACHING TECHNIQUES? THAT IS THE QUESTION. THE REALITY OF LATIN AMERICA AND THE INTERNATIONALIZATION OF THE CURRICULUM**
Musa MOHAMMED Ahmed Abdullahi BARKUTA Jimada ABDULRAHMAN	*Dr. Umaru Sanda Ahmadu College of Education, Nigeria*	**PERCEIVED IMPACT OF EARLY MARRIAGE ON EDUCATIONAL ATTAINMENT AMONG ADOLESCENTS IN BOSSO LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA**
Mohd Shahbaz KHAN Dr. Sameer Babu M	*Jamia Millia Islamia, India*	**CHILDREN LEARNING IN CONFLICT AND WAR: A SYSTEMATIC REVIEW OF TRAUMA, RECOVERY, AND EDUCATION**
Faseela T Dr. Mohammad TANWEER	*Jamia Millia Islamia, India*	**“FEASIBILITY OF TEACHING ORGANIC REACTION MECHANISM” THROUGH VARIOUS PEDAGOGIC STRATEGIES: PERCEPTION OF SELECT TEACHERS**
Nedeljko M. MILANOVIĆ	*University of Kragujevac, Serbia*	**SINGLE PARENTS OF YOUNGER PRIMARY SCHOOL CHILDREN IN THE WORLD OF THE CONTEMPORARY SCHOOL**

Session-2
Hall-1

Online Session-2 · Hall-1
Zoom
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HEAD OF SESSION: Prof. Özlem Martı AKGÜN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Asst. Prof. Merve ERDEM	*Maltepe University, Türkiye*	**WHAT IS INFORMED CONSENT, AND WHAT IS NOT? A CONCEPTUAL FRAMEWORK IN THE CLINICAL CONTEXT**
Asst. Prof. Dr. Banu BAŞ Hande ÇAKIROĞLU	*Ankara Yıldırım Beyazıt University, Türkiye*	**ANALYSIS OF EAR IMPRESSION TAKING VIDEOS ON YOUTUBE IN TERMS OF AUDIOLOGICAL APPLICATIONS AND QUALITY ASSESSMENT**
Assoc. Prof. Dr. Sadettin DEMİREL İpek Nazlı SINAG	*Bursa Uludağ University, Türkiye*	**BENEFICIAL EFFECTS OF BETAINE AND L-CARNITINE ON CARDIOVASCULAR RISK FACTORS ASSOCIATED WITH METABOLIC SYNDROME**
Assoc. Prof. Dr. Sadettin DEMİREL İpek Nazlı SINAG	*Bursa Uludağ University, Türkiye*	**THE ROLE OF NEUROPEPTIDES IN THE PATHOGENESIS OF HYPERTENSION**
Res. Asst. Oğuzhan AKBAŞ Res. Asst. Yasemin BİLİR Asst. Prof. Dr. Alperen KALYONCU	*Recep Tayyip Erdoğan Üniversitesi, Türkiye*	**ALVEOLAR RIDGE RECONSTRUCTION USING THE KHOURY TECHNIQUE**
Res. Asst. Yasemin BİLİR Res. Asst. Oğuzhan AKBAŞ Asst. Prof. Dr. Alperen KALYONCU	*Recep Tayyip Erdoğan Üniversitesi, Türkiye*	**PRF-ASSISTED SIMULTANEOUS LATERAL SINUS FLOOR ELEVATION AND AUTOGENOUS SYMPHYSIS BLOCK GRAFTING FOR VERTICAL AND HORIZONTAL BONE AUGMENTATION IN A SEVERELY ATROPHIC POSTERIOR MAXILLA**
Assoc. Prof. Dr. Nuran AKYURT	*Marmara University, Türkiye*	**EXAMINATION OF VR-SUPPORTED BREAST HEALTH EDUCATION IN MEDICAL IMAGING TECHNICIAN TRAINING**
Assoc. Prof. Dr. Nuran AKYURT	*Marmara University, Türkiye*	**EVALUATION OF VIRTUAL REALITY AND ARTIFICIAL INTELLIGENCE-SUPPORTED BREAST HEALTH AND BREAST SELF-EXAMINATION EDUCATION IN TERMS OF PARTICIPANT SATISFACTION AND PERCEIVED LEARNING OUTCOMES**

Session-2 Hall-2	**Online Session-2 · Hall-2** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **15:30-17:30**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Assoc. Prof. Serir UZUN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Zeynep Sude BAYRAKTAR Prof. Dr. Cüneyt AYDIN	*Yıldız Technical University, Türkiye*	**SELECTION OF THE OPTIMAL 3D DEFORMATION MODEL BASED ON INFORMATION CRITERIA**
Eyüp BULANIKLI Prof. Dr. Cüneyt AYDIN	*Yıldız Technical University, Türkiye*	**STOCHASTIC NOISE ANALYSIS IN TURKEY CORS GNSS STATIONS USING AUTOREGRESSIVE MODELS**
Seyyid Burhaneddin Muhammed ŞAHBAZ Prof. Dr. Ramazan Cüneyt ERENOĞLU	*Çanakkale Onsekiz Mart University, Türkiye*	**3D DEFORMATION ANALYSIS USING GNSS CAMPAIGN MEASUREMENTS AND AI-ASSISTED PREDICTIVE MODELING**
Asst. Prof. Sajedeh NOROZPOUR Assoc. Prof. Dr. Alireza Arshadi KHAMSE	*Istanbul Gelisim University, Türkiye* *Kharazmi University, Iran*	**THE IMPACT OF MATHEMATICAL SIMULATION TOOLS ON ACADEMIC PRACTICES: A PLS-SEM APPROACH**
Natnael Wubishet BAHIRU Prof. Dr. Hakan ANAY	*Eskişehir Osmangazi University, Türkiye*	**TOWARDS A HUMAN-ALIGNED AI EVALUATOR FOR PERCEIVED SPATIAL FUNCTIONALITY: A PROOF-OF-CONCEPT METHODOLOGY USING SYNTHETIC IMAGERY AND VISION TRANSFORMERS**
Bachira ELAREF Prof. Dr. Gökçe KETİZMEN	*Eskişehir Osmangazi University, Türkiye*	**URBAN MORPHOLOGICAL TRACES OF CONFLICT: DAMASCUS STREET ALONG BEIRUT'S FORMER GREEN LINE**

Session-2
Hall-3

Online Session-2 · Hall-3
Zoom
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25 June 2026 · Ankara Time: **15:30-17:30**

MEETING ID
858 1117 0419

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HEAD OF SESSION: Dr. Metanet ŞAHALİYEVA YILDIZ

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Lale LALAYEVA Asst. Prof. Dr. Naim ÜNVER	*Kastamonu University, Türkiye*	**A COMPARATIVE ANALYSIS OF TWO CONTEMPORARY PRESCHOOL EDUCATION CURRICULA IMPLEMENTED IN TÜRKİYE IN TERMS OF EARLY LITERACY SKILLS**
Dr. Patrizia MURADI	*Çağ University, Türkiye*	**EVALUATION OF AI-SUPPORTED LEARNING IN THE CONTEXT OF COGNITIVE LOAD THEORY**
Osman KÖKTEPE Melisa KUMLU Assoc. Prof. Dr. Tuğçe KOZAKLI ÜLGER Prof. Dr. Gül KALELİ YILMAZ Prof. Dr. Menekşe Seden TAPAN BROUTIN	*Bursa Uludağ University, Türkiye*	**THE PLACE OF THE ARCHITECTURE DISCIPLINE IN THE STEAM MODEL AND ITS CONTRIBUTION TO SPATIAL REASONING SKILLS**
Burcu SEZEK Prof. Munise SEÇKİN KAPUCU	*Eskisehir Osmangazi University, Türkiye*	**AN EXAMINATION OF SECONDARY SCHOOL STUDENTS' EXPERIENCES OF WATCHING SHORT-FORM SOCIAL MEDIA VIDEOS: A PHENOMENOLOGICAL STUDY**
Burcu SEZEK Prof. Munise SEÇKİN KAPUCU	*Eskisehir Osmangazi University, Türkiye*	**AN INVESTIGATION OF THE NATURE OF SCIENCE COMPONENTS IN THE TÜRKİYE CENTURY EDUCATION MODEL PHYSICS CURRICULUM**
Asst. Prof. Dr. Eren Can YILDIZ	*Ankara Music and Fine Arts University, Türkiye*	**CONTENT ANALYSIS OF STUDIES ON INSTRUMENTAL ADAPTATION IN BAĞLAMA PERFORMANCE**
Asst. Prof. Dr. Arkın GÜNAY	*Yalova University, Türkiye*	**MINIMUM WAGE IN LABOR LAW AND THE PRINCIPLES REGARDING THE DETERMINATION OF THE MINIMUM WAGE**
Dr. Metanet ŞAHALİYEVA YILDIZ	*Azerbaijan National Academy of Sciences, Azerbaijan*	**THE WISDOM BEHIND THE WORDS: A PHILOSOPHICAL COMMENTARY ON SELECTED TEXTS FROM THE CREATIVE WORKS OF TABRIZ PHILOSOPHER-POET MOHAMMAD HIDEJI**

Session-2 Hall-4	**Online Session-2 · Hall-4** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **15:30-17:30**	**MEETING ID** **858 1117 0419**	**PASSCODE** **191919**

HEAD OF SESSION: Assist. Prof. Dr. Szávai SZABOLCS

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Ali Akbar FIROOZI Ali Asghar FIROOZI Magdeline TSHAMBANE Sajid Mubashir SHEIKH	*University of Botswana, Botswana*	**HUMAN-CENTERED DIGITAL TRANSFORMATION IN MINING: WORKFORCE READINESS, SAFETY CULTURE, AND ETHICAL AI ADOPTION**
Soukaina HAMOU Mustapha MOUFASSIH Ousama TARAHI Anas MAZID Said AGOUNAD Hafida IDRISSI AZAMI	*Ibn Zohr University, Morocco*	**EVALUATING THE IMPACT OF MACHINE LEARNING CLASSIFICATION METHODS ON CORRELATION-BASED SSVEP DECODING**
Arop Grace KAKA Dr. Salau IBRAHIM	*Federal University of Lafia, Nigeria*	**A NEURAL CASCADE ARCHITECTURE FOR REAL-TIME TRANSACTION FRAUD DETECTION IN NIGERIAN FINTECH APIS: DESIGN, IMPLEMENTATION, AND EXPLAINABILITY**
Levi Anyehechukwu NWOSU Cynthia Chideraa NWOSU	*Abia State University, Nigeria* *Alvan Ikoku Federal University of Education, Nigeria*	**A REAL-TIME AI-GENERATED CONTENT DETECTION FRAMEWORK FOR MOBILE DEVICES**
Marius Vasile BÂRDAN Maria HARJA	*Gheorghe Asachi Technical University of Iasi, Romania*	**SOURCING AND APPLICATIONS OF MATERIALS WITH PHASE CHANGE**
Rajesh J. H. NAVASINGH Maciej ZDANOWSKI	*Opole University of Technology, Poland*	**PLASTICIZER-INDUCED SELF-HEALING IN BIOPLASTICS: OPPORTUNITIES FOR NEXT-GENERATION ELECTRICAL INSULATION MATERIALS**
Dr. Sulaiman Mustafa Khazaal AL-TIMMIMI Assist. Prof. Dr. Szávai SZABOLCS	*University of Miskolc, Hungary*	**INVESTIGATION OF THE MECHANICAL PROPERTIES AND COEFFICIENT OF FRICTION OF AN IRON MATRIX COMPOSITE**
Ana Luiza CASALECCHI Vicente GONZÁLEZ Henrique FARIA	*São Paulo State University (UNESP), Brazil* *Polytechnic University of Valencia, Spain*	**HEAT CONDUCTION WITH MOVING BOUNDARY: A STEFAN PROBLEM APPROACH APPLIED TO CARAMEL PRODUCTION**

Session-2 Hall-5	Online Session-2 · Hall-5 Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 25 June 2026 · Ankara Time: **15:30-17:30**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Givi DUCHIDZE

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. Tran Huu THANG	*Industrial University of Ho Chi Minh City, Vietnam*	**TRANSFORMING CULTURAL RESOURCES INTO SUSTAINABLE LIVELIHOODS THROUGH RURAL HERITAGE TOURISM MODEL IN AN XUAN VILLAGE, HUE CITY, VIET NAM**
Givi DUCHIDZE	*David Agmashenebeli Georgian National Defence Academy / East European University, Georgia*	**"GREEN" STRATEGIES AS A COMPETITIVE ADVANTAGE: INTEGRATING THE SUSTAINABLE DEVELOPMENT GOALS (SDGS) INTO CORPORATE MANAGEMENT**
Salfiya Ummah M.A.C.	*South Eastern University of Sri Lanka, Sri Lanka*	**THE IMPACT OF MANAGERS' COMPETENCIES ON EMPLOYEES' PERFORMANCE: A STUDY ON COMMERCIAL BANKS IN SRI LANKA**
Asst. Prof. Farrukh MAHFOOZ Prof. Dr. Riaz AHMED	*Bahria University, Pakistan*	**IMPORTANCE OF SUSTAINABILITY IN SEAPORTS: EVIDENCE FROM PAKISTAN**
Dr. Ina SEJDINI	*University of Elbasan, Albania*	**DETERMINANTS OF NON-PERFORMING LOANS IN ALBANIA: MACROECONOMIC DRIVERS, BANKING SECTOR CHARACTERISTICS, AND POST-REFORM EVIDENCE**
Sadais AMJAD	*The Islamia University of Bahawalpur, Pakistan*	**QUANTUM FINANCE: TRANSFORMING FINANCIAL MODELING AND DECISION-MAKING IN THE ERA OF QUANTUM COMPUTING**
PhD. Blerina SHKURTI MASHA	*Luarasi University, Albania*	**BETWEEN DOMESTIC LAW AND EUROPEAN STANDARDS: THE LEGAL TREATMENT OF PERSONAL DATA AND SECURITY OBLIGATIONS IN ALBANIA**
Dr. Nituja SINGH Medha MALAY	*Symbiosis Law School, India* *Faculty of Law, Delhi University, India*	**ASSESSING SCOPE FOR ARBITRABILITY IN INTELLECTUAL PROPERTY DISPUTES WITH SPECIAL REFERENCE TO INDIAN LAWS**

Session-2
Hall-6

Online Session-2 · Hall-6
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
25 June 2026 · Ankara Time: **15:30-17:30**

MEETING ID **858 1117 0419**

PASSCODE **191919**

HEAD OF SESSION: Dr. Ghulam Ahmad RAZA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dr. Ghulam Ahmad RAZA	*Azim Premji University, India*	**A SOURCE CRITICAL STUDY OF PERSIAN MANUSCRIPT TAZKIRAT UL-MULUK: INDO-PERSIAN HISTORIOGRAPHY**
Prem SHANKAR	*Aligarh Muslim University, India*	**FROM BHOJPUR TO THE METROPOLIS: EDUCATIONAL MIGRATION AND SOCIO-ECONOMIC MOBILITY AMONG BHOJPURI-SPEAKING COMMUNITIES IN DELHI NCR (2000–2020)**
Saule Mergentayevna YESENGELDIYEVA	*Abai Kazakh National Pedagogical University, Kazakhstan*	**SOVIET CARTOGRAPHY AND HISTORICAL GEOGRAPHY: IDEOLOGICAL DISCOURSE AND THE COLONIAL TRANSFORMATION OF KAZAKHSTAN**
Ahmad VARASTEH	*Islamic Azad University, Kermanshah Branch, Iran*	**ORAMANAT FOLK MUSIC AND ITS IMPACT ON THE INTERIOR DESIGN OF CULTURAL SPACES**
Ahmad VARASTEH	*Islamic Azad University, Kermanshah Branch, Iran*	**THE IMPACT OF KURDISH CULTURE ON THE INTERIOR DESIGN OF MUSIC HOUSES (IDENTITY SYMBOLS AND PATTERNS)**
Dr. Sohoutou Jean NOUNADONDE	*University of Parakou, Benin*	**A FEMINIST ANALYSIS OF FEMALE CHARACTERS IN OSCAR WILDE'S AN IDEAL HUSBAND**
Shahriar RAHMAN	*Metropolitan University, Bangladesh*	**POST-COLONIAL POWER AND THE DEHUMANIZATION OF THE SUBALTERN: A COMPARATIVE STUDY OF IMAGINARY MAPS AND DISGRACE**

Session-1 Hall-1	**Online Session-1 · Hall-1** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Assoc. Prof. Duygu KIRKIK

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Res. Asst. PhD Fatma ŞAYAN POYRAZ Nazlıhan GÜNEL Şevval İnci URUN	*Yıldız Technical University, Türkiye*	**IN VITRO EVALUATION OF THE ANTICANCER POTENTIAL OF COMBINATION APPLICATION OF INDISULAM AND THYMOQUINONE IN HUMAN BREAST CANCER CELL LINES**
Res. Asst. PhD Fatma ŞAYAN POYRAZ Şevval İnci URUN Nazlıhan GÜNEL Prof. Dr. Banu MANSUROĞLU	*Yıldız Technical University, Türkiye*	**INVESTIGATION OF THE IN VITRO CYTOTOXIC AND APOPTOTIC EFFECTS OF THYMOQUINONE-LOADED PLGA NANOPARTICLES ON U87MG GLIOBLASTOMA CELLS**
Asst. Prof. Dr. Sezen Milli AVTAN	*Health Sciences University, Türkiye*	**STRENGTHS AND AREAS NEEDING IMPROVEMENT IN BASIC SCIENCES EDUCATION FROM THE STUDENT PERSPECTIVE**
Samet ŞENCAN Prof. Dr. Abdullah ÖZKAN	*Iskenderun Technical University, Türkiye*	**THE IMPACT OF METHANE GAS RISK ON SEARCH AND RESCUE OPERATIONS IN CONFINED SPACES SUCH AS CAVES AND SHELTERS: A CBRN PERSPECTIVE**
Res. Asst. İsmet Berrak ALTUNÇUL GÜROL Asst. Prof. Dr. Cansu VATANSEVER	*İstanbul Medipol University, Türkiye* *Altınbaş University, Türkiye*	**VACCINES TO PREVENT INFECTIOUS DISEASES**
Ceyda SEZER Asst. Prof. Dr. Yasin KAYMAZ	*Ege University, Türkiye*	**INTEGRATION OF HOSPITAL INFORMATION MANAGEMENT SYSTEMS, ARTIFICIAL INTELLIGENCE, AND BIOINFORMATICS IN TÜRKİYE'S DIGITAL HEALTH TRANSFORMATION: AN EVALUATION OF CLINICAL LARGE LANGUAGE MODEL WORKFLOWS AND DATA GOVERNANCE**
Naila NASIBOVA Assoc. Prof. Dr. Ali KAHRAMANOĞLU	*Ondokuz Mayıs University, Türkiye*	**WEARABLE TECHNOLOGICAL PRODUCTS' USAGE LEVELS IN THE HEALTHCARE FIELD**
İnoussa Hassane Ali MAZOU Asst. Prof. Dr. Egemen DERE	*Bursa Uludağ University, Türkiye*	**NEUROENDOCRINE AND NEUROINFLAMMATORY EFFECTS OF GLYPHOSATE EXPOSURE ON THE HYPOTHALAMIC-PITUITARY AXIS**

Session-1
Hall-2

Online Session-1 · Hall-2
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **13:00-15:00**

MEETING ID
858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Asst. Prof. Dinçer ATASOY

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Asst. Prof. Dr. Güneş EKİM	*Karadeniz Technical University, Türkiye*	**INVESTIGATION OF GENERATIVE ADVERSARIAL NETWORK-BASED SYNTHETIC EEG DATA AUGMENTATION AND ITS EFFECT ON EPILEPTIC EEG CLASSIFICATION**
Asst. Prof. Dr. Ali AKBABA	*Istanbul Topkapı University, Türkiye*	**DETERMINING THE PROBABILITY OF TECHNICAL FAILURES TURNING INTO OPERATIONAL DISRUPTIONS IN THE AIRLINE SECTOR USING MACHINE LEARNING**
Assoc. Prof. Dr. Nil KONYALILAR Asst. Prof. Dr. Ali AKBABA	*İstanbul Topkapı University, Türkiye*	**A MACHINE LEARNING APPROACH TO PREDICTING THE ESCALATION OF CREW-RELATED DELAYS INTO FLIGHT DISRUPTIONS IN THE AVIATION SECTOR**
Fırat BİRGİNAL Salih Hakan YETGİN	*Tectone Technology, Türkiye* *Tarsus University, Türkiye*	**MECHANICAL PERFORMANCE AND TRIBOLOGICAL BEHAVIOR OF CARBON FIBER REINFORCED POM COMPOSITES**
Eda Eylül ÖZDEMİR Esma Begüm DEMİR Sudenaz KUŞ Serra METE Prof. Dr. Ali KILIÇ Dr. Gürdoğan DOĞRUL	*Konya Food and Agriculture University, Türkiye*	**THE PRICE OF BEING SMART: HOW AI THREATENS OUR PRIVACY**
Münevver KİMSESİZ Prof. Dr. Ferdağ KAHRAMAN AKSOYAK Assoc. Prof. Dr. Büşra KARTAL	*Kırşehir Ahi Evran University, Türkiye*	**STUDENT EXPERIENCES IN DRAWING TWO-DIMENSIONAL VIEWS OF THREE-DIMENSIONAL OBJECTS FROM DIFFERENT PERSPECTIVES USING PHYSICAL MATERIALS AND GEOGEBRA AR**
Nuri YIKILMAZ Asst. Prof. Dr. Emre ŞATIR	*İzmir Kâtip Çelebi University, Türkiye*	**INVESTIGATING THE IMPACT OF TECHNICAL DEBT ON TESTING PROCESSES AND DELIVERY PERFORMANCE IN SOFTWARE PROJECTS**

Session-1 Hall-3	**Online Session-1 · Hall-3** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Assoc. Prof. Celal GÜLŞEN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Assoc. Prof. Dr. Meral SERT Talip UĞUŞ	*Marmara University, Türkiye*	**SOCIETAL REGRESSION IN THE DIGITAL AGE: THE EFFECTS OF SOCIAL MEDIA ALGORITHMS ON THE DIFFERENTIATION OF SELF**
Assoc. Prof. Dr. Meral SERT Eslem YILDIRIM	*Marmara University, Türkiye*	**ART-BASED PRACTICES IN COUPLE AND FAMILY THERAPY: A SYSTEMATIC REVIEW**
Asst. Prof. Dr. Halil EKŞİ Asst. Prof. Dr. Hasan KÜTÜK Sena MERİÇ	*Marmara University, Türkiye* *Yıldız Technical University, Türkiye*	**ADAPTATION OF THE VALUE CLARITY QUESTIONNAIRE INTO TURKISH: A VALIDITY AND RELIABILITY STUDY**
Muhammed Emin ARSLAN Prof. Dr. Vugar Ali TÜRKSOY	*Yozgat Bozok University, Türkiye*	**AVERSIVE CONDITIONING AND BEHAVIORAL EXTINCTION IN DIGITAL ADDICTION**
Z. Gönül BALKIR Dr. Başak BALKIR GÜLEN Dr. Ecem KOCAOĞLAN	*Cyprus Aydın University, TRNC* *Kocaeli University, Türkiye*	**PATIENT AUTONOMY AND SELF-DETERMINATION**
Z. Gönül BALKIR Dr. Başak BALKIR GÜLEN Dr. Ecem KOCAOĞLAN	*Cyprus Aydın University, TRNC* *Kocaeli University, Türkiye*	**AN ESSAY ON THE INTRINSIC VALUE OF HUMAN LIFE AND HUMAN DIGNITY: WHO CAN DETERMINE THE VALUE OF LIFE?**
Özge SEZİK TANYERİ	*Atatürk University, Türkiye*	**EXAMINATION OF MEDIA LITERACY LEVELS OF PERSONNEL WORKING IN PUBLIC SERVICE SPORTS INSTITUTIONS ACCORDING TO DEMOGRAPHIC VARIABLES**
Özge SEZİK TANYERİ	*Atatürk University, Türkiye*	**THE IMPACT OF COMMUNICATION SKILLS OF PERSONNEL WORKING IN PUBLIC SERVICE SPORTS INSTITUTIONS ON SOCIAL MEDIA ADDICTION**
Özge SEZİK TANYERİ	*Atatürk University, Türkiye*	**EXAMINATION OF INDIVIDUALS' CONSCIOUS PARTICIPATION IN RECREATIONAL ACTIVITIES WITH DIFFERENT PARAMETERS**

Session-1
Hall-4

Online Session-1 · Hall-4
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **13:00-15:00**

MEETING ID
858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Prof. Dr. Henrique Antonio

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Eduardo Mariola Shouga MENDES Prof. Dr. Henrique Antonio Mendonça FARIA	*São Paulo State University (UNESP), Brazil*	**INTEGRATION OF CHEMICAL ENGINEERING AND SUSTAINABILITY: MATHEMATICAL MODELLING IN EMISSION CONTROL**
Samra BENKACEM Walid BOULTIF Youghourta BELHOCINE Bousaha ELHADI Aouici SAMIA	*20 August 1955 University of Skikda, Algeria* *University of Skikda, Algeria*	**PREPARATION OF AN FE/KAOLIN CATALYTIC SUPPORT AND ITS APPLICATION IN THE HETEROGENEOUS PHOTO-FENTON PROCESS FOR METHYLENE BLUE DEGRADATION**
Agbata Benedict CELESTINE Raimonda DERVISHI Omale DAVID Jimoh AHMED Yahaya Jibrin DANJUMA Okofu Mary BASSEY Omonile Jacob FUNSHO Okee Joshua IKABI	*Confluence University of Science and Technology, Nigeria* *Polytechnic University of Tirana, Albania* *Prince Abubakar Audu University, Nigeria* *University of Nigeria Nsukka, Nigeria*	**DYNAMICAL ANALYSIS OF MALARIA–TUBERCULOSIS CO-INFECTION TRANSMISSION UNDER MULTIPLE CONTROL MEASURES**
Agbata Benedict CELESTINE Raimonda DERVISHI Omale DAVID Shior Msuur MARY-ANNE Ejikeme Chioma LYDIA Yahaya Jibrin DANJUMA Fasiku Ggbenga CORNELIUS Ogunkolu Ayodeji BOLADE	*Confluence University of Science and Technology, Nigeria* *Polytechnic University of Tirana, Albania* *Prince Abubakar Audu University, Nigeria* *Benue State University, Nigeria* *University of Nigeria Nsukka, Nigeria* *Kogi State University, Nigeria*	**A MATHEMATICAL MODEL FOR THE COEXISTENCE OF VECTOR AND NON-VECTOR TRANSMISSION PATHWAYS IN MALARIA DYNAMICS**
E. O. FATUNMBI S. A. ADEGBENRO	*Federal Polytechnic Ilaro*	**NONLINEAR RADIATION EFFECTS ON MHD ETHYLENE GLYCOL NANOFLUID FLOW OVER A VERTICAL PERMEABLE CYLINDER FOR THERMAL ENERGY SYSTEM APPLICATIONS**
S. A. ADEGBENRO O. A. OLAIJU E. O. FATUNMBI	*Federal Polytechnic Ilaro, Nigeria*	**HEAT TRANSMISSION AND ENTROPY OPTIMIZATION OF MHD MICROPOLAR FLUID FLOW OVER AN EXTENDING SHEET**
Mohamed JANATI Prof. Lmokhtar IKHARRAZNE Prof. Mustapha LAMINE	*Hassan II University of Casablanca, Morocco*	**GEOMETRICALLY NONLINEAR VIBRATION OF A CRACKED CLAMPED–CLAMPED EULER–BERNOULLI BEAM UNDER DISTRIBUTED DYNAMIC LOADING: A GALERKIN-BASED REDUCED-ORDER APPROACH**
Ali Akbar FIROOZI Ali Asghar FIROOZI Magdeline TSHAMBANE Sajid Mubashir SHEIKH	*University of Botswana, Botswana*	**CIRCULAR ECONOMY PATHWAYS FOR MINE TAILINGS AND METALLURGICAL WASTE IN SUSTAINABLE CONSTRUCTION MATERIALS**

Session-1
Hall-5

Online Session-1 · Hall-5
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **13:00-15:00**

MEETING ID
858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Dr. Daniel MARCEL

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Ahmed ZYAT KHALID	*Cadi Ayyad University, Morocco*	**TERRITORIAL PLANNING AND THE SUSTAINABILITY OF TERRITORIES: TOWARD AN INTEGRATED GOVERNANCE APPROACH**
Abdullahi UMAR Dr. Toyese OYEGOKE	*Ahmadu Bello University, Nigeria*	**THEORETICAL ANALYSIS OF GLUTAMIC ACID AS ECO-FRIENDLY CORROSION INHIBITOR FOR ALUMINUM IN HCL SOLUTION**
Ibrahim UMAR	*Umaru Sanda Ahmadu College of Education, Nigeria*	**POVERTY, INSECURITY, AND ENVIRONMENTAL DEGRADATION IN NIGER STATE, NIGERIA: PATHWAYS TO SUSTAINABLE DEVELOPMENT**
Samir MERADI Hela DIOUANI Naima LABIAD	*Djillali Liabès University, Algeria*	**DIGITAL MARKETING FATIGUE IN THE AGE OF CONTINUOUS ONLINE ADVERTISING: EXPLORING ITS IMPACT ON CONSUMER WELL-BEING**
Ketema ALEMU Prof. Dr. Tamrat TESFAYE Serkalem ABNEW Prof. Dr. Karthikeyan RAJAN	*Bahir Dar University, Ethiopia*	**UNDERSTANDING CUSTOMER PREFERENCES IN SHOE SOLE DESIGN: A COMPREHENSIVE STUDY ON MATERIAL, COMFORT, AND MARKET TRENDS**
Herman Anwar ENRE Siti Nasyrah ANNADZIRAH	*Universitas Cokroaminoto Makassar, Indonesia* *Universitas Muhammadiyah Makassar, Indonesia*	**DIGITAL PUBLIC RELATIONS STRATEGY IN INDONESIAN HIGHER EDUCATION INSTITUTIONS FOR STRENGTHENING PUBLIC TRUST AND EDUCATIONAL COMMUNICATION IN THE DIGITAL ERA**
Ibrahim ABUBAKAR Dr. Daniel MARCEL	*Modibbo Adama University, Nigeria* *Mudiame University, Nigeria*	**IMPACT OF BANK CHARACTERISTICS ON FINANCIAL PERFORMANCE OF SELECTED DEPOSIT MONEY BANKS IN NIGERIA**

Session-1 Hall-6	**Online Session-1 · Hall-6** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **13:00-15:00**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Prof. Dr. Jorge Ferreira FRANCO

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Elizabeth Ometere OMAKU Prof. S. N. ZUBAIRU	*Federal University of Technology Minna, Nigeria*	**AN APPRAISAL OF PASSIVE FIRE PROTECTION DEFECTS IN PUBLIC OFFICE BUILDINGS OF ABUJA, NIGERIA**
Kanu-Ikoku Prince U. P. B. HARUNA B. M. LAWAL S. B. AHMED	*Federal University of Technology Minna, Nigeria*	**THERMAL PERFORMANCE OF A CLIMATE-RESPONSIVE DATA CENTRE IN ABUJA, NIGERIA**
Mahsa HOSEINI	*Islamic Azad University, Kermanshah Branch, Iran*	**DESIGN STRATEGIES FOR EQUESTRIAN COMPLEXES BASED ON TOURISM DEVELOPMENT**
Prof. Dr. Mohammed WAHEEB Amal Kamal KANANI	*The Hashemite University, Jordan*	**DAMIYAH: FROM ADAM'S DESCENT TO THE HUMAN JOURNEY**
Prof. Dr. Jorge Ferreira FRANCO	*Universidade Estadual Júlio de Mesquita Filho (UNESP), Brazil*	**3D INFORMATION PRODUCTION AND VISUALIZATION TECHNOLOGIES FOR INSTIGATING CITIZENS' READING AND WRITING AND DIGITAL EDUCATION PROCESSES**
Dr. Tran Huu THANG Nguyen Thi LUA	*Industrial University of Ho Chi Minh City, Vietnam*	**PROMOTING CULTURAL VALUES OF AN XUAN VILLAGE, HUE CITY, IN ASSOCIATION WITH SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION**
Basiru Adeyemi ADEBISI	*Kwara State University, Nigeria*	**BIOPHILIC DESIGN FORMS IN THE STAGE PRODUCTION OF FEMI OSOFISAN'S FOREST OF PROMISED HARM**

Session-2 Hall-1	Online Session-2 · Hall-1 Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **15:30-17:30**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Asst. Prof. Melek Gökmen KARAKAYA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Tolga ÖZEL Assoc. Prof. Dr. Gökhan KÖK Prof. Dr. Yeşim Gül SALMAN	*Ege University, Türkiye*	**SYNTHESIS AND CHARACTERIZATION OF TWO NOVEL THIO-GLUCOSE DERIVATIVES FOR GOLD GLYCONANOPARTICLE AND GLYCONANOTECHNOLOGY APPLICATIONS**
Asst. Prof. Dr. Alper YARDAN	*Balıkesir University, Türkiye*	**THEORETICAL INVESTIGATION OF THE ELECTRONIC, REACTIVE, AND SPECTROSCOPIC PROPERTIES OF A BULKY SCHIFF BASE LIGAND VIA DENSITY FUNCTIONAL THEORY (DFT)**
Asst. Prof. Dr. Alper YARDAN	*Balıkesir University, Türkiye*	**COMPARATIVE HIRSHFELD SURFACE ANALYSIS OF THE SOLID-STATE SUPRAMOLECULAR INTERACTIONS OF A STERICALLY HINDERED SCHIFF BASE LIGAND AND ITS NICKEL(II) COMPLEX**
Alev DİŞLİ Adil UMAZ Mehmet Şakir ECE	*Mardin Artuklu University, Türkiye*	**HIGH-YIELD HYDROGEN PRODUCTION BY SODIUM BOROHYDRIDE METHANOLYSIS USING OLEIC ACID-COATED MAGNETIC NANO-CATALYST**
Asst. Prof. Dr. Seyda AYDOGDU	*Yıldız Technical University, Türkiye*	**THEORETICAL INSIGHTS INTO THE ELECTRONIC AND SPECTROSCOPIC PROPERTIES OF CLOTHIANIDIN**
Halil MUTLUBAŞ Prof. Dr. Ataç UZEL Assoc. Prof. Dr. Gözde DUMAN Prof. Dr. Mehmet Kadri BOZOKALFA Prof. Dr. Jale YANIK	*Ege University, Türkiye*	**SEED COATING WITH BACTERIA-INOCULATED BIOCHAR**

Session-2 Hall-2	Online Session-2 · Hall-2 Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **15:30-17:30**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Doç. Dr. Murat FİDAN

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Asst. Prof. Dr. Feride BAL	*Gaziantep University, Türkiye*	**THE DARK SIDE OF DIGITAL TRANSFORMATION IN FAMILY BUSINESSES: THE MEDIATING ROLE OF INTERGENERATIONAL CONFLICT IN THE EFFECT OF DIGITALIZATION PRESSURE ON DIGITAL BURNOUT**
Assoc. Ph.D. Vuqar NAZAROV Leyla MUSTAFAZADE	*Azerbaijan University of Tourism and Management, Azerbaijan*	**ACTUAL PROBLEMS OF SMALL AND MEDIUM-SIZED BUSINESSES IN THE CONTEXT OF GLOBALIZATION**
Doç. Dr. Murat FİDAN	*Kastamonu University, Türkiye*	**THE ARCHAEOLOGY OF HOMO ECONOMICUS: THE ORIGINS OF HUMANITY**
Asst. Prof. Dr. Gökhan ASKAN	*Erzincan Binali Yıldırım University, Türkiye*	**ASSESSING THE ROLE OF THE ERGAN MOUNTAIN WINTER SPORTS AND NATURE TOURISM CENTER IN TURKEY'S WINTER TOURISM AND ITS POTENTIAL FOR YEAR-ROUND TOURISM DEVELOPMENT**
Fatma KAYMAZ KARAHAN Assoc. Prof. Dr. Emine Elif NEBATİ	*Istanbul Sabahattin Zaim University, Türkiye*	**EVALUATION OF CUSTOMER RELATIONSHIP MANAGEMENT PROCESSES: A STUDY IN THE TELECOMMUNICATIONS INDUSTRY**
Doğan ŞENGÜL Mahmut Emin SARIKAYA	*İstanbul Sabahattin Zaim University, Türkiye*	**PYTHAGOREAN FUZZY WEIGHTED AVERAGING OF CHURN DISCOURSE: HESITANCY-AWARE RETENTION-CRITERIA WEIGHTS FROM CUSTOMER X POSTS IN TÜRKİYE**
Mahmut Emin SARIKAYA Doğan ŞENGÜL	*İstanbul Sabahattin Zaim University, Türkiye*	**TRIANGULAR FUZZY LINGUISTIC AGGREGATION OF LITERATURE EVIDENCE: WEIGHTING HIGH-SCHOOL SELECTION CRITERIA FROM THE SCHOOL-CHOICE LITERATURE FOR TÜRKİYE'S LGS**

Session-2
Hall-3

Online Session-2 · Hall-3
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **15:30-17:30**

MEETING ID
858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Dr. Rim NACIRI

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Ali Akbar FIROOZI Ali Asghar FIROOZI Magdeline TSHAMBANE Sajid Mubashir SHEIKH	*University of Botswana, Botswana*	**CLIMATE-RESILIENT MINE WATER MANAGEMENT: INTEGRATING RISK GOVERNANCE, REUSE, AND ENVIRONMENTAL PROTECTION**
Roxana CIORTEANU Ioana C. MARINAS Catalina Ionica CIOBANU Ionel I. MANGALAGIU Ramona DANAC	*Alexandru Ioan Cuza University of Iasi, Romania* *Research Institute of the University of Bucharest, Romania*	**SYNTHESIS AND BIOLOGICAL EVALUATION OF HEMOCOMPATIBLE 6-AZAINDOLE PYRIDINIUM SALTS**
Toleshi TESHOME Grace NGUBENI Nosipho MOLOTO	*Bonga University, Ethiopia* *University of Witwatersrand, South Africa*	**BIMETALLIC FE-CO CO-DOPED ZNO NANOCATALYSTS: SYNTHESIS, CHARACTERIZATION, AND ENHANCED PHOTOCATALYTIC DEGRADATION OF METHYL ORANGE**
Abdullah SHAHBAZ	*Falling Upward, United Kingdom*	**ARTIFICIAL INTELLIGENCE IN MODERN SOFTWARE DEVELOPMENT FOR INDUSTRIAL APPLICATIONS**
Dr. Rim NACIRI Prof. Dr. El Mehdi ELKHATTABI	*Université Sidi Mohammed Ben Abdellah, Morocco* *Université Moulay Ismail de Meknès, Morocco*	**HYBRID BIOMASS-SOLAR SYSTEMS WITH ENERGY STORAGE: A SYSTEMATIC REVIEW OF TECHNOLOGIES, CONTROL STRATEGIES, AND SUSTAINABILITY OUTCOMES**
Azzedine BOUZAOUIT Chouaib ZEGHIDA Mounir GAHGAH Djeddou KHEDIDJA Mefdaoui FATIHA	*University of Skikda, Algeria* *Cherif Messaadia University of Souk Ahras, Algeria*	**THE TOPSIS MULTICRITERIA METHOD FOR THE ANALYSIS OF INDUSTRIAL SYSTEM FAILURES**
Dr. Ayyoub SKAOU Prof. Dr. El Hassan EL MOUDEN	*Cadi Ayyad University, Morocco*	**DIVERSITY OF WILD BEES IN MOROCCO: A FOCUS ON THE MARRAKECH–SAFI REGION**
Shahriar Hasan Mridha RATUL Kazi Tariqul ISLAM Shakik Ahmed WALID Farhana RAHMAN Moukuri MOHIM Md Shakil MAHMUD	*Mridha's Research Center (MRC), Bangladesh* *Saga University, Japan* *EQMS Consulting Limited, Bangladesh* *Southeast University, Bangladesh* *Pittsburg State University, USA*	**GEOSPATIAL ANALYSIS OF WATER POLLUTION AND ITS ENVIRONMENTAL CONSEQUENCES IN NARAYANGANJ**

Session-2
Hall-4

Online Session-2 · Hall-4
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **15:30-17:30**

MEETING ID
858 1117 0419

PASSCODE
191919

HEAD OF SESSION: Clara Resti WAHYUNINGSIH

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Dim, Amaka Victoria	*Shanahan University, Nigeria*	**A COMPARATIVE STUDY OF FINANCIAL PERFORMANCE OF MULTINATIONAL AND INDIGENOUS INDUSTRIAL GOODS FIRMS IN NIGERIA**
HANINDYA SAVANDA ATHAYANISA FALISHA PUTRI ADIVA CHANTIKA ATTHAYA ARLIE	*University of Lampung, Indonesia*	**PROFIT SHIFTING MECHANISMS AND THE EVOLUTION OF GLOBAL TAX TRANSPARENCY**
Achmad Rajwa Alamsyah MARCHIO Ahmad Rizky SUBHANSYAH Zalfa GHAISANI	*Universitas Lampung, Indonesia*	**THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND TAX AVOIDANCE**
Clara Resti WAHYUNINGSIH Andini Nares WATI	*Universitas Lampung, Indonesia*	**THE ECONOMIC CONSEQUENCES OF INDONESIA WITHOUT THE TAXATION SECTOR**
Dimas Bayu ALFIANTO Rhesa Mahardika JAYA Marcheal FRANS	*Lampung University, Indonesia*	**THE ROLE OF TAXES IN INDONESIA'S NATIONAL DEVELOPMENT IN FACING GLOBAL ECONOMIC UNCERTAINTY IN 2026**

Session-2 Hall-5	**Online Session-2 · Hall-5** Zoom https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1 26 June 2026 · Ankara Time: **15:30-17:30**	MEETING ID **858 1117 0419**	PASSCODE **191919**

HEAD OF SESSION: Asst. Prof. Neşe YILMAZ

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Lect. Dilan ALKAÇ	*Beykent University, Türkiye*	**THE TRANSFORMATION OF THE LABOR MARKET IN THE AGE OF ARTIFICIAL INTELLIGENCE: ECONOMIC IMPACTS AND FUTURE PERSPECTIVES**
Lect. Dilan ALKAÇ	*Beykent University, Türkiye*	**THE IMPACT OF GLOBAL FOOD CRISES ON AGRICULTURAL TRADE**
Asst. Prof. Dr. Emine KAYA Ömer KAYA	*Bingöl University, Türkiye*	**GOLD MARKET ANOMALIES FROM A BEHAVIORAL FINANCE PERSPECTIVE: A SYSTEMATIC REVIEW OF THE IMPACT OF INVESTOR PSYCHOLOGY ON PRICING DURING CRISIS PERIODS**
Assoc. Prof. Dr. Vuqar NAZAROV Aziz ISKANDAROV	*Azerbaijan University of Tourism and Management, Azerbaijan*	**ACTUAL PROBLEMS OF THE FUNCTIONING OF INVESTMENT MECHANISMS IN THE MARKET OF SECURITIES IN THE REPUBLIC OF AZERBAIJAN**
Dr. Abdullah Kürşat MERTER Tuana Deniz ÇELİK	*Gebze Technical University, Türkiye*	**WILL PREDICTIVE ARTIFICIAL INTELLIGENCE OR ENIGMATIC HUMAN INTELLIGENCE WIN IN BUSINESS?**
Büşra NARİN Assoc. Prof. Dr. Gözde MERT	*Istanbul Nişantaşı University, Türkiye*	**THE MODERATING ROLE OF JOB INSECURITY ON THE IMPACT OF AI CONCERNS ON INNOVATIVE WORK BEHAVIOR IN THE SERVICE SECTOR**
Ahmet Tunahan ÇAMOĞLU Assoc. Prof. Dr. Ali KAHRAMANOĞLU	*Ondokuz Mayıs University, Türkiye*	**USER RESPONSES TO IN-APP PURCHASE TYPES: A COMPARATIVE LITERATURE REVIEW**
Onurcan UÇAR Assoc. Prof. Dr. Seval ENE YALÇIN	*Bursa Uludağ University, Türkiye*	**ARTIFICIAL INTELLIGENCE-BASED REVERSE FLOW FORECASTING IN CIRCULAR SUPPLY CHAINS**

Session-2
Hall-6

Online Session-2 · Hall-6
Zoom
https://us02web.zoom.us/j/85811170419?pwd=pQ4pPAQuWwhmZzP6PabYQcoqQiuXMn.1
26 June 2026 · Ankara Time: **15:30-17:30**

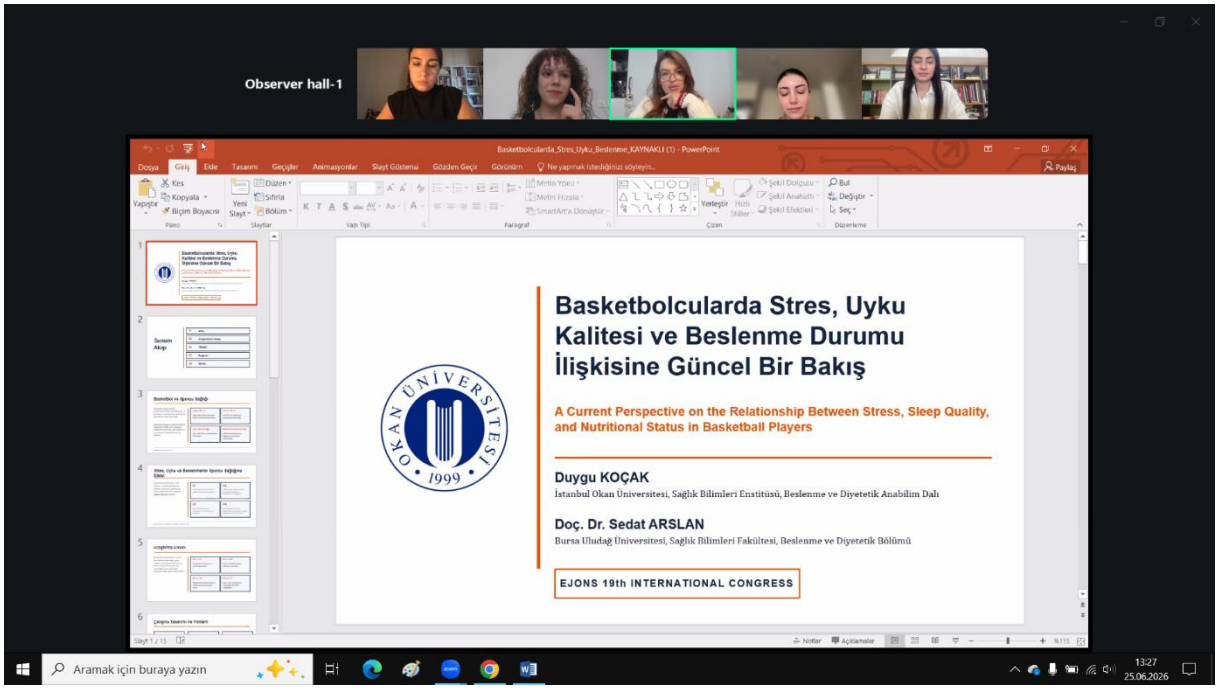
MEETING ID
858 1117 0419

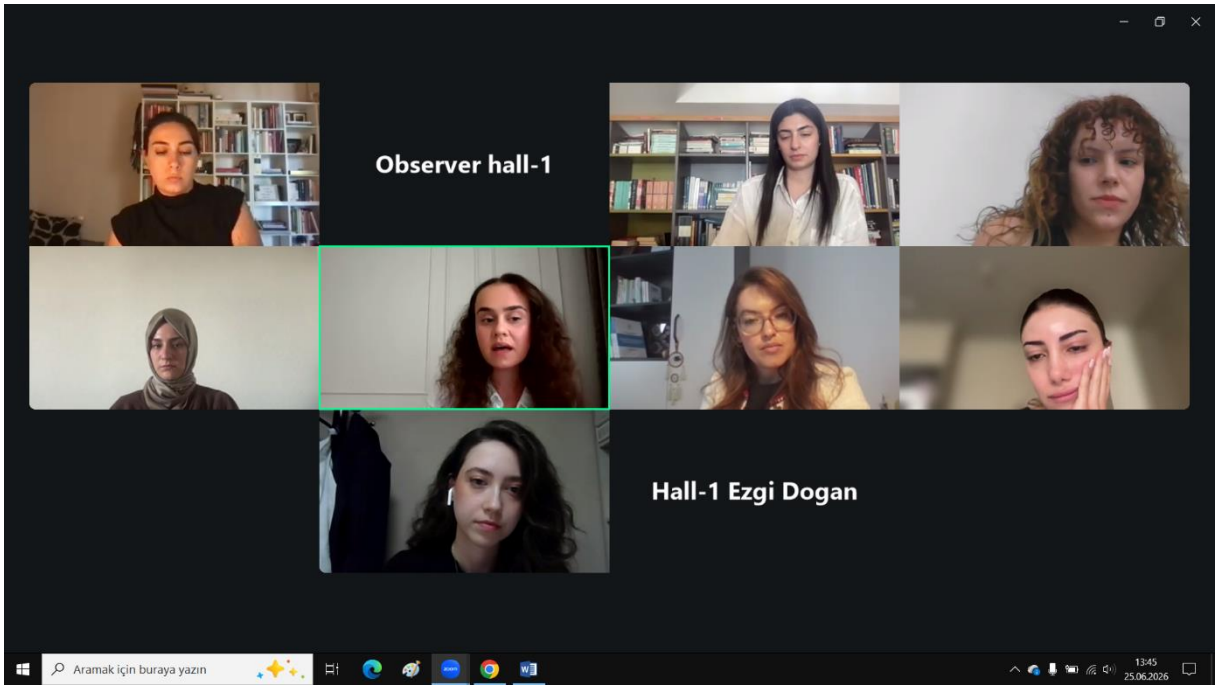
PASSCODE
191919

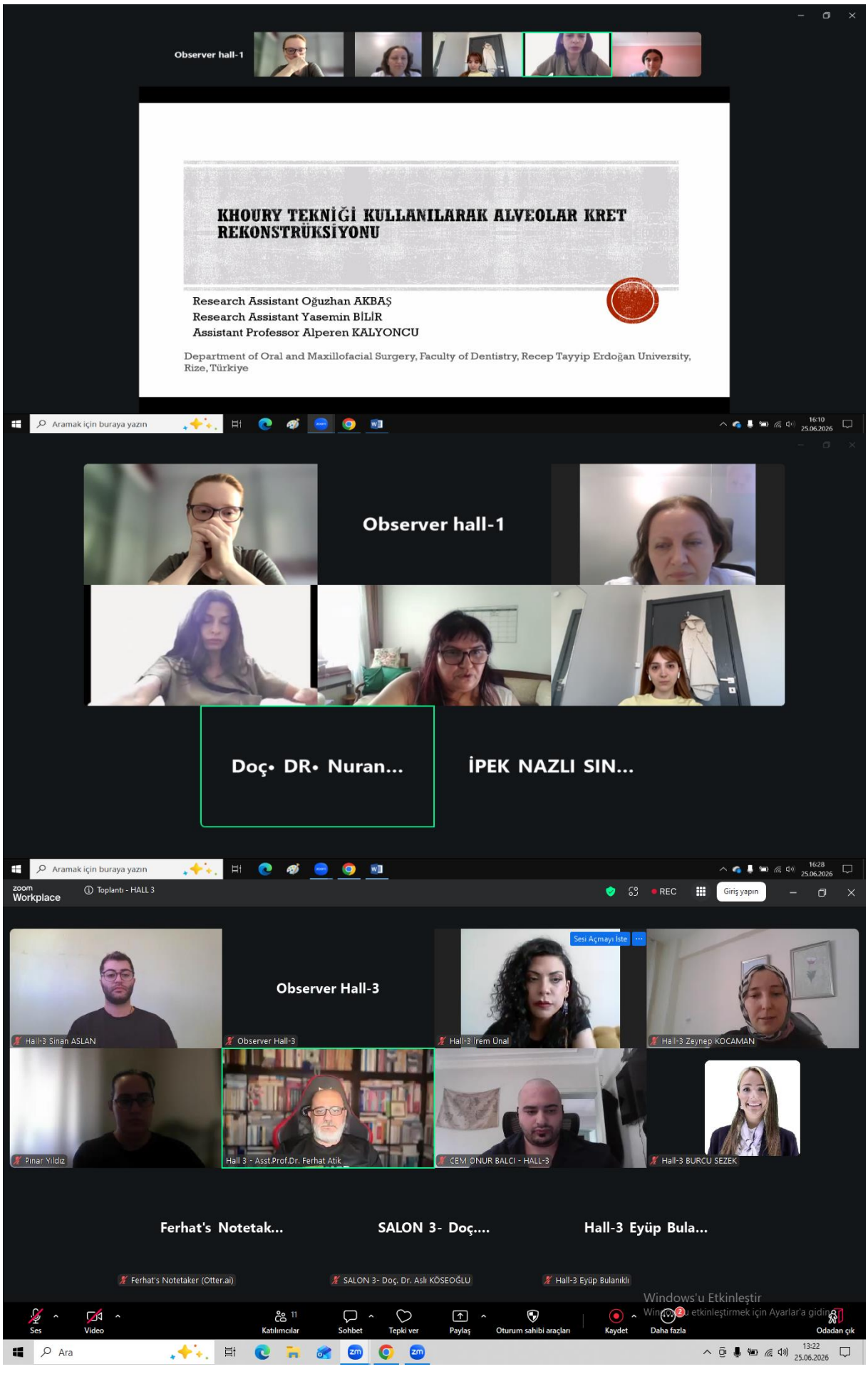
HEAD OF SESSION: Abed ZOULIKHA

AUTHOR(S)	ORGANISATION	TOPIC TITLE
Shanza KHANUM Muhammad ASAD	*University of Education Lahore, Pakistan*	**PROTECTIVE ROLE OF SILVIDORA PROCEIA AGAINST HISTOPATHOLOGICAL DAMAGE OF GREEN-SYNTHESIZED SILVER NANOPARTICLES IN LABEO ROHITA**
Abed ZOULIKHA Lachabi ABDELHADI Laid ABDELALI	*Applied Materials Laboratory, Sidi Bel Abbes University, Algeria*	**ELECTRONIC STRUCTURE AND STRUCTURAL STABILITY OF $TL_{1-x}B_xP$ ALLOYS: A FIRST-PRINCIPLES STUDY WITH SPIN–ORBIT COUPLING**
Elona SHLLAKU Assoc. Prof. Dr. Arieta CAMAJ IBRAHIMI	*University of Peja "Haxhi Zeka", Kosovo*	**ASSESSMENT OF MYCOTOXIN RISK IN MILK: FROM ANIMAL FEED TO AFLATOXIN M1 (AFM1)**
Abderrazzak IHOUATEN Khadija EL-MOUSTAQIM Jamal MABROUKI	*Mohammed V University in Rabat, Morocco*	**IOT ENABLED WASTEWATER MONITORING AND ENVIRONMENTAL PROTECTION**
MUHAMMAD FAISAL	*Ministry of IT & Telecommunication, Pakistan*	**MULTI-MODAL DEEP LEARNING AND SENSOR FUSION FOR INTELLIGENT MARITIME SECURITY: ENHANCING BORDER PROTECTIONS VIA GLOBAL MARINE DATA AGGREGATIONS**

CONFERENCE GALERY



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KHOURY TEKNİĞİ KULLANILARAK ALVEOLAR KRET REKONSTRÜKSİYONU
Research Assistant Oğuzhan AKBAŞ
Research Assistant Yasemin BİLİR
Assistant Professor Alperen KALYONCU
Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Recep Tayyip Erdoğan University, Rize, Türkiye
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16:10
25.06.2026
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Toplantı - HALL 3
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Observer Hall-3
Sesi Açmayı İste
Hall-3 Sinan ASLAN
Observer Hall-3
Hall-3 İrem Ünal
Hall-3 Zeynep KOCAMAN
Pınar Yıldız
Hall 3 - Asst.Prof.Dr. Ferhat Atik
CEM ONUR BALCI - HALL-3
Hall-3 BURCU SEZEK
Ferhat's Notetak...
SALON 3- Doç....
Hall-3 Eyüp Bula...
Ferhat's Notetaker (Otter.ai)
SALON 3- Doç. Dr. Aslı KÖSEOĞLU
Hall-3 Eyüp Bulanıklı
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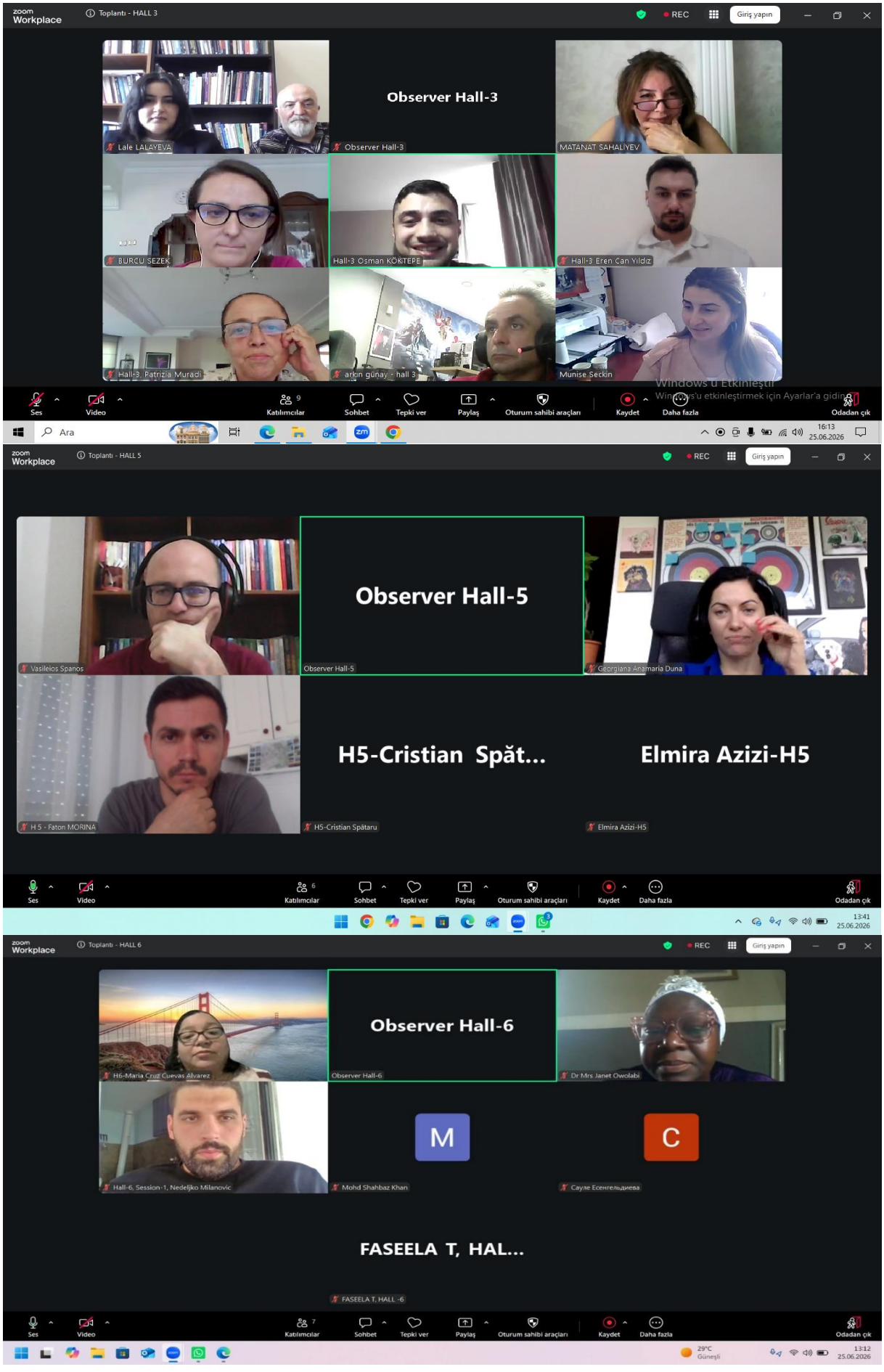
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Giriş yapın
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Lale LALAYEVA
Observer Hall-3
MATANAT SAHALIYEV
BURCU SEZEK
Hall-3 Osman KÖKTEPE
Hall-3 Eren Can Yıldız
Hall-3, Patrizia Muradi
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Toplantı - HALL 5
REC
Giriş yapın
Observer Hall-5
Vasileios Spanos
Observer Hall-5
Georgiana Anamaria Duna
H 5 - Faton MORINA
H5-Cristian Spătaru
Elmira Azizi-H5
Ses
Video
Katılımcılar
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Daha fazla
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zoom Workplace
Toplantı - HALL 6
REC
Giriş yapın
Observer Hall-6
H6-Maria Cruz Cuevas Alvarez
Observer Hall-6
Dr Mrs Janet Owolabi
Hall-6, Session-1, Nedeljko Milanovic
Mohd Shahbaz Khan
Сауле Есенгельдиева
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FASEELA T, HALL -6
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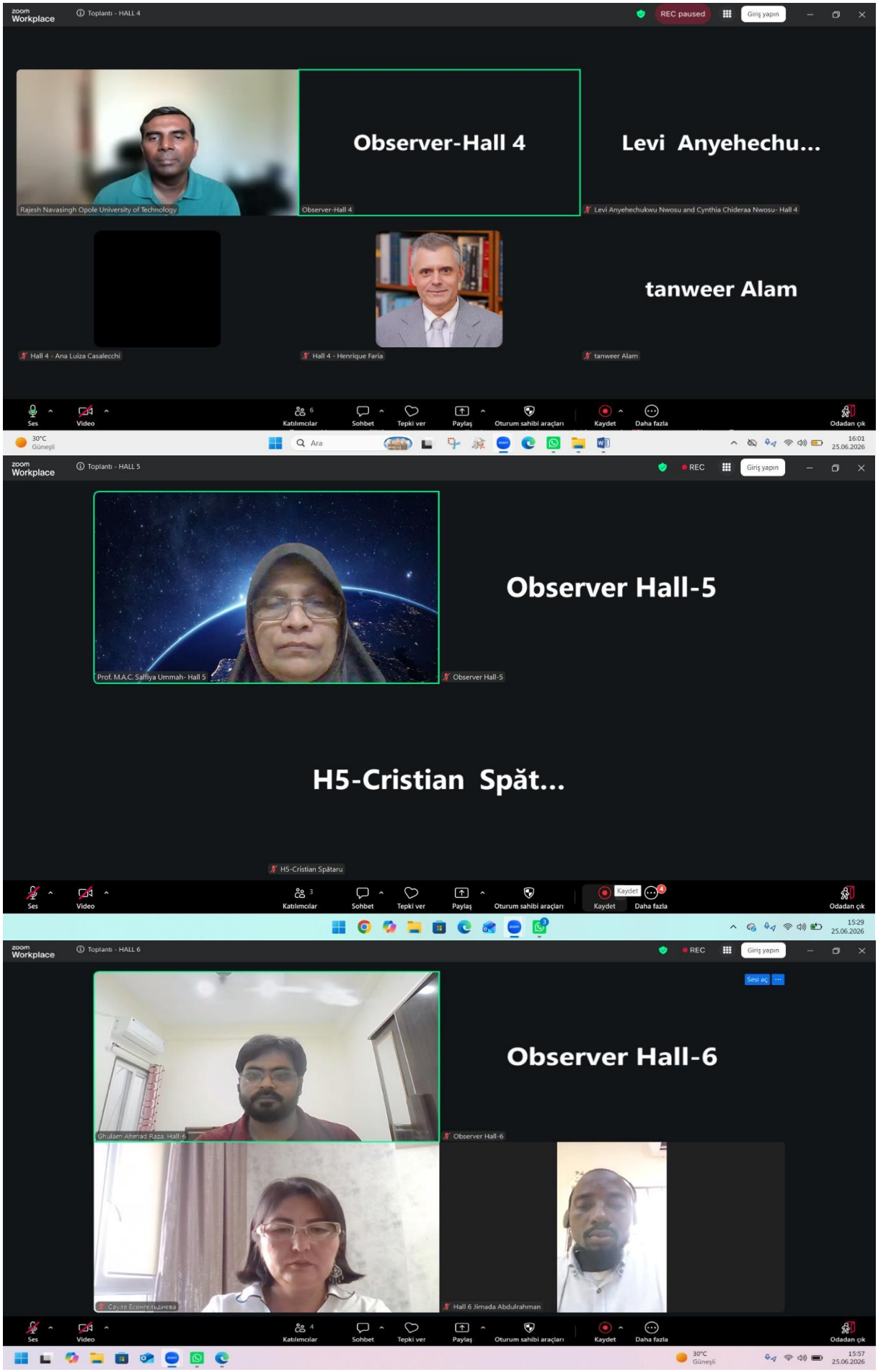
Toplantı - HALL 4
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Observer-Hall 4
Levi Anyehechu...
Rajesh Navasingh Opole University of Technology
Observer-Hall 4
Levi Anyehechukwu Nwosu and Cynthia Chideraa Nwosu- Hall 4
tanweer Alam
Hall 4 - Ana Luiza Casalecchi
Hall 4 - Henrique Faria
tanweer Alam
Ses
Video
Katılımcılar
Sohbet
Tepki ver
Paylaş
Oturum sahibi araçları
Kaydet
Daha fazla
Odadan çık
Toplantı - HALL 5
REC
Giriş yapın
Observer Hall-5
Prof. M.A.C. Salfiya Ummah- Hall 5
Observer Hall-5
H5-Cristian Spătaru...
H5-Cristian Spătaru
Toplantı - HALL 6
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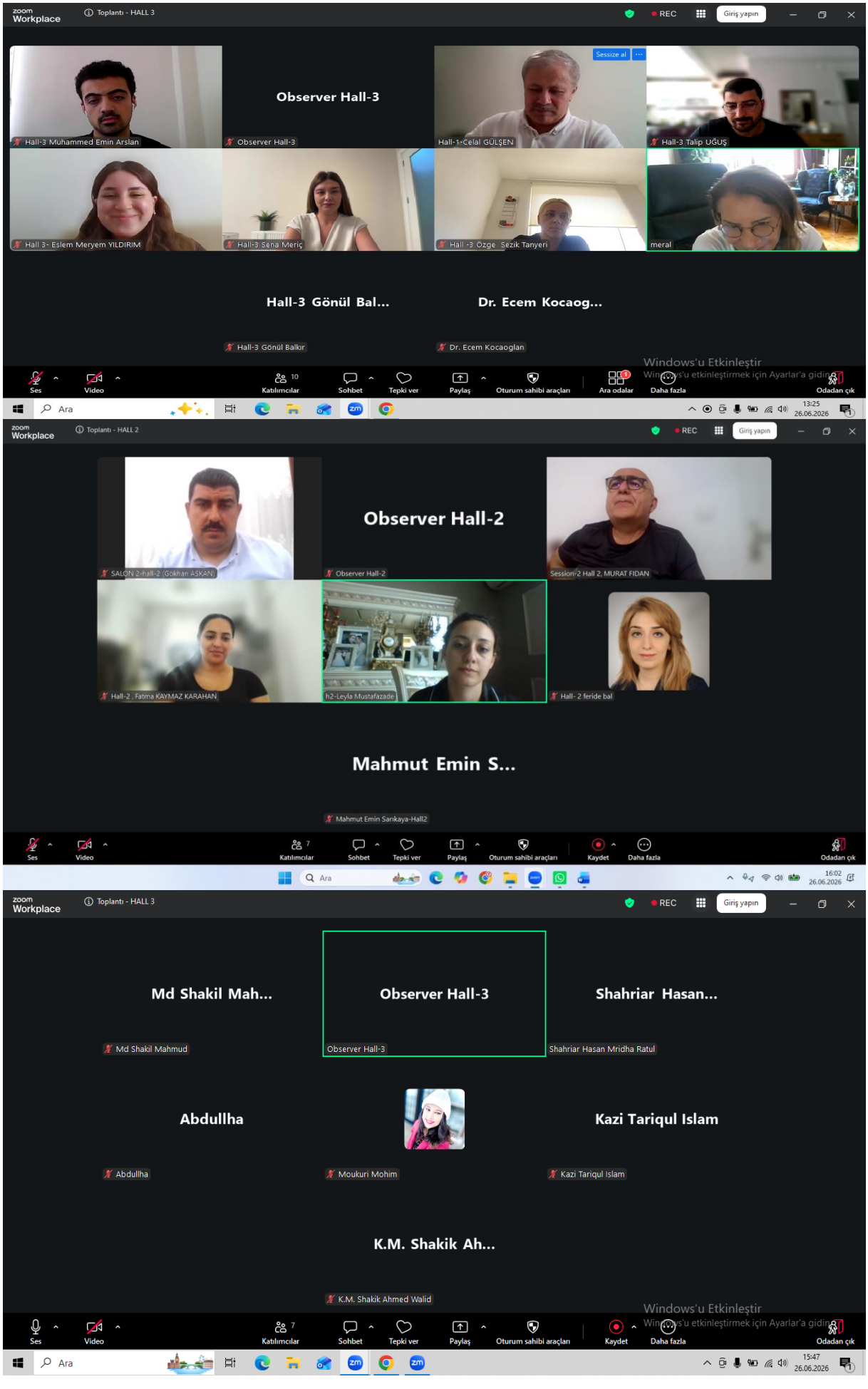
Observer Hall-6
Ghulam Ahmad Raza, Hall-6
Observer Hall-6
Hall 6 Jimada Abdulrahman


Observer hall-1
19th EJONS INTERNATIONAL CONGRESS
"Scientific Research and Recent Developments"
25–27 June 2026 / Istanbul
Investigation of the *In Vitro* Cytotoxic and Apoptotic Effects of Thymoquinone-Loaded PLGA Nanoparticles in U87MG Glioblastoma Cells
Şevval İnci URUN
Undergraduate Student
Supervisor:
Fatma Şayan POYRAZ, PhD
Research Assistant
Department of Molecular Biology and Genetics, Yıldız Technical University
This work was supported by Yıldız Technical University Scientific Research Projects Coordination Unit under project number FBG-2025-6800.
BAPSİS


Observer hall-1
19. EJONS ULUSLARARASI KONGRESİ
Bilimsel Araştırmalar ve Güncel Gelişmeler
25 - 25 Haziran 2026
İSTANBUL
OLEİK ASİT KAPLI MANYETİK NANO-KATALİZÖRÜ KULLANILARAK SODYUM BOROHİDRİT METANOLİZİNDEN YÜKSEK VERİMLİ HİDROJEN ÜRETİMİ
HIGH-YIELD HYDROGEN PRODUCTION BY SODIUM BOROHYDRIDE METHANOLYSIS USING OLEIC ACID-COATED MAGNETIC NANO-CATALYST
ALEV DIŞLI*, DOÇ. DR. ADİL UMAZ*, DOÇ. DR. MEHMET ŞAKİR ECE*
*Mardin Artuklu Üniversitesi, Lisansüstü Eğitim Enstitüsü, Mardin, Türkiye,
Mardin Artuklu Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Mardin, Türkiye,
Mardin Artuklu Üniversitesi, Sağlık Hizmetleri Meslek Yüksekokulu, Mardin, Türkiye.


Observer Hall-2
Hall-2, Dinçer Atasoy
Observer Hall-2
Hall-2, Nuri YIKILMAZ
Hall-2 munevverkimsesiz
Hall-2 Sudenaz Kuş
Hall-2 Esma Begüm Demir
Serra Mete
Hall-2 Eda Eylül Özdemir
H2 Fırat Birginal
ali
Hall 2-Güneş Ekim
Nil hall2


Toplantı - HALL 3
Observer Hall-3
Hall-3 Muhammed Emin Arslan
Observer Hall-3
Hall-1-Celal GÜLŞEN
Hall-3 Talip UĞUŞ
Hall 3- Eşlem Meryem YILDIRIM
Hall-3 Sena Meriç
Hall -3 Özge Sezik Tanyeri
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Dr. Ecem Kocaog...
Hall-3 Gönül Balkır
Dr. Ecem Kocaoglan
Toplantı - HALL 2
Observer Hall-2
SALON 2-hall-2 (Gökhan ASKAN)
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Session-2 Hall 2, MURAT FIDAN
Hall-2 , Fatma KAYMAZ KARAHAN
h2-Leyla Mustafazade
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Mahmut Emin Sarikaya-Hall2
Toplantı - HALL 3
Md Shakil Mah...
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Shahriar Hasan...
Md Shakil Mahmud
Observer Hall-3
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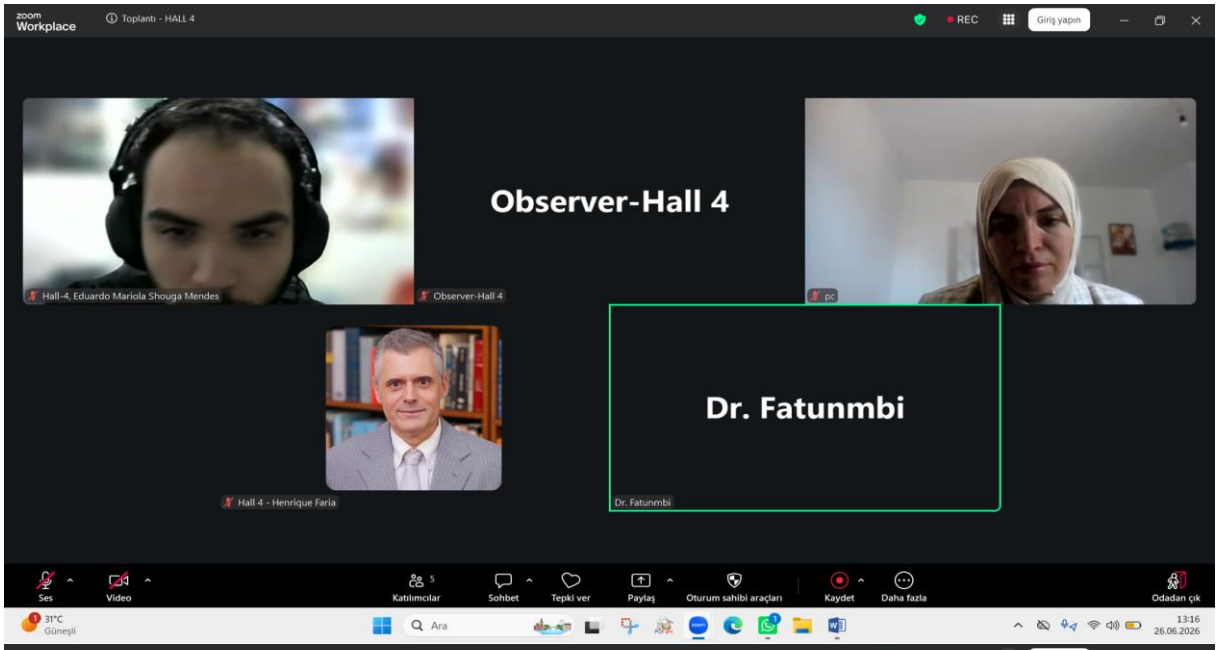
K.M. Shakik Ahmed Walid


Toplantı - HALL 4
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Hall-4, Eduardo Mariola Shouga Mendes
Observer-Hall 4
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Hall 4 - Henrique Faria
Dr. Fatunmbi
Dr. Fatunmbi
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Video
Katılımcılar
Sohbet
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Paylaş
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Kaydet
Daha fazla
Odadan çık


Toplantı - HALL 5
REC
Giriş yapın
Observer Hall-5
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Hall-5 Siti Nasyrah Annadzirah
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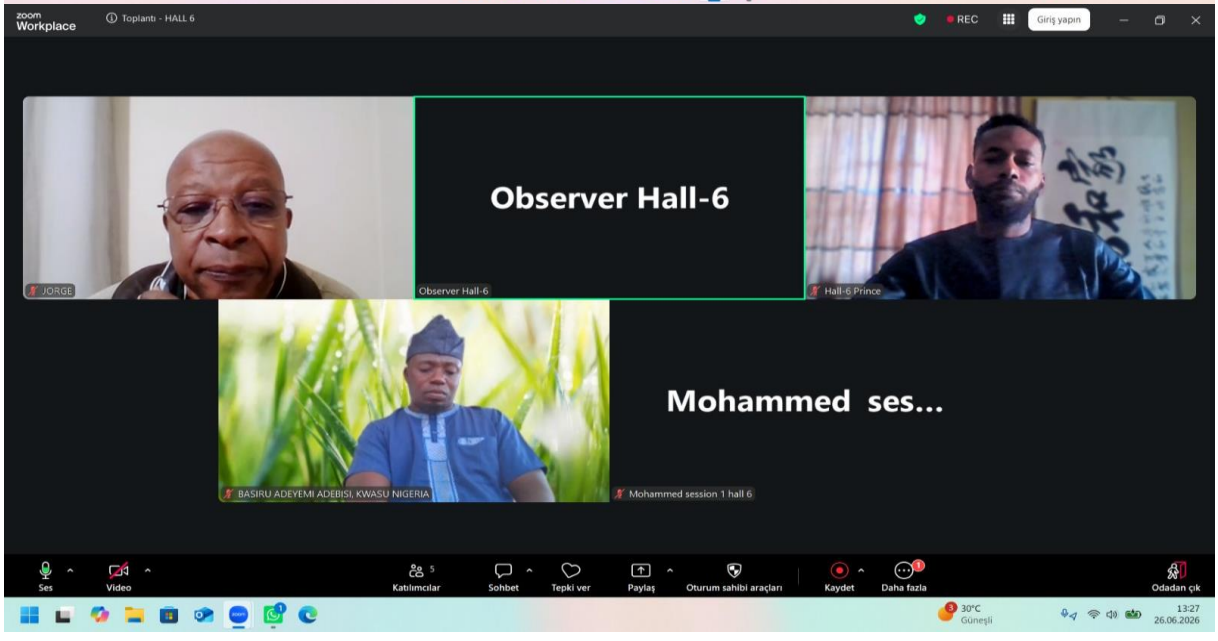
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JORGE
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Hall-6 Prince
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Mohammed session 1 hall 6
Ses
Video
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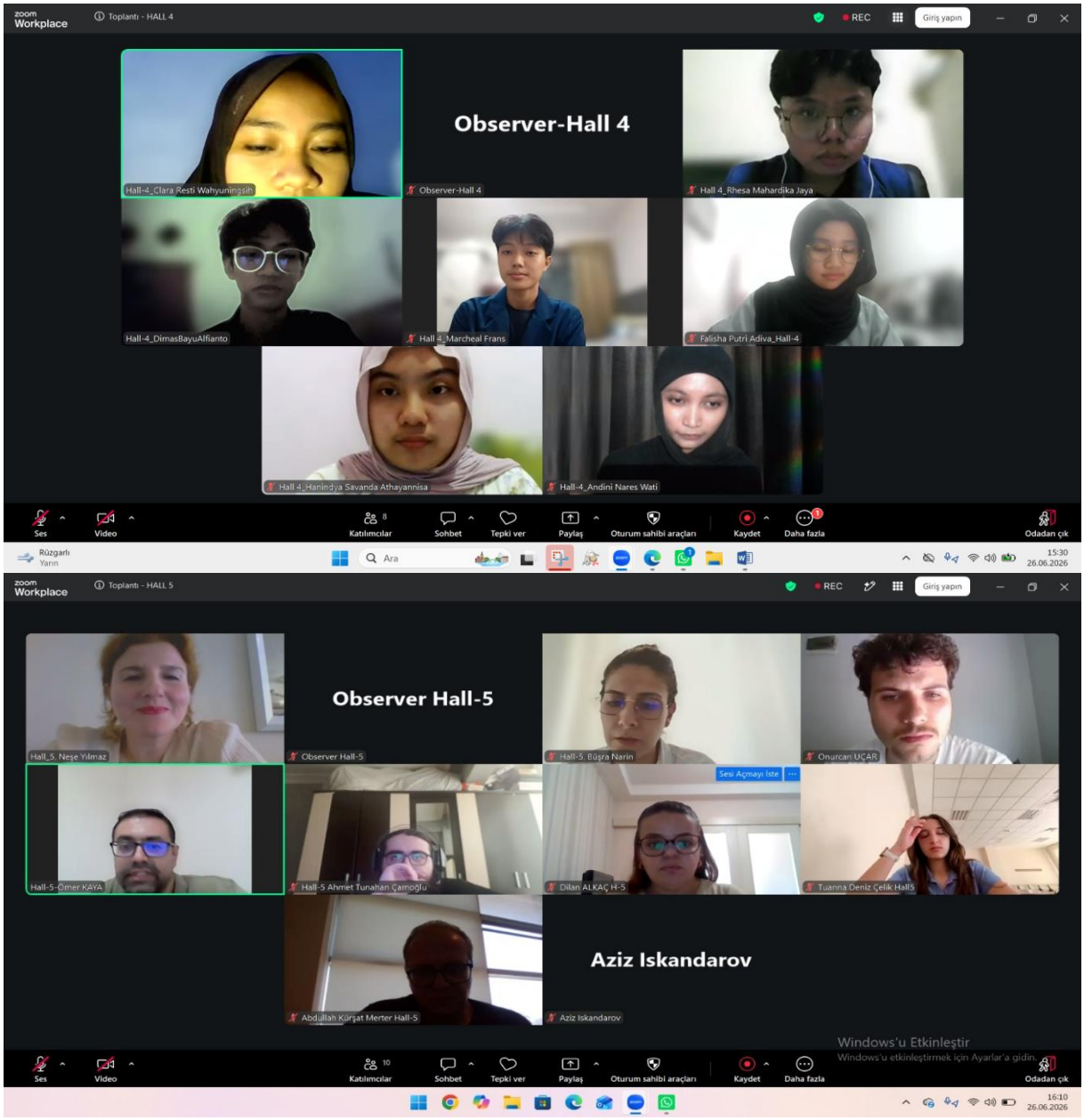
Kaydet
Daha fazla
Odadan çık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Toplantı - HALL 4
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Observer-Hall 4
Hall-4_Clara Resti Wahyuningsih
Observer-Hall 4
Hall 4_Rhesa Mahardika Jaya
Hall-4_DimasBayuAlfianto
Hall 4_Marcheal Frans
Falisha Putri Adiva_Hall-4
Hall 4_Hanindya Savanda Athayannisa
Hall-4_Andini Nares Wati
Ses
Video
Katılımcılar
Sohbet
Tepki ver
Paylaş
Oturum sahibi araçları
Kaydet
Daha fazla
Odadan çık
Rüzgarlı
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Ara
15:30
26.06.2026
zoom Workplace
Toplantı - HALL 5
REC
Giriş yapın
Observer Hall-5
Hall_5. Neşe Yılmaz
Observer Hall-5
Hall-5. Büşra Narin
Onurcan UÇAR
Hall-5-Ömer KAYA
Hall-5 Ahmet Tunahan Çamoğlu
Sesi Açmayı İste
Dilan ALKAÇ H-5
Tuanna Deniz Çelik Hall5
Abdullah Kürşat Merter Hall-5
Aziz Iskandarov
Aziz Iskandarov
Windows'u Etkinleştir
Windows'u etkinleştirmek için Ayarlar'a gidin.
Ses
Video
Katılımcılar
Sohbet
Tepki ver
Paylaş
Oturum sahibi araçları
Kaydet
Daha fazla
Odadan çık
16:10
26.06.2026

TABLE OF CONTENTS

Author(s)	Topic Title	No
Faton MORINA Valbon BYTYQI	CATALOGS AS A TOOL FOR TOURISM PROMOTION - CASE MUNICIPALITY OF PRIZREN	50
Janet Iyabode OWOLABI	ATTITUDES, READINESS, AND BARRIERS TO CYBERSECURITY PRACTICES AMONG BUSINESS EDUCATION STUDENTS IN NIGERIAN TERTIARY INSTITUTIONS	51
María Cruz CUEVAS ÁLVAREZ	ACADEMIC FREEDOM OR FREEDOM IN TEACHING TECHNIQUES? THAT IS THE QUESTION. THE REALITY OF LATIN AMERICA AND THE INTERNATIONALIZATION OF THE CURRICULUM	52
Musa MOHAMMED Ahmed Abdullahi BARKUTA Jimada ABDULRAHMAN	PERCEIVED IMPACT OF EARLY MARRIAGE ON EDUCATIONAL ATTAINMENT AMONG ADOLESCENTS IN BOSSO LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA	53
Mohd Shahbaz KHAN Sameer Babu M	CHILDREN LEARNING IN CONFLICT AND WAR: A SYSTEMATIC REVIEW OF TRAUMA, RECOVERY, AND EDUCATION	54
Faseela T Mohammad TANWEER	"FEASIBILITY OF TEACHING ORGANIC REACTION MECHANISM" THROUGH VARIOUS PEDAGOGIC STRATEGIES: PERCEPTION OF SELECT TEACHERS	55
Nedeljko M. MILANOVIĆ	SINGLE PARENTS OF YOUNGER PRIMARY SCHOOL CHILDREN IN THE WORLD OF THE CONTEMPORARY SCHOOL	56
Merve ERDEM	WHAT IS INFORMED CONSENT, AND WHAT IS NOT? A CONCEPTUAL FRAMEWORK IN THE CLINICAL CONTEXT	57
Banu BAŞ Hande ÇAKIROĞLU	ANALYSIS OF EAR IMPRESSION TAKING VIDEOS ON YOUTUBE IN TERMS OF AUDIOLOGICAL APPLICATIONS AND QUALITY ASSESSMENT	58
Sadettin DEMİREL İpek Nazlı SINAG	BENEFICIAL EFFECTS OF BETAINE AND L-CARNITINE ON CARDIOVASCULAR RISK FACTORS ASSOCIATED WITH METABOLIC SYNDROME	60
Sadettin DEMİREL İpek Nazlı SINAG	THE ROLE OF NEUROPEPTIDES IN THE PATHOGENESIS OF HYPERTENSION	61
Oğuzhan AKBAŞ Yasemin BİLİR Alperen KALYONCU	ALVEOLAR RIDGE RECONSTRUCTION USING THE KHOURY TECHNIQUE	62
Yasemin BİLİR Oğuzhan AKBAŞ Alperen KALYONCU	PRF-ASSISTED SIMULTANEOUS LATERAL SINUS FLOOR ELEVATION AND AUTOGENOUS SYMPHYSIS BLOCK GRAFTING FOR VERTICAL AND HORIZONTAL BONE AUGMENTATION IN A SEVERELY ATROPHIC POSTERIOR MAXILLA	63
Nuran AKYURT	EXAMINATION OF VR-SUPPORTED BREAST HEALTH EDUCATION IN MEDICAL IMAGING TECHNICIAN TRAINING	64
Nuran AKYURT	EVALUATION OF VIRTUAL REALITY AND ARTIFICIAL INTELLIGENCE-SUPPORTED BREAST HEALTH AND BREAST SELF-EXAMINATION EDUCATION IN TERMS OF PARTICIPANT SATISFACTION AND PERCEIVED LEARNING OUTCOMES	65
Zeynep Sude BAYRAKTAR Cüneyt AYDIN	SELECTION OF THE OPTIMAL 3D DEFORMATION MODEL BASED ON INFORMATION CRITERIA	66
Eyüp BULANIKLI Cüneyt AYDIN	STOCHASTIC NOISE ANALYSIS IN TURKEY CORS GNSS STATIONS USING AUTOREGRESSIVE MODELS	67
Seyyid Burhaneddin Muhammed ŞAHBAZ Ramazan Cüneyt ERENOĞLU	3D DEFORMATION ANALYSIS USING GNSS CAMPAIGN MEASUREMENTS AND AI-ASSISTED PREDICTIVE MODELING	69
Sajedeh NOROZPOUR Alireza Arshadi KHAMSE	THE IMPACT OF MATHEMATICAL SIMULATION TOOLS ON ACADEMIC PRACTICES: A PLS-SEM APPROACH	71

Author(s)	Topic Title	No
Samir MERADI Hela DIOUANI Naima LABIAD	DIGITAL MARKETING FATIGUE IN THE AGE OF CONTINUOUS ONLINE ADVERTISING: EXPLORING ITS IMPACT ON CONSUMER WELL-BEING	162
Ketema ALEMU Tamrat TESFAYE Serkalem ABNEW Karthikeyan RAJAN	UNDERSTANDING CUSTOMER PREFERENCES IN SHOE SOLE DESIGN: A COMPREHENSIVE STUDY ON MATERIAL, COMFORT, AND MARKET TRENDS	163
Herman Anwar ENRE Siti Nasyrah ANNADZIRAH	DIGITAL PUBLIC RELATIONS STRATEGY IN INDONESIAN HIGHER EDUCATION INSTITUTIONS FOR STRENGTHENING PUBLIC TRUST AND EDUCATIONAL COMMUNICATION IN THE DIGITAL ERA	164
Ibrahim ABUBAKAR Daniel MARCEL	IMPACT OF BANK CHARACTERISTICS ON FINANCIAL PERFORMANCE OF SELECTED DEPOSIT MONEY BANKS IN NIGERIA	165
Elizabeth Ometere OMAKU S. N. ZUBAIRU	AN APPRAISAL OF PASSIVE FIRE PROTECTION DEFECTS IN PUBLIC OFFICE BUILDINGS OF ABUJA, NIGERIA	166
Kanu-Ikoku Prince U. P. B. HARUNA B. M. LAWAL S. B. AHMED	THERMAL PERFORMANCE OF A CLIMATE-RESPONSIVE DATA CENTRE IN ABUJA, NIGERIA	167
Mahsa HOSEINI	DESIGN STRATEGIES FOR EQUESTRIAN COMPLEXES BASED ON TOURISM DEVELOPMENT	168
Mohammed WAHEEB Amal Kamal KANANI	DAMIYAH: FROM ADAM'S DESCENT TO THE HUMAN JOURNEY	169
Jorge Ferreira FRANCO	3D INFORMATION PRODUCTION AND VISUALIZATION TECHNOLOGIES FOR INSTIGATING CITIZENS' READING AND WRITING AND DIGITAL EDUCATION PROCESSES	170
Tran Huu THANG Nguyen Thi LUA	PROMOTING CULTURAL VALUES OF AN XUAN VILLAGE, HUE CITY, IN ASSOCIATION WITH SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION	171
Basiru Adeyemi ADEBISI	BIOPHILIC DESIGN FORMS IN THE STAGE PRODUCTION OF FEMI OSOFISAN'S FOREST OF PROMISED HARM	172
Tolga ÖZEL Gökhan KÖK Yeşim Gül SALMAN	SYNTHESIS AND CHARACTERIZATION OF TWO NOVEL THIO-GLUCOSE DERIVATIVES FOR GOLD GLYCONANOPARTICLE AND GLYCONANOTECHNOLOGY APPLICATIONS	173
Alper YARDAN	THEORETICAL INVESTIGATION OF THE ELECTRONIC, REACTIVE, AND SPECTROSCOPIC PROPERTIES OF A BULKY SCHIFF BASE LIGAND VIA DENSITY FUNCTIONAL THEORY (DFT)	175
Alper YARDAN	COMPARATIVE HIRSHFELD SURFACE ANALYSIS OF THE SOLID-STATE SUPRAMOLECULAR INTERACTIONS OF A STERICALLY HINDERED SCHIFF BASE LIGAND AND ITS NICKEL(II) COMPLEX	176
Alev DİŞLİ Adil UMAZ Mehmet Şakir ECE	HIGH-YIELD HYDROGEN PRODUCTION BY SODIUM BOROHYDRIDE METHANOLYSIS USING OLEIC ACID-COATED MAGNETIC NANO-CATALYST	177
Seyda AYDOGDU	THEORETICAL INSIGHTS INTO THE ELECTRONIC AND SPECTROSCOPIC PROPERTIES OF CLOTHIANIDIN	178
Halil MUTLUBAŞ Ataç UZEL Gözde DUMAN Mehmet Kadri BOZOKALFA Jale YANIK	SEED COATING WITH BACTERIA-INOCULATED BIOCHAR	179
Feride BAL	THE DARK SIDE OF DIGITAL TRANSFORMATION IN FAMILY BUSINESSES: THE MEDIATING ROLE OF INTERGENERATIONAL CONFLICT IN THE EFFECT OF DIGITALIZATION PRESSURE ON DIGITAL BURNOUT	180

Author(s)	Topic Title	No
Achmad Rajwa Alamsyah MARCHIO Ahmad Rizky SUBHANSYAH Zalfa GHAISANI	THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND TAX AVOIDANCE	201
Clara Resti WAHYUNINGSIH Andini Nares WATI	THE ECONOMIC CONSEQUENCES OF INDONESIA WITHOUT THE TAXATION SECTOR	202
Dimas Bayu ALFIANTO Rhesa Mahardika JAYA Marcheal FRANS	THE ROLE OF TAXES IN INDONESIA'S NATIONAL DEVELOPMENT IN FACING GLOBAL ECONOMIC UNCERTAINTY IN 2026	203
Dilan ALKAÇ	THE TRANSFORMATION OF THE LABOR MARKET IN THE AGE OF ARTIFICIAL INTELLIGENCE: ECONOMIC IMPACTS AND FUTURE PERSPECTIVES	205
Dilan ALKAÇ	THE IMPACT OF GLOBAL FOOD CRISES ON AGRICULTURAL TRADE	206
Emine KAYA Ömer KAYA	GOLD MARKET ANOMALIES FROM A BEHAVIORAL FINANCE PERSPECTIVE: A SYSTEMATIC REVIEW OF THE IMPACT OF INVESTOR PSYCHOLOGY ON PRICING DURING CRISIS PERIODS	207
Vuqar NAZAROV Aziz ISKANDAROV	ACTUAL PROBLEMS OF THE FUNCTIONING OF INVESTMENT MECHANISMS IN THE MARKET OF SECURITIES IN THE REPUBLIC OF AZERBAIJAN	209
Abdullah Kürşat MERTER Tuana Deniz ÇELİK	WILL PREDICTIVE ARTIFICIAL INTELLIGENCE OR ENIGMATIC HUMAN INTELLIGENCE WIN IN BUSINESS?	210
Büşra NARİN Gözde MERT	THE MODERATING ROLE OF JOB INSECURITY ON THE IMPACT OF AI CONCERNS ON INNOVATIVE WORK BEHAVIOR IN THE SERVICE SECTOR	212
Ahmet Tunahan ÇAMOĞLU Ali KAHRAMANOĞLU	USER RESPONSES TO IN-APP PURCHASE TYPES: A COMPARATIVE LITERATURE REVIEW	213
Onurcan UÇAR Seval ENE YALÇIN	ARTIFICIAL INTELLIGENCE-BASED REVERSE FLOW FORECASTING IN CIRCULAR SUPPLY CHAINS	214
Shanza KHANUM Muhammad ASAD	PROTECTIVE ROLE OF SILVIDORA PROCEIA AGAINST HISTOPATHOLOGICAL DAMAGE OF GREEN-SYNTHESIZED SILVER NANOPARTICLES IN LABEO ROHITA	215
Abed ZOULIKHA Lachabi ABDELHADI Laid ABDELALI	ELECTRONIC STRUCTURE AND STRUCTURAL STABILITY OF $TL_{1-x}B_xP$ ALLOYS: A FIRST-PRINCIPLES STUDY WITH SPIN–ORBIT COUPLING	216
Elona SHLLAKU Arieta CAMAJ IBRAHIMI	ASSESSMENT OF MYCOTOXIN RISK IN MILK: FROM ANIMAL FEED TO AFLATOXIN M1 (AFM1)	217
Abderrazzak IHOUATEN Khadija EL-MOUSTAQIM Jamal MABROUKI	IOT ENABLED WASTEWATER MONITORING AND ENVIRONMENTAL PROTECTION	218
MUHAMMAD FAISAL	MULTI-MODAL DEEP LEARNING AND SENSOR FUSION FOR INTELLIGENT MARITIME SECURITY: ENHANCING BORDER PROTECTIONS VIA GLOBAL MARINE DATA AGGREGATIONS	219

NUTRİGENETİK PERSPEKTİFİNDEN KİSTİK FİBROZİS VE BESLENME YÖNETİMİ

CYSTIC FIBROSIS AND NUTRITIONAL MANAGEMENT FROM THE NUTRIGENETIC PERSPECTIVE

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Özet
Kistik fibrozis (KF), Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) genindeki mutasyonlardan kaynaklanan otozomal resesif bir hastalıktır ve bireylerde sindirim, solunum ve diğer sistemleri etkileyen ciddi komplikasyonlara neden olur. Bu derleme, kistik fibrozis ile nutrigenetik arasındaki ilişkiyi incelemeyi amaçlamaktadır. Kistik fibrozis hastalarında genetik varyasyonlar, besin emilimi, enerji metabolizması ve bireyselleştirilmiş diyet planlamasında kritik bir rol oynamaktadır. Nutrigenetik, genetik varyasyonlara dayalı beslenme müdahalelerinin tasarlanmasına olanak tanır ve bu hastalarda beslenme tedavisini optimize etmek için güçlü bir araç sunar. Derlemede, kistik fibrozis hastalarında beslenme yetersizliklerinin nedenleri, genetik faktörlerin bu durum üzerindeki etkileri ve nutrigenetik temelli tedavi yaklaşımları ele alınmıştır. Ayrıca, bu alandaki güncel araştırmalar ve gelecekteki potansiyel tedavi stratejileri tartışılmıştır. Sonuç olarak, kistik fibrozis tedavisinde nutrigenetik uygulamaların hastalık yönetimini iyileştirebileceği ve bireyselleştirilmiş sağlık hizmetleri için önemli bir fırsat sunduğu vurgulanmıştır.
Anahtar Kelimeler: Bireyselleştirilmiş beslenme; CFTR gen, genetik varyasyon; kistik fibrozis; nutrigenetik

Abstract
Cystic fibrosis (CF) is an autosomal recessive disorder caused by mutations in the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) gene, leading to severe complications affecting the digestive, respiratory, and other systems in individuals. This review aims to explore the relationship between cystic fibrosis and nutrigenetics. Genetic variations in cystic fibrosis patients play a critical role in nutrient absorption, energy metabolism, and individualized diet planning. Nutrigenetics enables the design of nutritional interventions based on genetic variations and offers a powerful tool for optimizing nutrition therapy in these patients. The review discusses the causes of nutritional deficiencies in cystic fibrosis patients, the impact of genetic factors on this condition, and nutrigenetics-based treatment approaches. Additionally, current research in this field and potential future therapeutic strategies are addressed. In conclusion, it is emphasized that the application of nutrigenetics in cystic fibrosis treatment could improve disease management and offer an important opportunity for personalized healthcare.
Keywords: Cystic fibrosis; CFTR gene; genetic variation; nutrigenetics; personalized nutrition;

KANSER HÜCRELERİNDE MİTOKONDRİYAL DEĞİŞİKLİKLER - OKSİDATİF STRES VE APOPTOZ

MITOCHONDRIAL CHANGES IN CANCER CELLS - OXIDATIVE STRESS AND APOPTOSIS

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Abstract
Cancer is a complex disease characterized by mitochondrial dysfunction, oxidative stress, and dysregulated apoptotic pathways. Cancer cells adapt to oxidative stress and evade apoptosis through alterations in mitochondrial function and energy metabolism. Low levels of reactive oxygen species (ROS) promote tumor cell proliferation, whereas excessive ROS accumulation induces DNA damage and cell death. To survive under oxidative stress conditions, cancer cells activate antioxidant defense systems and metabolic adaptation mechanisms.
Conventional cancer therapies, including chemotherapy, radiotherapy, and immunotherapy, primarily aim to eliminate tumor cells and inhibit disease progression. In recent years, nutrition-based metabolic interventions have emerged as complementary strategies for cancer prevention and treatment.
Ketogenic diets, fasting-related nutritional approaches, and antioxidant-rich dietary interventions may disrupt the metabolic flexibility of cancer cells and suppress tumor growth.
Advances in nutrition and dietetics may contribute to more personalized and integrative cancer treatment approaches. However, the effectiveness of these nutritional strategies may vary depending on cancer type, tumor metabolism, and patient-specific factors, emphasizing the importance of individualized nutritional interventions. Future therapeutic models integrating nutritional therapies with genetic and epigenetic profiling may provide novel perspectives in cancer management.
Keywords: Cancer, Mitochondrial Dysfunction, Oxidative Stress, Apoptosis, Nutrition, Ketogenic Diet

Özet
Kanser, mitokondriyal değişiklikler, oksidatif stres ve apoptoz mekanizmalarındaki bozulmalar ile karakterize edilen kompleks bir hastalıktır. Kanser hücreleri, mitokondriyal disfonksiyon ve enerji metabolizmasında değişiklikler yaparak oksidatif stresin etkilerini yönetir ve apoptozdan kaçar. Reaktif oksijen türleri (ROS), düşük seviyelerde tümör hücrelerinin proliferasyonunu desteklerken, yüksek seviyelerde DNA hasarına yol açarak hücre ölümüne neden olabilir. Ancak, kanser hücreleri antioksidan sistemlerini aktive ederek oksidatif hasardan korunabilir.
Geleneksel kanser tedavileri olan kemoterapi, radyoterapi ve immünoterapi, tümör hücrelerini hedef alarak hastalığın ilerlemesini yavaşlatmayı amaçlar. Ancak, beslenme ve metabolik temelli yaklaşımlar da kanserin önlenmesi ve tedavisinde önemli bir tamamlayıcı strateji olarak değerlendirilmektedir. Ketojenik diyet, oruç temelli beslenme ve antioksidan destekli diyet modelleri, kanser hücrelerinin metabolik adaptasyonlarını bozarak tümör büyümesini baskılayabilir. Sonuç olarak, beslenme ve diyetetik alanındaki gelişmeler, kanser tedavisinin daha kişiselleştirilmiş ve bütüncül bir yaklaşımla ele alınmasını sağlayabilir. Ancak, bu yöntemlerin her kanser türü için aynı etkiyi göstermeyeceği göz önünde bulundurulmalı ve bireyselleştirilmiş beslenme stratejileri geliştirilmelidir. Gelecekte, beslenme temelli tedavi yaklaşımlarının genetik ve epigenetik analizlerle desteklenmesi, kanserle mücadelede yeni bir perspektif sunabilir.
Anahtar Kelimeler: Kanser, Mitokondriyal Değişiklikler, Oksidatif Stres, Apoptoz, Beslenme, Ketojenik Diyet

THE EFFECT OF PERSONALIZED MEDITERRANEAN DIET INTERVENTION ON GUT MICROBIOTA AND ANTHROPOMETRIC PARAMETERS IN INDIVIDUALS WITH OBESITY: A DIETITIAN-LED PILOT STUDY

OBEZİTELİ BİREYLERDE KİŞİSELLEŞTİRİLMİŞ AKDENİZ DİYETİ MÜDAHALESİNİN BAĞIRSAK MİKROBİYOTASI VE ANTROPOMETRİK PARAMETRELER ÜZERİNE ETKİSİ: DİYETİSYEN TAKİPLİ BİR PİLOT ÇALIŞMA

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Abstract

The relationship between obesity and gut microbiota has attracted increasing attention due to its potential role in metabolic health. This pilot study aimed to evaluate the effects of a personalized Mediterranean diet intervention on gut microbiota composition and anthropometric parameters in individuals with obesity. The study was conducted at the EASO Collaborating Center for Obesity Management at Istanbul University-Cerrahpaşa Cerrahpaşa Faculty of Medicine. Eleven individuals with obesity (6 females and 5 males; mean age: 31 years; mean BMI: 35 kg/m²) participated in the study. Baseline stool samples were collected and analyzed using Nanopore long-read sequencing technology. Based on individual microbiota profiles, participants received a personalized Mediterranean diet intervention planned and monitored by a dietitian for three months. The intervention emphasized increasing dietary fiber intake and diversity, promoting the consumption of polyphenol-rich foods, improving dietary fat quality, reducing ultra-processed food consumption, and encouraging sustainable dietary habits. Anthropometric measurements and gut microbiota profiles were assessed before and after the intervention. At the end of the intervention, significant reductions were observed in body weight, body mass index (BMI), and waist-to-height ratio. BMI decreased by 8.73% (p=0.000), while waist-to-height ratio decreased by 6.32% (p=0.002). Significant increases were observed in several bacterial genera associated with metabolic health and short-chain fatty acid production, including Acetobacterium, Lawsonibacter, Intestinimonas, Kineothrix, Angelakisella, and Pseudoflavonifractor. Post-intervention microbiota profiles demonstrated greater similarity to those of healthy controls.

Furthermore, participants with higher adherence to the Mediterranean diet exhibited more pronounced improvements in both anthropometric and microbiota-related outcomes. In conclusion, a personalized Mediterranean diet intervention combined with regular dietitian follow-up may positively influence both gut microbiota composition and anthropometric parameters in individuals with obesity. These findings support the potential role of dietitian-led personalized nutrition strategies in obesity management and highlight the importance of microbiota-oriented dietary approaches.
Keywords: Obesity, Gut Microbiota, Mediterranean Diet, Personalized Nutrition, Dietitian Follow-up

Özet

Obezite ile bağırsak mikrobiyotası arasındaki ilişki, metabolik sağlık üzerindeki olası etkileri nedeniyle son yıllarda giderek daha fazla ilgi görmektedir. Bu pilot çalışmanın amacı, kişiselleştirilmiş Akdeniz diyeti müdahalesinin obez bireylerde bağırsak mikrobiyotası kompozisyonu ve antropometrik parametreler üzerindeki etkilerini değerlendirmektir.
Çalışma, İstanbul Üniversitesi-Cerrahpaşa Cerrahpaşa Tıp Fakültesi bünyesinde faaliyet gösteren EASO Obezite Yönetimi İş Birliği Merkezi'nde yürütülmüştür. Çalışmaya obezite tanılı 11 birey (6 kadın, 5 erkek; ortalama yaş: 31 yıl; ortalama BKİ: 35 kg/m²) dahil edilmiştir. Başlangıçta katılımcılardan dışkı örnekleri alınmış ve Nanopore uzun okuma dizileme teknolojisi kullanılarak analiz edilmiştir. Mikrobiyota bulguları doğrultusunda katılımcılara, bir diyetisyen tarafından planlanan ve üç ay boyunca takip edilen kişiselleştirilmiş Akdeniz diyeti uygulanmıştır. Müdahale sürecinde diyet lifi alımının ve çeşitliliğinin artırılması, polifenolden zengin besinlerin tüketilmesi, yağ kalitesinin iyileştirilmesi, ultra işlenmiş gıda tüketiminin azaltılması ve sürdürülebilir beslenme alışkanlıklarının geliştirilmesi hedeflenmiştir. Antropometrik ölçümler ve bağırsak mikrobiyotası profilleri müdahale öncesi ve sonrasında değerlendirilmiştir.
Müdahale sonunda vücut ağırlığı, beden kitle indeksi (BKİ) ve bel-boy oranında anlamlı azalmalar gözlenmiştir. BKİ'de %8,73 (p=0,000), bel-boy oranında ise %6,32 (p=0,002) oranında azalma saptanmıştır. Ayrıca metabolik sağlık ve kısa zincirli yağ asidi üretimi ile ilişkili olan Acetobacterium, Lawsonibacter, Intestinimonas, Kineothrix, Angelakisella ve Pseudoflavonifractor cinslerinde anlamlı artışlar belirlenmiştir. Müdahale sonrası mikrobiyota profillerinin sağlıklı bireylerin profillerine daha fazla benzerlik gösterdiği görülmüştür. Bunun yanı sıra, Akdeniz diyetine uyumu daha yüksek olan katılımcıların hem antropometrik göstergelerde hem de mikrobiyota ile ilişkili parametrelerde daha belirgin iyileşmeler gösterdiği saptanmıştır.
Sonuç olarak, düzenli diyetisyen takibi ile desteklenen kişiselleştirilmiş Akdeniz diyeti müdahalesi, obez bireylerde hem bağırsak mikrobiyotası kompozisyonunu hem de antropometrik sonuçları olumlu yönde etkileyebilir. Bu bulgular, obezite yönetiminde diyetisyen liderliğinde yürütülen kişiselleştirilmiş beslenme stratejilerinin potansiyel önemini desteklemekte ve mikrobiyota odaklı beslenme yaklaşımlarının değerini ortaya koymaktadır.
Anahtar Kelimeler: Obezite, Bağırsak Mikrobiyotası, Akdeniz Diyeti, Kişiselleştirilmiş Beslenme, Diyetisyen Takibi

BASKETBOLCULARDA STRES, UYKU KALİTESİ VE BESLENME DURUMU İLİŞKİSİNE GÜNCEL BİR BAKIŞ

A CURRENT PERSPECTIVE ON THE RELATIONSHIP BETWEEN STRESS, SLEEP QUALITY, AND NUTRITIONAL STATUS IN BASKETBALL PLAYERS

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ABSTRACT
Basketball is a dynamic team sport requiring high physical performance, attention, coordination, and rapid decision-making skills. Athletes' success depends not only on their physical capacities but also on the balance between psychological status, sleep patterns, and nutritional habits. Intensive training schedules, competition pressure, and performance expectations may increase stress levels. Unmanaged stress may threaten performance quality, recovery mechanisms, and athlete health. Chronic stress can impair sleep quality, while insufficient sleep negatively affects recovery and athletic performance. Sleep is essential for maintaining hormonal balance, muscle repair, and cognitive functioning. Poor sleep quality may prolong reaction time, reduce attention, and increase injury risk. Nutritional status is both a determinant and a consequence of these processes. Inadequate energy and nutrient intake may impair performance sustainability, whereas stress and sleep disturbances may alter appetite regulation, meal patterns, and food choices. Although studies examining stress, sleep, and nutrition in athletes have increased, research specifically focusing on basketball players remains limited. This review aims to evaluate the relationship between stress, sleep quality, and nutritional status in basketball players based on current literature. Current literature suggests that stress, sleep quality, and nutritional status interact bidirectionally and may collectively influence athletic performance and overall health in basketball players.
Keywords: Basketball, stress, sleep quality, nutritional status, sports nutrition

ÖZET
Basketbol; yüksek fiziksel performans, dikkat, koordinasyon ve hızlı karar verme becerisi gerektiren dinamik bir takım sporudur. Sporcuların başarı düzeyleri yalnızca fiziksel kapasitelerine değil; psikolojik durumları, uyku düzenleri ve beslenme alışkanlıkları arasındaki hassas dengeye de bağlıdır. Yoğun antrenman programları, müsabaka baskısı ve başarı beklentisi sporcularda stres düzeyini artırabilmektedir. Yönetilemeyen stres düzeyleri performans kalitesini, toparlanma mekanizmalarını ve sporcu sağlığını tehdit etmektedir. Kronikleşen stresin uyku kalitesini bozduğu, yetersiz uykunun ise toparlanma sürecini ve sportif performansı olumsuz etkilediği bilinmektedir. Uyku; hormonal dengenin korunması, kas onarımı ve bilişsel işlevlerin sürdürülmesi açısından temel bir gereksinimdir. Yetersiz uyku süresi veya düşük uyku kalitesi sporcularda reaksiyon zamanının uzamasına, dikkat düzeyinin azalmasına ve sakatlık riskinin artmasına neden olabilmektedir. Kalitesiz uyku yalnızca toparlanma sürecini değil, enerji dengesini ve besin seçimlerini de etkileyebilmektedir. Beslenme durumu ise bu süreçlerin hem nedeni hem de sonucu olarak değerlendirilmektedir. Basketbol gibi yüksek enerji gereksinimi olan bir branşta yetersiz enerji ve besin ögesi alımı performansın sürdürülebilirliğini olumsuz etkileyebilmektedir. Bununla birlikte stres ve uyku bozuklukları iştah mekanizmasını, öğün düzenini ve besin tercihlerini de olumsuz etkileyerek düzensiz beslenme davranışlarına yol açabilmektedir. Literatürde sporcularda stres, uyku ve beslenme ilişkisini inceleyen çalışmalar artış gösterse de doğrudan basketbolculara odaklanan araştırmalar sınırlıdır. Bu derleme çalışmada basketbolcularda stres, uyku kalitesi ve beslenme durumu arasındaki ilişkinin güncel literatür doğrultusunda değerlendirilmesi amaçlanmıştır.

Güncel literatür, stres, uyku kalitesi ve beslenme durumunun basketbolcularda karşılıklı etkileşim içinde olduğunu ve bu etkileşimin sportif performans ile genel sağlık üzerinde belirleyici olabileceğini göstermektedir.

Anahtar Kelimeler: Basketbol, stres, uyku kalitesi, beslenme durumu, sporcu beslenmesi

TÜRKİYE'DE YENİLENEBİLİR ENERJİ TÜKETİMİNİN GIDA GÜVENCESİZLİĞİ ÜZERİNDEKİ ETKİSİ: 2001-2023 DÖNEMİ ANALİZİ

THE IMPACT OF RENEWABLE ENERGY CONSUMPTION ON FOOD INSECURITY IN TÜRKİYE: EVIDENCE FROM 2001–2023

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Abstract
Food insecurity is defined as the inability of individuals to access sufficient, safe, and nutritious food on a sustainable basis, and it has become one of the major global challenges affecting both developing and developed countries. Approximately 828 million people worldwide are estimated to suffer from hunger and undernourishment. Factors such as rapid population growth, urbanization, economic development, technological transformation, and climate change increase pressure on limited and non-renewable resources. This situation makes sustainable food production and energy supply increasingly important. In this context, renewable energy resources play a critical role in ensuring environmental sustainability, supporting sustainable development, enhancing energy security, and strengthening food systems. In recent years, the growing global demand for food and energy has increased interest in examining the relationship between food insecurity and renewable energy. The aim of this study is to examine the relationship between renewable energy consumption and food insecurity in Türkiye during the 2001–2023 period through econometric methods. In the study, food insecurity is represented by the indicator "Prevalence of Undernourishment (% of population)." Renewable energy is measured by "Renewable Energy Consumption (% of total final energy consumption)," while "GDP per capita growth (%)" is included as a control variable. First, the stationarity properties of the variables were tested using the Augmented Dickey-Fuller (ADF) unit root test. Since the variables were integrated at different levels, the ARDL bounds testing approach was employed. The findings revealed that the error correction coefficient was negative and statistically significant, indicating a long-run cointegration relationship among the variables. According to the error correction term, nearly 20% of short-run disequilibria are corrected in the following period. The long-run results showed that renewable energy consumption did not have a statistically significant effect on undernourishment. However, GDP per capita growth had a negative and statistically significant effect, indicating that economic growth supports food security. Additionally, a VAR model was established to examine the dynamic relationships among the variables. The results suggest that increases in per capita income reduce undernourishment, whereas the impact of renewable energy consumption remains statistically insignificant.
Keywords: Energy economics, food insecurity, undernourishment, renewable energy consumption

Özet
Gıda güvencesizliği, bireylerin yeterli, güvenli ve besleyici gıdaya sürdürülebilir biçimde erişememesi olarak tanımlanmakta olup günümüzde hem gelişmekte olan hem de gelişmiş ülkeleri etkileyen önemli küresel sorunlardan biri haline gelmiştir. Dünya genelinde yaklaşık 828 milyon insanın açlık ve yetersiz beslenmeden etkilendiği tahmin edilmektedir. Artan dünya nüfusu, kentleşme, ekonomik gelişme, teknolojik dönüşüm ve iklim değişikliği gibi faktörler sınırlı ve yenilenemeyen kaynaklar üzerindeki baskıyı artırmaktadır. Bu durum sürdürülebilir gıda üretimi ve enerji arzı konularını daha da önemli hale getirmektedir. Bu süreçte yenilenebilir enerji kaynakları; çevresel sürdürülebilirliğin sağlanması, sürdürülebilir kalkınmanın desteklenmesi, enerji güvenliğinin artırılması ve gıda sistemlerinin güçlendirilmesi açısından kritik bir rol üstlenmektedir.

Son yıllarda gıda ve enerjiye yönelik küresel talebin artması, gıda güvencesizliği ve yenilenebilir enerji arasındaki ilişkinin incelenmesini gündeme getirmiştir. Bu çalışmanın amacı, Türkiye'de 2001-2023 döneminde yenilenebilir enerji tüketimi ile gıda güvencesizliği arasındaki ilişkiyi ekonometrik yöntemler aracılığı ile incelemektir. Çalışmada gıda güvencesizliğini temsilen yetersiz beslenme göstergesi kullanılmıştır. Yenilenebilir enerji tüketimi değişkeni olarak yenilenebilir enerji tüketiminin toplam enerji tüketimine oranı kullanılmış, kontrol değişkeni olarak ise kişi başına düşen GSYH'nin yıllık büyüme oranı modele dahil edilmiştir. Araştırmada öncelikle değişkenlerin durağanlık özellikleri ADF birim kök testi ile incelenmiştir. Değişkenlerin farklı bütünleşme seviyelerinde olması nedeniyle çalışmada ARDL sınır testi yaklaşımı uygulanmıştır. Yapılan analiz sonucunda, hata düzeltme katsayısının negatif ve istatistiksel olarak anlamlı olduğu tespit edilmiştir. Bu sonuç, değişkenler arasında uzun dönemli eşbütünleşme ilişkisinin olduğunu göstermektedir. Hata düzeltme katsayısına göre kısa dönemde ortaya çıkan dengesizliklerin yaklaşık %20'si bir sonraki dönemde giderilmektedir. Uzun dönem katsayıları incelendiğinde yenilenebilir enerji tüketiminin yetersiz beslenme oranı üzerindeki etkisinin istatistiksel olarak anlamlı olmadığı tespit edilmiştir. Kişi başına düşen GSYH büyüme oranı değişkeni ise negatif çıkmış ve ekonomik büyümenin gıda güvenliğini destekleyici yönde etkide bulunduğu belirlenmiştir. İlave olarak çalışmada değişkenler arasındaki dinamik ilişkileri incelemek amacıyla VAR modeli kurulmuştur. Analiz sonuçlarına göre kişi başına düşen gelirdeki artışın gecikmeli değerinin yetersiz beslenme üzerinde negatif ve istatistiksel olarak anlamlı etkisi olduğu belirlenmiştir. Ancak yenilenebilir enerji tüketiminin yetersiz beslenme üzerindeki etkisinin istatistiksel olarak anlamlı olmadığı görülmüştür. Elde edilen bulgular, Türkiye'de ekonomik büyümenin gıda güvenliğini olumlu yönde etkileyen bir unsur olduğunu ortaya koyarken, yenilenebilir enerji tüketiminin etkisinin ise daha dolaylı ve uzun vadede gerçekleşebileceğini göstermektedir.

Anahtar kelimeler: Enerji ekonomisi, gıda güvencesizliği, yetersiz beslenme, yenilenebilir enerji tüketimi

EV HANIMLARINDA HANE HALKI GIDA GÜVENCESİZLİĞİ VE OBEZİTE RİSKİ

HOUSEHOLD FOOD INSECURITY AND OBESITY RISK AMONG HOUSEWIVES

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Abstract
While food security is a multidimensional concept that refers to individuals' continuous access to sufficient, safe, and nutritious food, deficiencies in this process lead to food insecurity. Today, global economic fluctuations and post-pandemic uncertainties have exacerbated food insecurity. Housewives, who bear the primary responsibility for food procurement within the household, are more vulnerable to the adverse effects of this condition, as they often de-prioritize their own nutrition in favor of the needs of other family members. This phenomenon, defined in the literature as the "food insecurity-obesity paradox," is triggered in low-budget households by housewives shifting toward low-cost but energy-dense foods rich in refined carbohydrates and saturated fats. The reduced consumption of dietary quality components such as fresh fruits, vegetables, and high-quality protein, coupled with overeating behaviors following episodic food shortages and chronic stress, predisposes housewives to an increased body mass index (BMI) and the development of obesity. This review aims to elucidate the cyclical relationship between household food insecurity and obesity risk among housewives in light of the current literature. Consequently, this study is of significant importance as it demonstrates that food insecurity is not merely a problem of undernutrition but rather a critical public health issue that also triggers obesity as a chronic disease, thereby providing a theoretical foundation for future empirical research in this field.
Keywords: Food Insecurity, Obesity Phenotypes, Housewives

Özet
Besin güvencesi, bireylerin yeterli, güvenli ve besleyici gıdaya sürekli erişebilmesini ifade eden çok boyutlu bir kavramken, bu süreçteki yetersizlikler besin güvencesizliğine yol açmaktadır. Günümüzde küresel ekonomik dalgalanmalar ve pandemi sonrası belirsizlikler besin güvencesizliğini artırmıştır. Hane içinde gıda temininden birinci derecede sorumlu olan ev hanımları, aile bireylerinin ihtiyaçları uğruna kendi beslenmelerini arka plana atarak bu durumun olumsuz etkilerine daha fazla maruz kalmaktadır. Literatürde "besin güvencesizliği-obezite paradoksu" olarak tanımlanan bu durum, kısıtlı bütçeye sahip hanelerde ev hanımlarının maliyeti düşük ancak enerji yoğunluğu yüksek, rafine karbonhidrat ve doymuş yağdan zengin besinlere yönelmesiyle tetiklenmektedir. Taze meyve, sebze ve kaliteli protein tüketiminin azalması, dönemsel gıda kısıtlılıklarını izleyen aşırı yeme davranışları ve kronik stres, ev hanımlarında beden kütle indeksinin artmasına ve obezite gelişimine zemin hazırlamaktadır. Bu derleme çalışması, ev hanımlarında hane halkı gıda güvencesizliği ile obezite riski arasındaki olası ilişkiyi güncel literatür ışığında değerlendirmeyi amaçlamaktadır. Sonuç olarak bu çalışma; besin güvencesizliğinin sadece bir yetersiz beslenme sorunu olmadığını, aksine kronik bir hastalık olan obeziteyi de tetikleyen kritik bir halk sağlığı problemi olduğunu göstermesi ve gelecekte bu alanda yapılacak ampirik araştırmalara teorik bir zemin hazırlaması açısından önem taşımaktadır.
Anahtar kelimeler: Besin Güvencesizliği, Obezite Fenotipleri, Ev Hanımları

BEYİN BİYOKİMYASI VE NÖROTRANSMİTTER DÜZENLENMESİNDE BESLENMENİN ROLÜ: MENTAL BOZUKLUKLARDA SEROTONİN VE DOPAMİN

THE ROLE OF NUTRITION IN BRAIN BIOCHEMISTRY AND NEUROTRANSMITTER REGULATION: SEROTONIN AND DOPAMINE IN MENTAL DISORDERS

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Özet
Günümüz zamanındaki mevcut hastalıkların önemli bir bölümünü mental hastalıklar oluşturmaktadır. Bu hastalıkların etiyolojisinde genetik, çevresel ve biyokimyasal faktörlerden ziyade bağırsak mikrobiyotası da oldukça dikkat çekmeye başlamıştır. Bağırsak mikrobiyotası, gastrointestinal sistemdeki mevcut mikroorganizmalardan oluşan bir topluluktur. Merkezi sinir sistemi ile çift yönlü bir iletişim ağı olan mikrobiyota-bağırsak-beyin ekseni aracılığıyla zihinsel sağlığı etkileyebilmektedir. Aynı zamanda bağırsak mikrobiyotası; serotonin, dopamin ve gama-aminobütirik asit (GABA) gibi nöroaktif bileşiklerin üretimini etkileyerek ruh hali, bilişsel işlevler, stres yanıtı, motivasyon ve davranışsal süreçlerin düzenlenmesinde rol oynamaktadır. Özellikle serotoninin büyük bir kısmının bağırsaklarda üretilmesi, bağırsak sağlığı ve ruh sağlığı arasındaki ilişkinin önemini ortaya koymaktadır. Literatürdeki bulgular bağırsak mikrobiyotasındaki değişimlerin şizofreni, anksiyete ve obsesif-kompulsif bozukluk gibi psikiyatrik hastalıkların gelişiminde ve seyrinde rol oynayabileceğini göstermektedir. Beslenme bilimleri, bulaşıcı olmayan hastalıkların önlenmesinde ve ruh sağlığının korunmasında önemli bir rol oynamaktadır. Yapılan çalışmalar omega-3 yağ asitleri, B grubu vitaminler, magnezyum, çinko ve probiyotiklerden zengin beslenme modellerinin ruh sağlığını desteklediği; Akdeniz diyeti gibi sağlıklı diyet örüntülerinin depresif ve anksiyetik semptomların azaltılmasında olumlu etkiler sağlayabileceği bildirilmektedir. Ancak bununla birlikte yapılan çalışmaların önemli bir kısmı gözlemsel nitelikte olduğundan mekanizmaların tam olarak aydınlatılabilmesi için daha kapsamlı araştırmalara ihtiyaç duyulmaktadır. Sonuç olarak bağırsak mikrobiyotası ve beslenme faktörleri ruh sağlığının korunması ve mental hastalıkların yönetilmesinde umut verici hedefler olarak öne çıkmakta, beslenme temelli yaklaşımların mevcut tedavi stratejilerine entegre edilmesi önem kazanmaktadır.
Anahtar kelimeler: Mental hastalıklar, mikrobiyota-bağırsak-beyin ekseni, nörotransmitterler, bağırsak mikrobiyotası, beslenme

Abstract
Mental disorders constitute a significant proportion of the global burden of disease today. In the etiology of these conditions, beyond genetic, environmental, and biochemical factors, the gut microbiota has also gained considerable attention. The gut microbiota is the community of microorganisms residing in the gastrointestinal system, and it can influence mental health through the microbiota–gut–brain axis, a bidirectional communication network with the central nervous system. In addition, the gut microbiota plays a role in regulating mood, cognitive functions, stress response, motivation, and behavioral processes by affecting the production of neuroactive compounds such as serotonin, dopamine, and gamma-aminobutyric acid (GABA). In particular, the fact that a large proportion of serotonin is produced in the gut highlights the importance of the relationship between gut health and mental health. Findings in the literature suggest that alterations in the gut microbiota may play a role in the development and progression of psychiatric disorders such as schizophrenia, anxiety, and obsessive-compulsive disorder. Nutritional sciences play an important role in the prevention of non-communicable diseases and in the maintenance of mental health. Studies report that dietary patterns rich in omega-3 fatty acids, B vitamins, magnesium, zinc, and probiotics support mental health, and that healthy dietary patterns such as the Mediterranean diet may have beneficial effects in reducing depressive and anxiety symptoms.

However, most of the existing studies are observational in nature, and more comprehensive research is needed to fully elucidate the underlying mechanisms. In conclusion, the gut microbiota and nutritional factors emerge as promising targets in the preservation of mental health and the management of mental disorders, and the integration of nutrition-based approaches into current treatment strategies is becoming increasingly important.

Keywords: Mental disorders, microbiota-gut-brain axis, neurotransmitters, gut microbiota, nutrition

YÜKSEK YAĞLI DİYETLERİN FETAL PROGRAMLAMA ÜZERİNDEKİ ETKİLERİ

EFFECTS OF HIGH-FAT DIETS ON FETAL PROGRAMMING

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Özet

Gebelikte annenin yüksek yağlı beslenmesi (HFD), bebeğin erken dönemde hızla kilo almasına ve vücudundaki yağ kütlesinin artmasına neden olur. Bu beslenme şekli, anne vücudunda iltihaba yol açan proinflamatuar sitokinleri harekete geçirir. Annenin yaşadığı insülin direnci ve inflamasyon, kendi yağ dokusunun daha fazla parçalanmasını tetikler. Bunun sonucunda ve annenin diyetindeki yüksek yağ oranı yüzünden (enerjinin %35'inden fazlasının yağdan gelmesi), plasenta yoluyla fetüse geçen serbest yağ asitleri (FFA) ciddi miktarda artar. Hem annenin insülin direnci hem de yüksek yağlı diyet, çocuğun erken yaşlardaki yağ dokusu gelişimi üzerinde oldukça zararlı etkilere sahiptir.Bu metabolik değişimlerin bir sonucu olarak fetüsün aşırı yağa maruz kalması, onun rahimdeki büyüme ve gelişme sürecini doğrudan etkiler. Kandaki lipit artışı ve iltihap; fetüsün karaciğer, yağ dokusu, beyin, iskelet kası pankreas ve böbrek gelişimini bozarak ilerleyen yaşlarda metabolik hastalık yaşama riskini artırır. Ayrıca annenin yüksek yağlı beslenmesi, bebeğin beynindeki açlık ve tokluk merkezini de etkiler. Anne karnında bebeğin hipotalamus bölgesindeki leptin reseptörü, POMC ve nöropeptid Y gibi iştahı düzenleyen yapıların çalışmasını değiştirir. Bununla birlikte, yeme davranışını yöneten dopamin sistemi ile ilişkili genlerin yapısını bozarak gen ifadesini değiştirir. Tüm bu metabolik ve genetik değişimler, fetal metabolik programlama yoluyla günümüzdeki çocukluk çağı obezite salgınının en büyük nedenlerinden birini oluşturur. Gebelikte diyet müdahaleleri yapmak, örneğin doğru yağ asitlerini seçmek ve günlük yağ tüketimini %35'in altında sınırlandırmak, annenin metabolik sağlığını düzeltmenin en etkili yoludur. Hamilelik süresince doğru ve dengeli besin alımı, sonraki nesillerde obezite ve metabolik bozukluk risklerini azaltmadaki temel hedef olmalıdır.

Anahtar kelimeler: beslenme, fetal programlama, gebelik, meternal obezite,yüksek yağlı diyet

Abstact

A maternal high-fat diet (HFD) during pregnancy causes the baby to gain weight rapidly and experience an increase in fat mass at an early stage. This dietary pattern triggers pro-inflammatory cytokines, leading to inflammation in the mother's body. Maternal insulin resistance and inflammation stimulate increased breakdown (lipolysis) in the mother's own adipose tissue. As a result of this, combined with the high fat content in the mother's diet (with over 35% of energy coming from fat), free fatty acids (FFA) crossing through the placenta to the fetus increase significantly. Both maternal insulin resistance and a high-fat diet have highly detrimental effects on the child's early-life adipose tissue development. As a consequence of these metabolic changes, the fetus's exposure to excess fat directly alters its growth and development process in the womb. Elevated blood lipids and inflammation impair the development of the fetal liver, adipose tissue, brain, skeletal muscle, pancreas, and kidneys, thereby increasing the risk of developing metabolic diseases later in life. Additionally, a maternal high-fat diet affects the hunger and satiety centers in the baby's brain. In the womb, it alters the functioning of appetite-regulating structures in the fetal hypothalamus, such as the leptin receptor, POMC, and neuropeptide Y. Furthermore, it modifies gene expression by disrupting the structure of genes associated with the dopamine system, which governs eating behavior. All of these metabolic and genetic changes contribute to today's childhood obesity epidemic through fetal metabolic programming. Implementing dietary interventions during pregnancy, such as choosing the right fatty acids and limiting daily fat consumption to under 35%, is the most effective way to improve maternal metabolic health. Correct and balanced nutrient intake during pregnancy must be the primary target for reducing the risks of obesity and metabolic disorders in future generations.

Keywords: nutrition, fetal programming, pregnancy, maternal obesity, high fat diet

İSTANBUL'DA GÜNEŞ ENERJİSİ POTANSİYELİNİN YAPAY SİNİR AĞLARI İLE REGRESYON ANALİZİ VE SÜRDÜRÜLEBİLİR ŞEHİRLER AÇISINDAN DEĞERLENDİRİLMESİ

REGRESSION ANALYSIS OF SOLAR ENERGY POTENTIAL IN ISTANBUL USING ARTIFICIAL NEURAL NETWORKS AND ITS EVALUATION FOR SUSTAINABLE CITIES

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Abstract
In the recent period of accelerating industrial development, the rate of natural resource depletion and the threat of environmental irreversibility are steadily increasing. During the same period, rapid technological progress and transformation have continuously heightened the need for renewable energy sources. International climate reports agree that continuing fossil fuel production will not allow a safe climate future in the long term. Therefore, policies advocating a transition away from fossil resources are increasingly coming to the forefront. Numerical findings figures out that converting conventional energy demand into sustainable alternatives positively affects the electrical energy efficiency of eco-friendly cities. Within the concept of green cities, the foundation of sustainable living relies on the use of non-fossil resources.
With the support of data mining approaches and thanks to the rapid advancement of artificial intelligence-based modeling techniques, the contributions of solar energy to sustainable systems have been examined using artificial neural networks (ANN) and analyzed through regression methods. In this study, the solar energy capacity of Istanbul, a province that holds considerable renewable energy potential due to its geographical diversity, is evaluated from a sustainability perspective. Opportunities for utilizing solar energy in Istanbul province have been investigated, and the analyses are based on official measurement data covering the years 2023–2026. The dataset includes the following parameters: monthly number of clear days, average relative humidity, average atmospheric pressure, average temperature, total sunshine duration, average wind speed, and monthly total solar radiation intensity.
Using the widely adopted artificial neural network (ANN)-based regression model, monthly total solar radiation intensity was analyzed, and accordingly, the solar energy potential and efficiency level of Istanbul were assessed. The effects of the efficiency results obtained for 6, 12, 24, and 36-month periods on the city's solar energy utilization capacity have been clearly demonstrated. Additionally, the specific contributions of solar energy use in Istanbul are detailed. Within the scope of this paper, the following are presented respectively: literature review, materials and methods, evaluation of Istanbul's energy management performance in terms of sustainability, analyses employing accuracy-enhancing methods with ANN, efficiency regression studies, and final findings.
Keywords: Solar Energy, Renewable Energy, Sustainability, Green Cities, Artificial Neural Networks, Regression Analysis

Özet
Endüstriyel gelişmelerin hızlandığı son dönemde, doğal kaynakların tükeniş hızı ve çevresel geri dönüşümsüzlük tehdidi giderek artmaktadır. Aynı dönemde teknolojik alandaki hızlı ilerleme ve dönüşüm süreci, yenilenebilir enerji kaynaklarına duyulan ihtiyacı da her geçen gün artırmaktadır. Uluslararası iklim raporları, fosil yakıt üretimine devam edilmesi durumunda uzun vadede güvenli bir iklim ortamının mümkün olamayacağı konusunda hemfikirdir. Bu nedenle, fosil kaynaklardan çıkışı öngören politikalar giderek daha fazla gündeme gelmektedir. Elde edilen sayısal bulgular, konvansiyonel yöntemlerle karşılanan enerji gereksiniminin sürdürülebilir alternatiflere dönüştürülmesinin, çevre dostu kentlerin elektrik enerjisi verimliliğini olumlu yönde etkilediğini göstermektedir. Çevreci şehir anlayışı içerisinde, sürdürülebilir yaşamın temel dayanağı fosil kökenli olmayan kaynakların kullanımına dayanmaktadır.
Veri madenciliği yaklaşımlarının da desteğiyle, yapay zekâ tabanlı modelleme tekniklerinin kaydettiği hızlı ilerleme sayesinde, güneş enerjisinin sürdürülebilir sistemlere olan katkıları yapay sinir ağları

(YSA) aracılığıyla incelenmiş ve regresyon yöntemiyle analiz edilmiştir. Bu çalışmada, coğrafi yapısındaki çeşitlilik nedeniyle kayda değer bir yenilenebilir enerji potansiyeli barındıran İstanbul ilinin güneş enerjisi kapasitesi, sürdürülebilirlik bakış açısıyla değerlendirilmiştir. İstanbul ili genelinde güneşten yararlanma olanakları incelenmiş olup, analizlerde 2023-2026 yıllarını kapsayan resmî ölçüm verileri kullanılmıştır. Kullanılan veri setinde şu parametreler yer almaktadır: aylık açık gün sayısı, ortalama bağıl nem, ortalama atmosfer basıncı, ortalama sıcaklık, toplam güneşlenme süresi, ortalama rüzgâr hızı ve aylık toplam güneş ışınım şiddeti.

Yaygın kullanım alanına sahip yapay sinir ağları (YSA) tabanlı regresyon modeli aracılığıyla aylık toplam güneş ışınım şiddeti analiz edilmiş, elde edilen bulgular doğrultusunda İstanbul'un güneş enerjisi potansiyeli ve verimlilik seviyesi değerlendirilmiştir. 6, 12, 24 ve 36 aylık zaman dilimleri için hesaplanan verimlilik sonuçlarının, kentin güneş enerjisinden yararlanma kapasitesi üzerindeki etkileri net bir şekilde ortaya konulmuştur. Bunun yanı sıra, güneş enerjisi kullanımının İstanbul özelinde sağladığı katkılar ayrıntılandırılmıştır. Bu bildiri kapsamında sırasıyla; literatür taraması, materyal ve yöntem bilgileri, İstanbul ilinin enerji yönetim performansının sürdürülebilirlik açısından değerlendirilmesi, YSA ile doğruluk artırıcı yöntemlerin kullanıldığı analizler, verimlilik regresyon çalışmaları ve nihai bulgular sunulmaktadır.

Anahtar Sözcükler: Güneş Enerjisi, Yenilenebilir Enerji, Sürdürülebilirlik, Çevreci Şehirler, Yapay Sinir Ağları, Regresyon Analizi

DUAL-BAND FENCE-SHAPED SILVER NANOANTENNA DESIGN FOR INFRARED SENSING APPLICATIONS

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Abstract
In this study, design of a dual-band silver (Ag) nanoantenna is proposed for infrared (IR) sensing applications to enhance multiple refractive index sensing capacity. Silver is utilized due to its lower optical losses and higher signal-to-noise ratio in the IR region. The proposed fence-shaped unit cell on an infinite silicon dioxide (SiO_2) membrane was numerically analyzed using the Finite-Difference Time-Domain (FDTD) method via Ansys Lumerical FDTD software. The structural geometry allows for two distinct resonance modes: a short-wavelength mode originating from the extended arms and a long-wavelength mode from the central H-shaped body. Parametric analyses were conducted to observe the effects of vertical arm distance (D), vertical arm height (H), horizontal arm length (L), and metal strip width (W) on the resonance frequencies. Results demonstrate that the resonance modes are highly tunable across the IR spectrum. Furthermore, the design achieves a near-field enhancement exceeding 700 times at the metal-dielectric interface, which is approximately 15-20% higher than equivalent gold-based structures. The structure exhibits a high refractive-index sensitivity of approximately 910 nm/RIU. These findings indicate that the proposed silver nanoantenna array offers a highly sensitive, cost-effective, and tunable alternative for biosensor and chemical analysis applications.
Keywords: Nanoantenna, silver, dual-band resonance, infrared sensing, FDTD.

MICROSTRIP PATCH ANTENNA DESIGN FOR LTE BAND APPLICATIONS

LTE BANDI UYGULAMALARI İÇİN MİKROŞERİT YAMA ANTEN TASARIMI

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Abstract
The rapid advancement of modern wireless communication technologies has significantly increased the demand for higher data transmission rates and uninterrupted connectivity. In this context, Fourth-Generation (4G/4.5G) cellular network standards, commonly referred to as Long-Term Evolution (LTE), constitute one of the fundamental components of the global communication infrastructure. The substantial growth in mobile data traffic has necessitated the development of high-performance, compact, lightweight, and cost-effective antenna designs suitable for deployment in both base stations and user terminals. In this study, a microstrip patch antenna with variable patch dimensions is designed to operate efficiently within the 2.7 GHz LTE frequency band. Microstrip antennas are widely preferred in wireless communication systems due to their low manufacturing cost and compatibility with printed circuit board (PCB) fabrication technologies. The proposed antenna is implemented on an FR-4 substrate, a widely available material that offers high mechanical durability and cost-effectiveness for practical applications. Simulation results demonstrate that the designed antenna achieves a reflection coefficient (S11) below –10 dB at the target center frequency of 2.7 GHz and throughout the intended LTE operating band (Fig. 1). Furthermore, a gain of approximately 6 dBi is obtained (Fig. 2). Analysis of the radiation characteristics reveals a stable and directional radiation pattern with suppressed side-lobe levels in the main beam direction. The surface current distributions are illustrated in Fig. 3. The obtained results indicate that the proposed 2.7 GHz microstrip patch antenna provides a low-cost, stable, and high-performance solution capable of meeting the commercial and industrial requirements of modern LTE communication systems.
Keywords: Microstrip Antenna, LTE, Wireless Communication, 2.7 GHz

Özet
Modern kablosuz haberleşme teknolojilerinin hızla gelişmesi, yüksek veri iletim hızlarına ve kesintisiz bağlantı kalitesine olan ihtiyacı her geçen gün artırmaktadır. Bu doğrultuda, Uzun Vadeli Evrim (LTE) olarak adlandırılan 4G/4.5G hücresel ağ standartları, küresel iletişim altyapısının en temel taşlarından birini oluşturmaktadır. Mobil veri trafiğindeki bu muazzam artış, hem baz istasyonlarında hem de kullanıcı terminallerinde çalışabilecek, yüksek performanslı, kompakt boyutlu, hafif ve düşük üretim maliyetine sahip anten tasarımlarını zorunlu hale getirmiştir. Bu çalışmada, LTE ağlarının 2.7 GHz frekans bandında kararlı bir şekilde çalışabilmesi amacıyla değişken uzunluklara sahip bir yama anten tasarımı yapılmıştır. Mikroşerit antenler baskı devre kartı (PCB) teknolojisiyle ucuz ve seri üretilebilmeleri nedeniyle kablosuz haberleşme sistemlerinde sıklıkla tercih edilmektedir. Bu çalışmada kapsamında tasarlanan anten, endüstride yaygın olarak bulunan, mekanik dayanımı yüksek ve maliyet etkin bir çözüm sunan FR-4 malzemesi kullanılmıştır. Simülasyon sonuçları, antenin 2.7 GHz merkez frekansında ve hedeflenen LTE çalışma bandı genelinde S11 değerinin -10 dB altında olduğunu göstermektedir (Fig. 1.) Anten kazancı (Gain) 6 dB seviyesinde elde edilmiştir (Fig.2). Antenin ışıma

örüntüleri (radiation patterns) incelendiğinde ise ana lob doğrultusunda kararlı, yönsel ve istenmeyen yan lob seviyeleri bastırılmış bir karakteristik sergilediği gözlemlenmiştir. Yüzey akımları şekil 3 te gösterilmiştir. Sonuç olarak, bu çalışma kapsamında geliştirilen 2.7 GHz mikroşerit yama anten, modern LTE haberleşme sistemlerinin ticari ve endüstriyel gereksinimlerine düşük maliyetli, kararlı ve yüksek performanslı bir çözüm sunmaktadır.

Anahtar kelimeler: Mikroşerit Anten, LTE, Haberleşme, 2.7GHz

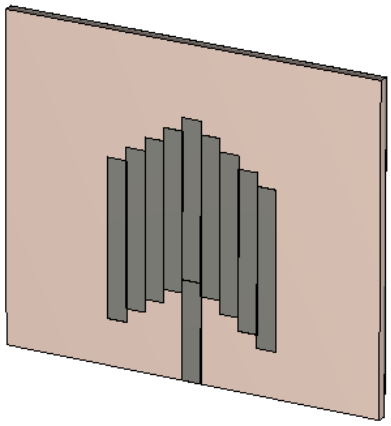


Fig.1. Antenna

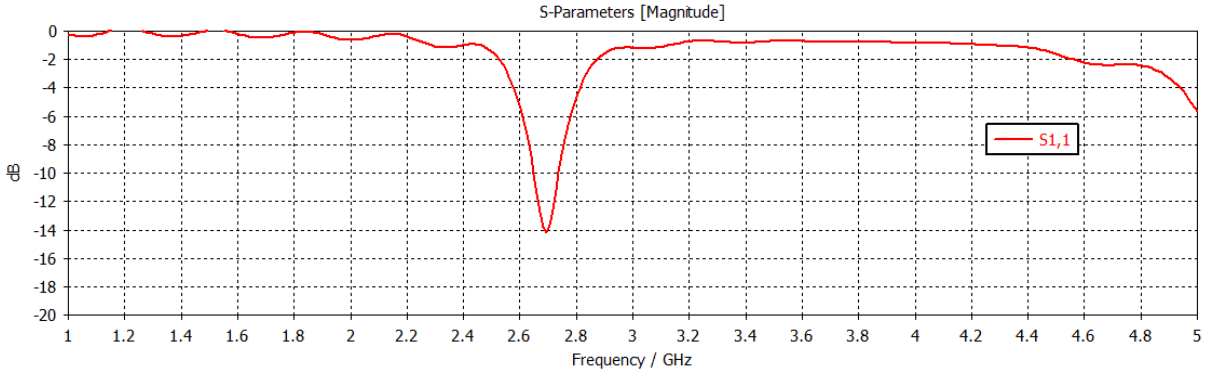
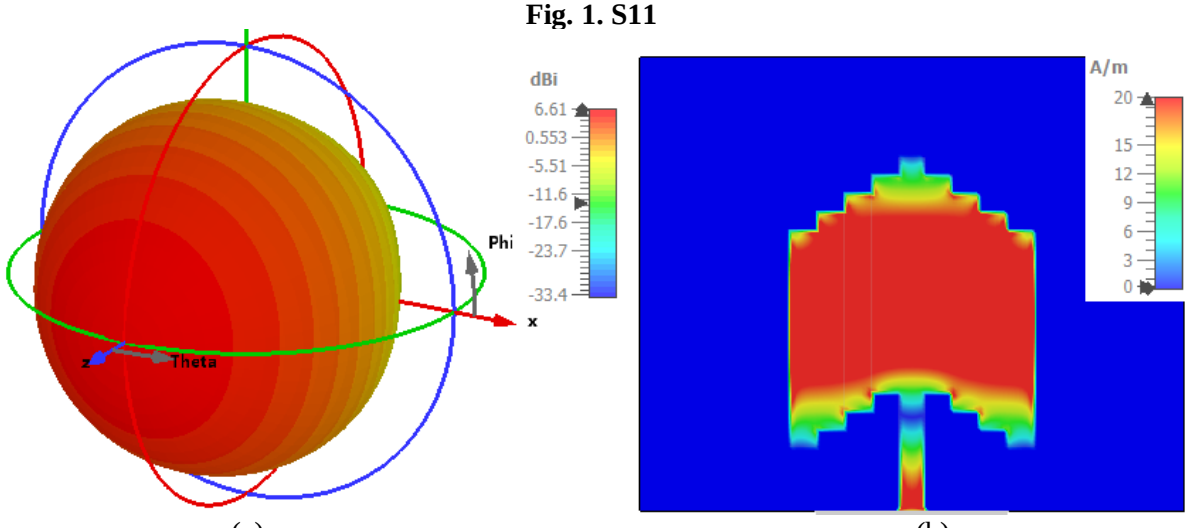


Fig. 1. S11



(a) (b)

Fig.2. (a)Antenna Gain (b) Surface Current 2.7GHz

BEAM SCANNING MICROSTRIP ANTENNA DESIGN FUTURE SCENARIOS TO COME FROM GLOBALIZATION TO FREE TRADE

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Abstract
The increasing demand for advanced wireless communication, radar, and satellite systems has accelerated the need for antenna structures offering wide bandwidth, high gain, and frequency-dependent beam steering capabilities. In this study, a microstrip traveling-wave antenna (TWA) operating within the 6–12 GHz frequency range is designed and analyzed through full-wave electromagnetic simulations.
The antenna geometry is illustrated in Fig. 1. The proposed structure is designed based on the traveling-wave principle, where electromagnetic energy propagates along the antenna while continuously radiating into free space. This mechanism enables wideband operation and frequency-controlled beam scanning characteristics.
The reflection coefficient (S11) results presented in Fig. 2 indicate that the antenna maintains an impedance bandwidth below the −10 dB criterion over a significant portion of the operating band, particularly between 7.0 and 10.0 GHz. The minimum reflection coefficient reaches approximately −30 dB around 7.4 GHz, demonstrating excellent impedance matching and efficient power transfer.
The three-dimensional radiation patterns at 7.2 GHz, 8.6 GHz, and 9.8 GHz are shown in Fig. 3. As the operating frequency increases, the main beam progressively shifts its direction, confirming the frequency-scanning behavior of the proposed antenna. The realized directivity is approximately 13.5 dBi at 7.2 GHz, 15 dBi at 8.6 GHz, and 16 dBi at 9.8 GHz. The increase in directivity together with the beam displacement verifies the leaky-wave/traveling-wave radiation mechanism of the designed structure.
In conclusion, the proposed microstrip traveling-wave antenna exhibits wideband performance, high directivity, and frequency-controlled beam scanning capability. These characteristics make it a promising candidate for radar, electronic scanning, and modern wireless communication applications.
Keywords: Microstrip Antenna, Traveling-Wave Antenna (TWA), Leaky-Wave Antenna (LWA), Beam Scanning, Radar Systems.

WİEN KÖPRÜ OSİLATÖRÜ TASARIMINDA R VE C DEĞERLERİNİN LTSPICE SİMÜLASYONU VE OPTİMİZASYON YÖNTEMLERİ İLE BELİRLENMESİ

DETERMINATION OF R AND C VALUES IN THE DESIGN OF A WIEN BRIDGE OSCILLATOR USING LTSPICE SIMULATION AND OPTIMISATION METHODS

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Abstract
In this study, the resistance (R) and capacitance (C) values of a Wien bridge oscillator circuit are determined using two different optimization methods over the E12 and E24 discrete value series defined in IEC 60063:2015. In conventional design approaches, the nearest standard component to the theoretical value is selected manually; in this study, an automated simulation-based search is performed over the candidate space. Constraint-filtered Brute Force Search (BF) and Genetic Algorithm (GA) are selected as optimization methods. In both approaches, the LTspice XVII simulator is invoked via command line from a Python environment to obtain the actual oscillation frequency and Total Harmonic Distortion (THD). In the BF method, candidates are constrained through analytic pre-filtering and sorting by ideal frequency deviation; in the GA method, a cache mechanism prevents redundant simulations for repeated individuals. A two-pass Fourier analysis technique is employed to improve THD measurement accuracy. Experiments are conducted on an AD712 op-amp based circuit with a target frequency of 1000 Hz, tolerance of ±10%, and maximum THD of 8%. Results show that the BF method converges in 214 and the GA in 162 LTspice simulations, both achieving f_{meas} with BF achieving fmeas ≈ 1008 Hz and THD ≈ 6.34%, GA achieving fmeas ≈ 1029 Hz and THD ≈ 6.37%. The GA produces a solution satisfying the ±10% tolerance constraint with 1.3 times fewer simulations than the brute force method. The THD values of both methods remain well below the target threshold of 8%, and the contribution of the two-pass Fourier technique to measurement accuracy is supported by the obtained results.
Keywords: Wien Bridge Oscillator, Genetic Algorithm, Brute Force Search, Ltspice, E-Series, Total Harmonic Distortion, Circuit Optimization

Özet
Bu çalışmada Wien köprü osilatörü devre yapısındaki direnç (R) ve kapasitör (C) değerleri, IEC 60063:2015 standardında tanımlanan E12 ve E24 ayrık değer serileri üzerinde iki farklı optimizasyon yöntemiyle belirlenmiştir. Geleneksel tasarım yaklaşımlarında teorik değere en yakın standart eleman el yordamıyla seçilmektedir; bu çalışmada ise aday uzayı üzerinde simülasyon destekli otomatik arama gerçekleştirilmiştir. Yöntemler olarak kısıt-filtrelemeli Kaba Kuvvet Araması (BF) ve Genetik Algoritma (GA) seçilmiş; her iki yöntemde de LTspice XVII simülatörü Python ortamından komut satırı aracılığıyla çağrılarak gerçek osilatör frekansı ve Toplam Harmonik Bozulma (THD) değerleri elde edilmiştir. BF yönteminde adaylar analitik ön eleme ve ideal frekans sapmasına göre sıralama ile kısıtlanmış; GA yönteminde ise önbellek mekanizması sayesinde tekrar eden bireyler için gereksiz simülasyonların önüne geçilmiştir. THD ölçüm doğruluğunu artırmak amacıyla iki geçişli Fourier analizi tekniği uygulanmıştır. AD712 işlemsel yükselteç tabanlı devre üzerinde gerçekleştirilen deneylerde hedef frekans 1000 Hz, tolerans ±%10 ve maksimum THD %8 olarak belirlenmiştir. Elde edilen sonuçlar, BF yönteminin 214, GA yönteminin ise 162 LTspice simülasyonuyla BF için $f_{ölç}$ ≈ 1008 Hz ve THD ≈ %6,34, GA için fölç ≈ 1029 Hz ve THD ≈ %6,37 değerlerine ulaştığını göstermektedir. GA, kaba kuvvet yöntemine kıyasla 1,3 kat daha az simülasyonla ±%10 tolerans kısıtını karşılayan bir çözüm üretmiştir. Her iki yöntemin THD değerleri hedef eşiğin (%8) belirgin biçimde altında kalmış olup iki geçişli Fourier yönteminin ölçüm doğruluğuna katkısı elde edilen sonuçlarla desteklenmiştir.
Anahtar kelimeler: Wien Köprü Osilatörü, Genetik Algoritma, Kaba Kuvvet Araması, Ltspice, E-Serisi, Toplam Harmonik Bozulma, Devre Optimizasyonu

ENJEKSİYON DÖKÜM HATTI İÇİN TAM OTOMATİK SİSTEM ÇAPAK ALMA ÜNİTESİNİN GELİŞTİRİLMESİ

DEVELOPMENT OF A FULLY AUTOMATED DEBURRING UNIT FOR THE INJECTION DIE CASTING LINE

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Abstract

In the injection die casting line, burrs and aluminum residues occur at the interface where the steel insert shaft and aluminum body meet on the BSH drum spider component, which is subjected to casting and trimming processes. Since this area interfaces with the washing machine drum assembly, any burrs in this region are strictly unacceptable by the customer. For this reason, deburring units have been designed, manufactured, and implemented. However, these units have not achieved the desired performance, and in some cases, cutting tools mounted on the fixtures have scratched the steel shaft, resulting in scrap parts.

In existing systems, the deburring process is performed manually by the operator. The operator places the part into the unit, manually adjusts the diamond tool clearance, and rotates the part by hand to remove burrs. However, this process leads to inconsistent results, operator-dependent quality variation, and significant reliability issues.

Therefore, there is a need to develop a fully operator-independent automated deburring unit. In the proposed system, part clamping will be performed via pneumatic cylinders, cutting tool movement will also be controlled by pneumatic actuators, and rotational movement will be provided by a stepper motor. This will ensure controlled force application and consistent deburring performance without operator intervention.

The reasons for this project include the insufficient performance of existing deburring units, low deburring efficiency in critical regions, repetitive deburring operations, variability in results depending on operator force, risk of shaft scratching due to cutting tools, and the potential risk of delivering defective or scratched parts to the customer if such issues are not detected in time.

The developed system will consist of multiple mechanical and automation subsystems. After the part is placed into the unit, a pneumatic clamping mechanism will apply vertical pressure to prevent movement. During loading, the cutting tools will remain in a retracted position to ensure that the shaft is not damaged. Once clamping is completed, the cutting tools will move toward the shaft via a pneumatic actuator and position themselves around the critical deburring area. Subsequently, the part will be rotated by a stepper motor, allowing controlled deburring of the surface. After completion, the cutting tools will retract, clamping pressure will be released, and the part will be removed from the unit.

From the operator's perspective, the system will include a "home position" function on the HMI screen. Before loading the part, the operator will press this button to reset all actuators (clamping plate, cutting tool position, and motor zero position). After placing the part, the operator will start the cycle via the control panel. The system will then automatically execute clamping, tool positioning, and rotation processes, completing the deburring operation. At the end of the cycle, the system will return to its home position for the next operation.

The innovation of this project lies in transforming a manual, operator-dependent deburring process into a fully automated and consistent system.

It is based on synchronized operation of pneumatic actuators (for clamping and tool movement) and a stepper motor (for rotation), controlled through predefined force and position parameters. The system directly addresses critical issues such as shaft scratching and incomplete burr removal through a carefully engineered tool approach mechanism. Custom-designed components such as part-specific clamping plates, controlled tool positioning systems, and motorized rotation units differentiate this solution from conventional deburring setups.

Experimental optimization of parameters such as clamping force, tool advancement distance, and rotational speed ensures repeatable and stable process results. The system also eliminates scrap risks caused by operator variability and creates a traceable, standardized production process.

This project represents an R&D study that replaces a manual quality-critical process with a high-precision automated solution, eliminating previous design shortcomings through engineering optimization. The innovation is not only in automation but also in the part-specific mechanical design and process safety approach.

Expected outcomes include complete elimination of shaft surface damage, zero customer rejection due to deburring defects, consistent deburring quality independent of operator skill, elimination of repetitive operations, reduced cycle time, and increased productivity. Additionally, labor dependency, training requirements, and ergonomic risks are significantly reduced.

The system ensures faster and continuous operation compared to manual processing, eliminates operator exposure to cutting tools, and reduces occupational health risks associated with repetitive manual tasks. It also strengthens supplier reliability through zero-defect delivery capability.

Key deliverables of the project include a fully automated programmable deburring unit (including mechanical design, control system, and HMI interface), technical drawings, assembly documentation, operational procedures, and optimized process parameters such as clamping force, tool position, and rotational speed.

In summary, this project delivers zero-defect quality, full operational independence, and significant cost reduction. The final output is not only a machine, but a fully integrated process solution with built-in quality assurance.

Keywords: Deburring Process, Mass Production, Reduction of Manual Labor, Product Quality and Capacity Increase, Reduction of Scrap Rates

Özet

Enjeksiyon döküm hattında dökümü ve trim işlemi gerçekleştirilecek olan bsh tambur yıldızı parçası için, döküm sonrasında mil ve aluminyum gövdenin birleştiği yerde aluminyum kalıntıları, çapakları kalmaktadır. Bu bölge çamaşır makinesi montajında kazan içerisine oturduğu için bu bölgedeki çapak müşteri tarafından kesinlikle kabul edilmemektedir. Bu sebeple buradaki çapakların alınabilmesi için çapak alma üniteleri tasarlanmış, üretilmiş ve kullanılmıştır. Fakat bölgedeki çapaklar istenilen şekilde alınamamış, ek olarak aparat üzerinde bulunan kesici takımlar mili çizerek parçanın hurda olmasını sağlamıştır. Yapılan bu üniteler manuel bir şekilde operatör vasıtasıyla çapak alma işlemleri yapılmıştır. Operatör parçayı ilgili üniteye koyar, elmas mesafesini manuel olarak ayarladıkan sonra parçayı eliyle döndererek, çapağın alınması gerçekleştirilmeye çalışılmıştır. Bu ihtiyacı giderebilecek, operatörden bağımsız bir çapak alma ünitesinin geliştirimesi gerekmektedir. Bu kapsamda parça sıkıştırma işlemlerinin pnomatik piston yardım ile, elmas hareketlerinin piston yardımı ile, dönüş hareketinin ise step motor ile sağlanarak operatörden bağımsız belirli kuvvetlerde parça üzerindeki çapak alma işlemleri gerçekleştirilecektir.

Tasarlanan, üretimi ve kullanımı gerçekleştirilen çapak alma ünitelerinin istenildiği şekilde performans gösterememesi, ilgili bölgede çapak alma performansının az olması, tekrarlı bir çapak alma işleminin oluşması, operatörlerin kuvvetine göre parça üzerindeki çapak alma performansının değişmesi dolayısıyla operatörlere göre çapak alma performansının değişmesi, aparatlar üzerindeki kesici takımların mili çizmesi, bu tarz hataların farkedilmemesi durumunda çapaklı ya da çizik milli parçaların müşteriye gitme olasığı bu projenin yapılmasını belirlemiştir.

Yapılacak olan proje ile parçaya özel ve hassas çapak alma ünitesi geliştirilecektir. Ünite bir çok ekipmandan ve bölümden oluşacaktır. Öncelikle parça üniteye koyulduktan sonra parçanın dikey hareket yapmaması için bir pnomatik piston kolu yardımı ile ilgili parçaya üst kısımdan baskı uygulanacaktır.

Parça koyma ve üstten baskı uygulama esnasında çapağı olacak elmasların konumunu belirleyen piston geride olacaktır. Yani kesici elmaslar besleme esnasında mile zarar vermemesi için milden uzak olması sağlanacaktır. İlgili baskı işlemi tamamlandıktan sonra, ilgili piston yardımı ile kesici elmaslar mile yaklaşacak, mil çevresi etrafında doğru pozisyonda olacaktır. Akabinde ilgili step motor yardımı ile parça elmas etrafında döndürülerek ilgili bölgedeki çapağın alınması sağlanacaktır. Bu işlem bittikten sonra kesici elmaslar geri pozisyona gelecek, parça üzerindeki baskı kaldırılıp parça üniteden alınacaktır. Operatör tarafından bu proje anlatılacak olursa, ünite ekranında home pozisyon butonu olacaktır. Operatör parça beslemeden önce bu butona basarak sıkıştırma plakasını geriye, kesici elmas takım pozisyonunu geriye ve motoru sıfır pozisyonuna alacaktır. Ardından döküm hücresinden çıkan trimlenmiş parçayı bu üniteye koyarak ekran üzerinden başlatma butonun basacaktır. İlgili sıkıştırma, kesici elmas takımı yaklaşma ve motor dönme işlemi gerçekleştiğinde çapak alma işlemi de gerçekleşmiş olacaktır. Çapak alma işlemi gerçekleştikten sonra ünite sıfır pozisyonuna gelecek operatör üniteden çapağı alınmış parçayı alacaktır.

Operatörün el becerisine bağlı olan ve tutarsız sonuçlar üreten manuel çapak alma sürecini, tamamen otomatik bir sisteme dönüştürmesiyle yenilikçidir. Pnomatik pistonlar (baskı ve kesici takım hareketi) ile step motorun (dönüş hareketi) senkronize çalıştığı, önceden tanımlanmış kuvvet ve konum kontrolüne dayalı bir sistemdir. Geçmiş tasarımlardaki "mil çizilmesi" ve "çapak kalması" gibi temel sorunları, tasarım aşamasında çözmeyi hedefleyen kesici takımların parçaya yaklaşma/uzaklaşma mekanizması ile öne çıkar. Parçanın geometrisine özel sıkıştırma plakası, kesici takım konumlandırma mekanizması ve step motor entegrasyonu gibi standart olmayan bileşenlerin tasarlanması ve optimize edilmesi. Baskı kuvveti, kesici takım ilerleme mesafesi ve dönüş hızı gibi parametrelerin deneysel olarak test edilerek tutarlı sonuçlar sağlayacak şekilde ayarlanması. Operatör hatasından kaynaklanan "kaçan hurda" riskini minimize eden, tekrarlanabilir ve izlenebilir bir proses oluşturulması. Bu proje, "manuel bir kalite problemini", "yüksek hassasiyetli otomasyon" ile çözen ve geçmiş deneyimlerden öğrenerek "tasarım hatalarını bertaraf eden" bir Ar-Ge çalışmasıdır. Yenilik; sadece otomasyonda değil, parçaya özgü tasarlanmış mekanizmalar ve proses güvenliği yaklaşımındadır.

Mil yüzeyinin çizilmesi tamamen önlenecek, müşteri reddi veya hurda kaynaklı maliyetler sıfırlanacak. Operatörden bağımsız çalışan sistem, tüm parçalarda aynı mükemmel çapak alma kalitesini garanti edecek. Tekrarlı çapak alma işlemine gerek kalmayacak, proses süresi kısalacak ve verimlilik artacak. Beceriye veya fiziksel kuvvete bağlılık ortadan kalkacak. İş gücü rotasyonu ve eğitim maliyetleri azalacak. Çizik ve çapak kaynaklı hurda maliyetleri tamamen elimine edilecek. Manuel işleme göre çok daha hızlı ve kesintisiz bir cycle süresi sağlanacak. Kesici takımla elle temas riski ortadan kalkacak, tekrarlayan zorlayıcı hareketlerden kaynaklanabilecek sağlık riskleri azalacak. Sıfır hata ile teslimat, güvenilir tedarikçi konumunu pekiştirecek. Somut çıktılar şu şekildedir. Tam otomatik, programlanabilir bir çapak alma ünitesi (mekanik tasarım, yazılım ve kontrol paneli dahil). Tasarım çizimleri, montaj talimatları ve operasyon prosedürleri. Parça bazında optimize edilmiş baskı kuvveti, takım konumu ve dönüş hızı değerleri. Özetle, bu proje; kalitede sıfır hata, operasyonda tam bağımsızlık ve maliyetlerde belirgin bir düşüş vaat etmektedir. Çıktı, sadece bir makine değil, kalite güvencesi entegre edilmiş bir "süreç çözümü" olacaktır.

Anahtar kelimeler: Çapak Alma Prosesi, Seri Üretim, İnsan İşçiliklerinin Azaltılması, Ürün Kalite ve Kapasite Artışı, Hurda Oranlarının Azaltılması

YÜKSEK BASINÇLI DÖKÜM FABRİKASI CNC İŞLEME BÖLÜMÜNDE İŞLEME SOĞUTMA SUYU PERFORMANSININ ARTTIRILMASI

IMPROVEMENT OF MACHINING COOLANT PERFORMANCE IN THE CNC MACHINING DEPARTMENT OF A HIGH-PRESSURE DIE CASTING PLANT

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Abstract

This study focuses on testing and evaluating alternative machining coolants with different chemical compositions and drying characteristics in order to improve the performance of the existing coolant, which causes oxidation and staining on machined parts in CNC machining lines. Within this scope, next-generation coolants with no residue formation, fast-drying properties, and corrosion-inhibiting characteristics are tested to eliminate the need for manual air drying by operators. As a result, cycle time reduction, decreased air consumption, improved energy efficiency, and guaranteed surface quality are targeted. The project will be conducted as a process-oriented R&D study without requiring any hardware modifications in the existing production system.

The core motivation of this project is the operational problems caused by coolant residues remaining on machined surfaces, which directly affect production efficiency and product quality. Currently, wet surfaces lead to oxidation and staining issues, resulting in cosmetic defects that are not acceptable to customers. To overcome this, operators are required to manually dry parts using compressed air, creating a significant bottleneck in the production line. Especially for large parts, operators cannot keep up with machine cycle times, leading to waiting periods, productivity losses, and increased labor costs. Additionally, excessive and uncontrolled use of compressed air leads to energy waste and increases operator workload. Therefore, there is a critical need for a process improvement based on coolant replacement to eliminate operator dependency, reduce energy consumption, optimize cycle times, and ensure final product quality.

Within the scope of the project, a systematic testing and evaluation process will be conducted to improve coolant performance. In the first stage, commercially available alternative machining coolants with claims of fast drying, low residue formation, and superior corrosion resistance will be identified and compared in terms of technical specifications. In the next phase, selected candidate coolants will be tested incrementally on specific part groups and machining parameters in the existing production line. After each trial, surface quality (oxidation, staining), drying time, operator intervention requirements, and cycle time impacts will be quantitatively measured and compared with the current baseline.

During testing, the compatibility of coolants with CNC machines and equipment (e.g., seal compatibility), as well as occupational health and safety aspects such as vapor and emission levels, will also be monitored. Following analysis of all experimental data, the highest-performing coolant formulation will be selected, and a full-scale pilot production phase will be initiated. As the final step, standardization of procurement and operator training regarding the new process conditions will be carried out.

This project aims to achieve multi-dimensional productivity and quality improvements through a purely chemical process optimization approach, without requiring major equipment or automation investments. While conventional solutions typically rely on mechanical systems such as drying units or additional automation, this study proposes a fundamental process improvement through chemical R&D.

The R&D nature of the project arises from the systematic experimental investigation of the optimal coolant formulation specific to a given production line, part geometry, and environmental conditions. The scientific evaluation of coolant properties such as surface tension, evaporation rate, and corrosion inhibitor concentration—and their impact on final product quality and production efficiency—represents a typical applied R&D approach. Furthermore, the quantitative assessment of energy consumption, operator efficiency, and scrap rates strengthens the experimental and optimization-based nature of the project.

Upon successful completion, the project is expected to permanently eliminate oxidation and staining issues on machined surfaces, thereby achieving zero customer-related quality rejections. The elimination of manual air drying will significantly reduce per-part processing time and remove line bottlenecks, increasing overall capacity utilization with the same workforce and equipment. From an energy perspective, the elimination of uncontrolled compressed air usage will result in substantial annual electricity savings. Additionally, labor costs associated with downstream corrective operations will be eliminated. The project will also deliver technical specifications and process guidelines for the selected coolant formulation, ensuring process standardization and quality control. Overall, these improvements will significantly increase production efficiency while reducing total manufacturing costs.

Keywords: Machining Process, Efficiency Improvement, Reduction of Manual Labor, Product Quality and Capacity Increase, Reduction of Scrap Rates

Özet

CNC işleme hatlarında, işlem sonrası parçalarda oksitlenme ve leke oluşumuna neden olan mevcut soğutma yağının performansının iyileştirilmesi amacıyla farklı kimyasal kompozisyona ve kuruma özelliklerine sahip alternatif soğutma yağlarının test edilmesi ve değerlendirilmesidir. Bu kapsamda, parça yüzeyinde kalıntı bırakmayan, hızlı kuruyan ve korozyon önleyici özellikteki yeni nesil soğutma yağları denenerek, operatörlerin el ile kurutma ihtiyacını ortadan kaldırmak ve buna bağlı olarak çevrim süresini kısaltmak, hava tüketimini azaltmak, enerji verimliliğini artırmak ve yüzey kalitesini garanti altına almak hedeflenmektedir. Proje, mevcut üretim prosesinde herhangi bir donanımsal değişiklik gerektirmeden, sadece proses kimyasalları odaklı bir Ar-Ge çalışması olarak yürütülecektir.

Bu projenin temelini, CNC işleme sonrasında parça yüzeylerinde kalan soğutma yağı kalıntılarının neden olduğu ve üretim verimliliği ile ürün kalitesini doğrudan tehdit eden bir dizi operasyonel problem oluşturmaktadır. Mevcut durumda, ıslak kalan parçaların yüzeylerinde oksitlenme ve lekelenme sorunları yaşanmakta, bu da müşteri tarafından kabul edilemeyen görsel kusurlara yol açmaktadır. Bu sorunu gidermek için operatörlerin parçaları elle havayla kurutmak zorunda kalması, üretim hattında önemli bir darboğaz yaratmaktadır. Özellikle büyük hacimli parçalarda, operatörler makine çevrim süresine yetişememekte, bu da bekleme sürelerine, verim kaybına ve iş gücü maliyetlerinde artışa neden olmaktadır. Ayrıdan, yoğun ve kontrolsüz hava kullanımı enerji israfına yol açmakta ve operatörler üzerinde fiziksel yük oluşturmaktadır. Tüm bu sebeplerle, operatöre bağımlılığı ortadan kaldıracak, enerji tüketimini azaltacak, çevrim sürelerini optimize edecek ve nihai ürün kalitesini garanti altına alacak, temelde soğutma yağının değiştirilmesine dayalı köklü bir proses iyileştirmesine duyulan ihtiyaç, bu projenin hayata geçirilmesini zorunlu kılmıştır.

Proje kapsamında, mevcut soğutma yağının performansını iyileştirmeye yönelik sistematik bir test ve değerlendirme süreci yürütülecektir. İlk aşamada, piyasada mevcut olan ve hızlı kuruma, düşük kalıntı bırakma ile üstün korozyon önleyici özelliklere sahip olduğu iddia edilen alternatif soğutma yağları belirlenecek ve teknik özellikleri karşılaştırılacaktır. Ardından, seçilen aday yağlar, mevcut üretim hattında, belirli bir parça grubu ve işlem parametreleri üzerinden kademeli olarak test edilecektir. Her bir yağ denemesi sonrasında, parça yüzey kalitesi (oksitlenme, leke oluşumu), kuruma süresi, operatör müdahalesi gereksinimi ve çevrim süresi üzerindeki etkileri nicel verilerle ölçülecek ve mevcut durumla kıyaslanacaktır. Testler esnasında, yağın CNC makinesi ve ekipmanları üzerindeki olası etkileri (örneğin, contalara uyumluluğu) ile iş sağlığı ve güvenliği açısından buhar/emisyon değerleri de gözlemlenecektir. Tüm bu deneysel verilerin analizinin ardından, en yüksek performansı sergileyen yağ formülasyonu seçilecek ve nihai kabul için geniş çaplı bir pilot üretim çalışması başlatılacaktır. Projenin son faaliyeti olarak, başarılı olan yeni soğutma yağının tedarik sürecinin standardizasyonu ve tüm ilgili operatörlerin yeni proses koşulları hakkında eğitimi gerçekleştirilecektir.

CNC işleme süreçlerinde köklü bir ekipman veya otomasyon yatırımı gerektirmeden, sadece soğutma yağı formulasyonundaki değişiklikle çok boyutlu verimlilik artışı ve kalite iyileştirmesi hedeflemesidir. Geleneksel yaklaşımlar bu tür sorunlara mekanik çözümler (kurutma üniteleri, ek otomasyon) getirirken, bu proje kimyasal bir Ar-Ge çalışmasıyla problemi kökünden çözmeyi amaçlamaktadır. Projenin Ar-Ge niteliği ise, belirli bir üretim hattına, parça geometrisine ve çevresel koşullara özgü optimum yağ formulasyonunun deneysel yöntemlerle sistematik olarak araştırılmasından kaynaklanmaktadır. Farklı kimyasal kompozisyonlara sahip yağların; yüzey gerilimi, buharlaşma hızı, korozyon inhibitör konsantrasyonu gibi parametrelerinin nihai parça kalitesi ve üretim verimliliği üzerindeki etkilerinin bilimsel metodlarla test edilip optimize edilmesi, tipik bir uygulamalı Ar-Ge sürecidir. Ayrıca, yağ değişiminin enerji tüketimi, operatör verimliliği ve hurda oranları üzerindeki etkilerinin kantitatif olarak ölçülerek proses optimizasyonu yapılması da projeye güçlü bir Ar-Ge karakteri kazandırmaktadır.

Bu projenin başarıyla tamamlanması neticesinde, öncelikle parça yüzeylerinde oluşan oksitlenme ve lekelenme sorununun kalıcı olarak çözülmesi ve böylece müşteri kaynaklı kalite reddinin sıfırlanması beklenmektedir. Operatörlerin elle kurutma yapma zorunluluğu ortadan kalkacağı için, parça başı işlem süresinde önemli bir kısalma sağlanacak ve üretim hattı darboğazı çözülerek teorik kapasite kullanım oranı artırılabilecektir. Bu durum, aynı iş gücü ve ekipmanla daha yüksek çıktı elde edilmesi anlamına gelecektir. Enerji tüketimi açısından, kontrolsüz hava kullanımının sona ermesiyle, projeksiyonlara göre yıllık ölçekte önemli miktarda elektrik tasarrufu gerçekleşecektir. Ayrıca, sonraki üretim aşamalarında bu problemler nedeniyle harcanan ek işçilik maliyetleri de ortadan kalkacaktır. Projenin bir diğer somut çıktısı, seçilen optimum yağ formulasyonuna ilişkin teknik spesifikasyonlar ve proses talimatları olacak, bu da proses standardizasyonu ve kalite kontrolünün sağlanmasına hizmet edecektir. Tüm bu iyileştirmeler, toplam verimlilikte gözle görülür bir artış sağlarken, aynı zamanda üretim maliyetlerinde de düşüşe katkıda bulunacaktır.

Anahtar kelimeler: İşleme Prosesi, Verimlilik Arttırma, İnsan İşçiliklerinin Azaltılması, Ürün Kalite ve Kapasite Artışı, Hurda Oranlarının Azaltılması

ÇEVRİMİÇİ HABER SİTELERİNDE KADIN CİNAYETİ HABERLERİNİN SUNUMU: "YENİAKİT.COM.TR" ÜZERİNE BİR ANALİZ

PRESENTATION OF FEMICIDE NEWS ON ONLINE NEWS SITES: AN ANALYSIS OF "YENIAKIT.COM.TR"

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Abstract
The increase in femicide cases in Turkey in recent years has led to these incidents becoming more visible in digital media environments. Beyond merely reporting events, the way the media presents femicide cases plays a significant role in reproducing or challenging gender inequalities. In this context, the discourses used in news texts directly influence how such incidents are perceived by the public and how social awareness regarding violence against women is shaped.
This approach may reduce the visibility of the structural dimensions of violence against women and cause the social aspects of the problem to remain in the background. In this study, the presentation of femicide news in internet journalism was examined through the official website of Yeni Akit Newspaper, yeniakit.com.tr. Content analysis, one of the qualitative research methods, was employed in the study. As a result of a search conducted on the website using the keyword "femicide," seven news reports published between October 5 and November 19, 2025, were analyzed. The news reports examined within the scope of this study revealed that insufficient attention was given to the causes and social background of femicides, and that these incidents were generally presented as isolated individual cases. The study examined news headlines, language use, representations of perpetrators and victims, and the ways in which the news was framed within the context of gender. The findings indicated that sensational and dramatic language was frequently used, victims were predominantly represented in a passive manner, and considerable emphasis was placed on the perpetrators' justifications. Furthermore, the social dimensions of femicide were largely overlooked, and the incidents were presented as isolated individual cases.
Keywords: Femicide News, Internet Journalism, Digital Media, Yeni Akit, Content Analysis

Özet
Son yıllarda Türkiye'de kadın cinayetlerinin artış göstermesi, bu olayların dijital medya ortamlarında daha görünür hâle gelmesine neden olmuştur. İnternet haberciliğinde, kadın cinayetlerinin ele alınış biçimi, yalnızca bir olay aktarımı olmanın ötesinde, toplumsal cinsiyet eşitsizliklerinin yeniden üretilmesinde veya sorgulanmasında etkili bir rol oynamaktadır. Bu bağlamda haber metinlerinde kullanılan söylemler, olayların kamuoyu tarafından nasıl algılandığını ve kadınlara yönelik şiddet konusunda toplumsal farkındalığın nasıl şekillendiğini doğrudan etkilemektedir. Bu çalışmada, kadın cinayeti haberlerinin internet haberciliğinde nasıl sunulduğu Yeni Akit Gazetesi'nin resmî internet sitesi olan yeniakit.com.tr üzerinden incelenmiştir. Araştırmada nitel araştırma yöntemlerinden içerik analizi tekniği kullanılmıştır. Bahsi geçen sitede "kadın cinayeti" anahtar kelimesiyle yapılan tarama sonucunda, 5 Ekim–19 Kasım 2025 tarihleri arasında yayımlanan 7 haber değerlendirmeye alınmıştır. Çalışmada haber başlıkları, kullanılan dil, fail ve mağdur temsilleri ile haberlerin toplumsal cinsiyet bağlamındaki sunuluş biçimleri analiz edilmiştir. Araştırma kapsamında incelenen haberlerde kadın cinayetlerinin nedenlerine ve toplumsal arka planına yeterince yer verilmediği, olayların çoğunlukla bireysel ve münferit vakalar olarak sunulduğu görülmüştür. Bu durum, kadınlara yönelik şiddetin yapısal boyutlarının görünürlüğünü azaltabilmekte ve sorunun toplumsal yönünün geri planda kalmasına neden olabilmektedir. Elde edilen bulgular, haberlerde sansasyonel ve dramatik bir dil kullanımının öne çıktığını, mağdurların çoğunlukla edilgen biçimde temsil edildiğini ve failin gerekçelerine haberlerde geniş yer verildiğini göstermiştir.

Ayrıca çalışmayla kadın cinayetlerinin toplumsal boyutlarının geri planda bırakıldığı ve olayların bireysel vakalar şeklinde sunulduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Kadın Cinayetleri, İnternet Haberciliği, Dijital Medya, Yeni Akit, İçerik Analizi

AN ANALYSIS OF INSTAGRAM ADVERTISEMENTS FOR FASHION AND PERSONAL CARE PRODUCTS PROMOTED BY FAMALE INFLUENCERS

KADIN FENOMENLERİN MODA VE BAKIM ÜRÜNLERİNİ İÇEREN INSTAGRAM REKLAMLARINA YÖNELİK BİR ANALİZ

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ABSTRACT
With the development and transformation of communication technologies, digital marketing strategies have gained momentum. The easy accessibility of the internet has enabled the concept of social media to emerge and develop rapidly; thanks to social media, it has become easier for companies to make more profit by reducing the advertising cost. In the era in which it is lived, advertising has become a strategy; consumers have been included in consumption through subconscious messages or content that directs to buy. Today, advertisements have gained a place on social media as well as being on billboards, hand brochures, shop signs, posters, public transportation and showcases. In fact, it is extremely common for individuals to recommend a product or service they like to others,especially on Instagram.In this direction, it is appropriate to say that advertising processes have undergone transformation. Recently, defined as a phenomenon, content producers have moved to a position to the earn income by publishing advertisements belonging to various companies on their personal social media accounts. While phenomena attract attention as people with a large following base, they take individuals from different segments of society as a target audience and market products to their audiences. In this medium, especially female phenomena; promoting clothing, using beauty and care products to insstill confidence in their followers about the product they use. Work. In the study, eight advertising contents about fashion and skin care in the post and story sections of the accounts belonging to four female phenomena with more than on million followers on Istagram media were examined with content analiysis. As a result of the study, preferring comfortable enviroments such as home to direct the followers of female phenomena to buy it has been determined that they do and somtimes highlight their physical properties.
Keywords: Instagram, Woman, Phenomenon, Advertising, Consumption Culture.

ÖZET
İletişim teknolojilerinin gelişimi ve dönüşümüyle birlikte dijital pazarlama stratejileri ivme kazanmıştır. İnternetin kolay erişilebilirliği, sosyal medya kavramının ortaya çıkmasını ve hızla gelişmesini sağlamış; sosyal medya sayesinde firmaların reklam maliyeti azalarak daha fazla kâr elde etmeleri kolaylaşmıştır. İçinde yaşanılan çağda reklam, adeta bir strateji haline gelmiş; tüketiciler, bilinçaltı mesajlar ya da doğrudan satın almaya yönlendiren içerikler aracılığıyla tüketime dahil edilmiştir. Bugün reklamlar televizyon ekranlarında, el broşürlerinde, dükkân tabelalarında, afişlerde, toplu taşıma araçlarında veya vitrinlerde yer almanın yanı sıra sosyal medyada da kendine yer edinmiştir. Hatta bireylerin beğendikleri bir ürünü ya da hizmeti, başka kişilere önermesi bugün özellikle Instagram'da son derece yaygındır. Bu doğrultuda reklam yayınlama süreçlerinin dönüşüm geçirdiğini söylemek yerindedir. Son zamanlarda fenomen olarak tanımlanan sosyal medya içerik üreticileri, kişisel hesaplarında çeşitli firmalara ait reklamları yayınlayarak gelir elde eden bir konuma geçmiştir. Fenomenler geniş takipçi kitlesine sahip kişiler olarak dikkat çekerken toplumun farklı kesimlerindeki bireyleri hedef kitle olarak almakta ve onlara ürün pazarlamaktadır. Bu mecrada özellikle kadın fenomenler; kıyafet tanıtımı yapmakta, güzellik ve bakım ürünlerini kullanarak takipçilerine kullandıkları ürün ile ilgili güven aşılamaya çalışmaktadır. Bu çalışmada, Instagram mecrasında takipçi sayısı bir milyonun üzerinde olan dört kadın fenomene ait hesapların gönderi ve hikâye bölümlerinde yer alan moda ve cilt bakımıyla ilgili sekiz reklam içeriği, içerik analiziyle incelenmiştir.

Çalışmanın sonucunda, kadın fenomenlerin takipçilerini satın almaya yönlendirmek için ev gibi rahat ortamları tercih ettikleri ve bazen de fiziksel özelliklerini ön plana çıkardıkları saptanmıştır.
Anahtar Kelimeler: Instagram, Kadın, Fenomen, Reklam, Tüketim Kültürü.

GÜNDEM BELİRLEME KURAMI BAĞLAMINDA SOSYAL MEDYA HABERCİLİĞİ: X ÖRNEĞİ

SOCIAL MEDIA JOURNALISM IN THE CONTEXT OF AGENDA-SETTING THEORY: THE CASE OF X

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Abstract
With the development of digital communication environments, news production and agenda-building processes have moved from a traditional media-centered structure to a faster, more interactive, and multi-actor field shaped by social media platforms. In particular, X has gone beyond being merely a medium where news is shared and has become an important digital public sphere in which agenda-related content is made visible by journalists, media organizations, political actors, and users. This study examined how social media journalism was shaped through X within the framework of agenda-setting theory by using a quantitative research approach. The theoretical framework of the study was based on the first and second levels of agenda-setting theory, the intermedia agenda-setting approach, and digital journalism practices. Within the scope of the research, the use of X as a news source, the role of journalist accounts in agenda production, the prominent topics in posts, and the relationship between the online news flow and the public agenda were addressed. Based on a quantitative research design, the posts shared by three highly visible journalist accounts on X were numerically examined in accordance with predetermined categories. In this context, the X accounts of Fatih Portakal, Cüneyt Özdemir, and Ahmet Hakan constituted the sample of the research. The data were coded and evaluated within the framework of measurable variables such as posting frequency, topic distribution, news type, interaction level, and relationship with the agenda. The main assumption of the study was that X is not only a medium where news spreads rapidly, but also an agenda space that influences which issues become visible, which topics are discussed, and which actors come to the forefront of the public agenda. In this respect, social media journalism was addressed not merely as a process of news distribution but also in terms of the construction and recirculation of the public agenda in digital environments. Accordingly, the role of X in journalistic practices, intermedia interaction, and the formation of the public agenda was quantitatively evaluated through posting frequency, topic distribution, news type, interaction level, and relationship with the agenda.
Keywords: Agenda-setting, social media journalism, X, quantitative research, digital media

Özet
Dijital iletişim ortamlarının gelişmesiyle birlikte haber üretimi ve gündem oluşturma süreçleri, geleneksel medya merkezli yapıdan sosyal medya platformlarının etkili olduğu hızlı, etkileşimli ve çok aktörlü bir alana taşınmıştır. X, güncel haberlerin dolaşıma girdiği bir platform olmanın yanında gazetecilerin, medya kuruluşlarının, siyasal aktörlerin ve kullanıcıların gündeme ilişkin içerikleri görünür kıldığı önemli bir dijital kamusal alan hâline gelmiştir. Bu çalışmada, gündem belirleme kuramı bağlamında sosyal medya haberciliğinin X platformu üzerinden nasıl şekillendiği nicel araştırma yaklaşımıyla incelenmiştir. Araştırmanın kuramsal temelini gündem belirleme kuramının birinci ve ikinci düzey boyutları, medyalar arası gündem belirleme yaklaşımı ve dijital habercilik pratikleri oluşturmuştur. Araştırma kapsamında X'in haber kaynağı olarak kullanımı, gazeteci hesaplarının gündem üretimindeki rolü, paylaşımlarda öne çıkan konu başlıkları ve çevrimiçi haber akışının kamuoyu gündemiyle ilişkisi ele alınmıştır. Nicel araştırma desenine dayanan çalışmada, X platformunda görünürlüğü yüksek üç gazeteci hesabının paylaşımları belirlenen kategoriler doğrultusunda sayısal olarak incelenmiştir.

Bu kapsamda Fatih Portakal, Cüneyt Özdemir ve Ahmet Hakan'ın X hesapları araştırmanın örneklemini oluşturmuştur. Veriler; paylaşım sıklığı, konu dağılımı, haber türü, etkileşim düzeyi ve gündemle ilişki gibi ölçülebilir değişkenler çerçevesinde kodlanarak değerlendirilmiştir. Çalışmanın temel varsayımı, X'in yalnızca haberin hızlı biçimde yayıldığı bir mecra olmadığı; aynı zamanda hangi konuların görünür olacağını, hangi başlıkların tartışılacağını ve hangi aktörlerin kamusal gündemde öne çıkacağını etkileyen bir gündem alanı oluşturduğu yönündedir. Bu yönüyle araştırmada sosyal medya haberciliği, haber dağıtım sürecinin ötesinde, dijital ortamda kamusal gündemin kurulması ve yeniden dolaşıma sokulması bakımından ele alınmıştır. X'in gazetecilik pratikleri, medyalar arası etkileşim ve kamuoyu gündeminin oluşumu bakımından üstlendiği rol; paylaşım sıklığı, konu dağılımı, haber türü, etkileşim düzeyi ve gündemle ilişki değişkenleri üzerinden nicel olarak değerlendirilmiştir.
Anahtar kelimeler: Gündem belirleme, sosyal medya haberciliği, X, nicel araştırma, dijital medya

POST-ÖZNE VE DAĞITIK KİMLİK: VERİ İZLERİ ÜZERİNDEN KURULAN PARÇALI BENLİĞİN ONTOLOJİK STATÜSÜ

POST-SUBTRACT AND DISTRIBUTED IDENTITY: ONTOLOGICAL STATUS OF THE FRAGMENTED SELF ESTABLISHED ON DATA TRACES

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Özet
Bu makale, dijital çağda bireyin artık tekil ve bütünlüklü bir özne olarak değil, veri izleri üzerinden parçalanmış ve dağıtılmış bir varlık olarak yeniden kurulduğunu ileri sürmektedir. Sosyal medya, algoritmik sistemler ve veri tabanları, bireyin kimliğini sabit bir yapı olmaktan çıkararak sürekli güncellenen ve çoğullaşan bir sürece dönüştürmektedir. Bu bağlamda çalışma, post-özne kavramını geliştirerek, kimliğin artık bedensel varlıkla sınırlı olmadığını, veri akışları içinde çoğalan bir ontolojik forma dönüştüğünü savunur. Parçalı benlik, yalnızca temsil değil, aynı zamanda yeni bir varoluş biçimidir. Makale, bu dönüşümün bireyin kendilik algısı, sorumluluk ve eylemlilik kavramları üzerindeki etkilerini analiz eder. Sonuç olarak, modern öznenin yerini veri temelli, çoğul ve akışkan bir kimlik yapısının aldığı ileri sürülmektedir.
Anahtar kelimeler: post-özne, dağıtık kimlik, veri izleri, ontoloji, dijital benlik, eylemlilik

Abstract
This article argues that in the digital age, the individual is no longer a unified subject but a fragmented and distributed entity constructed through data traces. Social media, algorithmic systems, and databases transform identity into a continuously updated and pluralized process. The study develops the concept of the post-subject, suggesting that identity extends beyond the physical body into data flows. Fragmented identity is not merely representation but a new mode of existence. The paper examines the implications of this transformation on self-perception, responsibility, and agency. It concludes that the modern subject is being replaced by a fluid, data-driven multiplicity.
Keywords: post-subject, distributed identity, data traces, ontology, digital self, agency

GIANTS AND SCAPEGOATS: HELLBLADE II LUDONARRATIVE APPROACH TO MYTHOLOGY

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Abstract
Senua's Saga: Hellblade II features many different mythological entities based on Norse Mythology, such as jötnar, draugr and the hidden folk. This article focuses on interpretation of the jötünn by making use of René Girard's scapegoat theory, the jötünn in this game are representations of grief and suffering of common people mythicized, from a grieving mother to a tyrant using the fear of people in order to keep enslave them, it can be argued that these monstrous constructs of the social consciousness have always been around and depicted differently throughout human history but in order to not sway too far from main subject, this work only focuses on how it was depicted in a video game narrative setting and how this narrative approach adapted Norse Mythology to tell a mythological story with new characters and a different perspective, the player is tasked with solving puzzles, overcoming enemies and can engage with other characters, yet story is linear where player doesn't get to make choices. This article focuses on narrative of Jötnar, whose existence only serves to terrorize the common folk yet further in the story all three giants are revealed to be scapegoats and people are made to believe in storyworlds created by their ruler, to comprehend the Godar's myth of the Jötnar, the enslaved populace is forced to perform a cognitive 'deictic shift' (Herman, 2002) making the enslaved populace and Godi's followers to shape their understanding of reality into what the oppressor wants them to believe. Senua is not exempt from this storyworld, she also engages with jötnar and the hidden folk but she can see through the deception of Godi and breaks through the veil freeing the people from their oppressors by unearthing the scapegoat's true nature
Keywords: Hellblade: Senua's Sacrifice, Senua's Saga: Hellblade II, storyworld, scapegoat, ludonarrative, Nordic mythology.

İKTİDARDAN SIĞINAĞA: PELİN ESMER'İN "GÖZETLEME KULESİ" FİLMİNDE MEKÂNSAL DÖNÜŞÜM

FROM POWER TO SANCTUARY: SPATIAL TRANSFORMATION IN PELIN ESMER'S WATCHTOWER

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Özet
Bu çalışmada, Pelin Esmer'in "Gözetleme Kulesi" (2012) adlı filminde taşra mekânının nasıl inşa edildiği, Henri Lefebvre'in üçlü mekân analizi (tasarlanan mekân, algılanan mekân ve yaşanan mekân) çerçevesinde sorgulanarak filmdeki merkezi mekânın (yangın gözetleme kulesinin) nasıl bir dönüşüm geçirdiği detaylı bir şekilde çözümlenmeye çalışılacaktır. Henri Lefebvre'in üçlü mekân analizi sinemada mekânın işlevini anlamak ve mekân ile iktidar arasındaki ilişkileri analiz etmek açısından oldukça mühimdir. Üçlü mekân analizi, film-mekân ilişkisini sosyal ve siyasal bağlamlarıyla ele almamıza imkân sağlar. Bu çalışmada; gözetleme kulesi, önce devletin ormanlık alanı denetim altına almak amacıyla tasarladığı kurumsal bir yapı olarak, yani Henri Lefebvre'in tanımladığı anlamda iktidarın mekânı olarak belirir. Ancak film ilerledikçe bu kule, karakterlerin bedensel pratikleri ve gündelik ritimleri aracılığıyla Lefebvre'in algılanan mekânına, ardından yaşanan mekânına dönüşür. Filmin başkarakterleri olan Seher'in ve Nihat'ın kuledeki birliktelikleri, varlıkları, suskunlukları ve karşılıklı tanıklıklarıyla birlikte mekânı kaçışın, hesaplaşmanın ve sığınmanın alanına dönüştürür. Filmin sonundaki gözetleme kulesi, artık başlangıçtaki aynı mekân değildir; onu farklı biçimde yaşayan bedenler onu dönüştürmüştür de aynı zamanda. Bu dönüşümde, yönetmen Pelin Esmer'in sinematografik tercihlerinin etkisi de biçimsel olarak incelenecektir. Tasarlanan mekânın iktidar normlarını aşan dönüşümü, Henri Lefebvre'in yaşanan mekânı tanımlarken vurguladığı yeniden sahiplenme ve sembolik yeniden anlamlandırma sürecine tekabül eder. Bu çalışmada, iktidarın ürettiği mekânın nasıl bedensel ve duyumsal bir deneyim alanına evrilebileceği üzerinde durularak filmdeki mekânsal dönüşüm incelenecektir.
Anahtar Kavramlar: Henri Lefebvre, mekânın üretimi, *Gözetleme Kulesi*, Pelin Esmer, mekânsal dönüşüm

Abstract
In this study, how the provincial space is constructed in Pelin Esmer's film *Watchtower* (2012) will be examined through Henri Lefebvre's spatial triad — conceived space, perceived space, and lived space — and the transformation undergone by the film's central space will be analyzed in detail. Henri Lefebvre's spatial triad is of considerable importance for understanding the function of space in cinema and for analyzing the relationships between space and power. The spatial triad enables us to address the film-space relationship within its social and political contexts. In this study, the watchtower first emerges as an institutional structure designed by the state to bring forested areas under control — that is, as a space of power in the sense defined by Henri Lefebvre. As the film progresses, however, this tower transforms into Lefebvre's perceived space, and subsequently into lived space, through the characters bodily practices and everyday rhythms. The two protagonists, Seher and Nihat, transform the space through their coexistence, presence, silences, and mutual witnessing, turning it into a site of escape, confrontation, and refuge. The watchtower at the end of the film is no longer the same space as at the beginning; the bodies that have inhabited it differently have, in turn, transformed it. The influence of director Pelin Esmer's cinematographic choices on this transformation will also be examined at the formal level.

The transformation that transcends the power norms of conceived space corresponds to the process of reappropriation and symbolic reinterpretation that Henri Lefebvre emphasizes in his definition of lived space. This study focuses on how a space produced by power can evolve into a site of bodily and sensory experience, examining the spatial transformation that unfolds throughout the film.
Keywords: Henri Lefebvre, production of space, *Watchtower*, Pelin Esmer, spatial transformation

HIGH-Q PHONONIC CRYSTAL DESIGN BASED ON DISC-SHAPED CAVITIES

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ABSTRACT
Phononic crystals are based on periodic structures made of two or more materials arranged along one-dimensional. These materials are characterized by a strong contrast in their elastic properties and density. The periodicity in the materials introduces band gap frequencies in the dispersion curves where phonons are prohibited from propagation. This property has been exploited to propose these structures as new materials to control the propagation of elastic and acoustic waves. These systems have attracted a considerable attention from science and technology point view. Similarly to photonic crystals, the interest in phononic crystals has been generated by their unique properties such as the formation of band-gaps, near zero group velocity, and anomalous dispersion (negative refraction). These properties make phononic crystals a viable choice for use in vibration and noise reduction applications as well as in the design and implementation of components for Radio Frequency Micro-Electro- Mechanical Systems including filters, resonators, and advanced signal processing functions. In this communication, we introduce a new design of cavity resonator design based on 1D phononic crystal structure. The structure is made of a corrugated AlN thin membrane; the central micro-strip line supports periodic gold disc shaped thin layer. The structure is completely different to cavity designs presented in most previous works where the cavity is obtained by removing a portion of the crystal or by changing the geometric parameters of the unit cell. In our case, the phononic crystal design remains unchanged and a disc shaped resonator was introduced as a defect. The introduced disc-shaped cavity enables the achievement of a high quality factor (High-Q), which is essential for enhancing resonance performance and signal selectivity in electroacoustic devices. The proposed design is based on materials of practical interest in electroacoustic devices technology. The membrane is made of AlN thin film that has been considered in recent years as a viable technology for the fabrication of radio frequency passive components for use in telecommunication applications.
Keywords: Phononic crystal, AlN film, Disc-shaped, High-Q.

RECENT ADVANCES AND APPLICATIONS OF PEROVSKITE-BASED DIELECTRIC MATERIALS

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Abstract
Perovskite-based materials have attracted significant attention in modern materials science because of their remarkable dielectric, electrical, magnetic, and electrochemical properties. These materials are considered highly suitable for advanced electronic and communication technologies due to their structural flexibility and multifunctional behavior. A wide variety of oxide ceramics belonging to different structural families exhibit diverse dielectric characteristics, making them important for industrial and scientific applications.
Among these materials, perovskite oxides with the general chemical formula ABO_3, where A represents mono- or divalent cations and B denotes trivalent to pentavalent ions, are especially important because of their excellent dielectric performance. Many perovskite ceramics possess high dielectric constant, low dielectric loss, high quality factor, and stable frequency- and temperature-dependent properties. These characteristics make them highly useful for microwave resonators, oscillators, filters, wireless communication systems, and ferroelectric devices.
Structurally, perovskites exhibit a cubic arrangement in which oxygen ions form corner-sharing octahedra surrounding the B-site cations, while A-site cations occupy larger interstitial positions within the lattice. This unique crystal structure is mainly responsible for their outstanding physical and electrical properties. Recent investigations on lead-free ternary perovskite compounds have revealed promising dielectric and ferroelectric behavior, encouraging the development of environmentally friendly electronic materials.
Extensive research has demonstrated that perovskite-type oxides show several technologically important phenomena, including ferroelectricity, piezoelectricity, magnetoresistance, superconductivity, ionic conductivity, and magnetoelectric coupling. Due to these multifunctional properties, perovskite materials are widely applied in memory storage devices, sensors, actuators, transducers, electro-optic systems, and energy-related technologies. Therefore, perovskite-based dielectric materials continue to be an active area of research for next-generation electronic and functional devices.
Keywords: Perovskite materials, Dielectric properties, Oxide ceramics, Ferroelectricity, Piezoelectricity, Magnetoresistance, Lead-free ceramics, ABO_3 structure, Ionic conductivity, Microwave devices, Electro-optic materials, Wireless communication.

MAGNETIC PROPERTIES OF A FERRIMAGNETIC MIXED-SPIN TRILAYER KAGOME NANOSTRUCTURE: AN EFFECTIVE FIELD THEORY STUDY

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ABSTRACT
This study presents a theoretical investigation of a ferrimagnetic mixed-spin trilayer Kagome nanostructure, focusing on the magnetic behaviors arising from the competition between exchange interactions, crystal field anisotropy, and external magnetic field. The main objective is to explore compensation phenomena, reentrant behavior, and magnetization plateaus, which remain significant challenges in the study of frustrated magnetic nanostructures.
The methodology is based on the Effective Field Theory (EFT) with correlations, applied to an Ising model with mixed spins S = 3/2 and σ = 1, arranged in an A-B-A trilayer configuration. Magnetization curves, phase diagrams, and magnetization plateaus were systematically analyzed as a function of the relevant Hamiltonian parameters.
The results demonstrate the emergence of single and multiple compensation temperatures, field-induced reentrant ferrimagnetic behavior, and well-defined low-temperature magnetization plateaus corresponding to quantized spin configurations. These findings highlight the strong influence of intralayer and interlayer couplings, as well as anisotropy parameters, on the overall magnetic response of the system.
Overall, this work contributes to advancing knowledge in magnetic nanostructures and frustrated lattice systems, with potential applications in spintronics, high-density magnetic memory, and magneto-optical storage devices.
Keywords*:* Kagome nanostructure. Trilayer system. Mixed-spin Ising model. Effective Field Theory. Compensation temperature. Magnetization plateaus. Spintronics.

THEORETICAL INVESTIGATION OF NATURAL DYE PRODUCED BY AMAZONIAN FUNGUS: APLICATION IN DYE-SENSITIZED SOLAR CELLS

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ABSTRACT
Dye-sensitized solar cells (DSSCs) are part of the third generation of photovoltaic technologies and are currently considered a promising solution to the global energy challenge. These cells require the use of sensitizers, and the use of natural dyes for this purpose is a sustainable alternative capable of reducing manufacturing costs. In this study, DFT and TD-DFT methods were employed to investigate the electronic and optical properties of an azaphilones-class dye recently obtained from an Amazonian strain of the fungus *Talaromyces amestolkiae*. Analysis of the dye's frontier molecular orbitals indicates that its HOMO orbital has an energy lower than the reduction potential of the I^-/I_3^- (iodide/triiodide) redox couple, and its LUMO orbital has a higher energy than the conduction band of the TiO_2 (titanium dioxide) semiconductor. The theoretical UV-Vis spectrum indicates pronounced absorption around 400 nm. The results suggest that the dye can be used as a sensitizer in DSSCs. However, the limited coverage of the visible spectrum in acetonitrile solvent may require the use of a co-sensitizer to improve device efficiency. Therefore, the study supports the use of natural dyes in dye-sensitized solar cells and the use of computational methods in the search for sensitizers to develop more environmentally friendly solar energy technologies.
Keywords: Dye-sensitized solar cells, Natural dye, Density functional calculations.

FIRST-PRINCIPLES INVESTIGATION OF TIFE AND TIFEH_X HYDRIDES FOR SOLID-STATE HYDROGEN STORAGE

ELECTRONIC, MECHANICAL, VIBRATIONAL, THERMODYNAMIC, AND OPTICAL PROPERTIES

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Abstract
TiFe-based intermetallic hydrides are promising candidates for reversible solid-state hydrogen storage because of their hydrogen absorption capability, structural robustness, and accessible constituent elements. In this work, density functional theory calculations were used to investigate TiFe and its hydrogenated phases TiFeH, $TiFeH_2$, and $TiFeH_4$. The structural, mechanical, electronic, vibrational, thermodynamic, and optical properties were systematically analyzed using first-principles methods, density functional perturbation theory, and the quasi-harmonic approximation. The results show that hydrogen incorporation causes lattice expansion and symmetry modification while preserving mechanical and dynamical stability. The elastic constants satisfy the Born stability criteria, and the phonon spectra show no imaginary frequencies, confirming the stability of the investigated hydrides. The calculated mechanical parameters indicate ductile behavior, which is favorable for repeated hydrogen absorption and desorption cycles. Thermodynamic analysis based on the temperature-dependent Gibbs free energy suggests desorption temperatures of approximately 450 K for TiFeH, 510 K for $TiFeH_2$, and 557 K for $TiFeH_4$ under 10 bar H_2 pressure. Among the studied compounds, $TiFeH_4$ reaches the highest gravimetric hydrogen capacity, with a value of 3.74 wt%. Hydrogenation also modifies the electronic structure, dielectric response, and optical absorption behavior of TiFe, indicating possible complementary applications in hydrogen sensing and thermal regulation. These findings provide theoretical guidance for the development of TiFe-based hydrides as stable and efficient materials for solid-state hydrogen storage.

Keywords: TiFe hydrides, First-principles calculations, Hydrogen storage, Density functional theory, Thermodynamic stability

DIGITAL TWIN READINESS IN MINING OPERATIONS: A STRATEGIC FRAMEWORK FOR SAFER, SMARTER, AND MORE RESILIENT MINES

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Abstract
Digital twin technology is emerging as a transformative approach for improving visibility, control, and resilience in complex mining operations. By creating dynamic virtual representations of physical mine assets, processes, and environments, digital twins can support real-time monitoring, predictive maintenance, scenario evaluation, and risk-informed decision-making. However, many mining operations remain at an early stage of digital twin readiness because of fragmented data systems, limited sensor integration, uncertain business value, and insufficient organizational preparedness. This conceptual paper develops a strategic framework for assessing and improving digital twin readiness in mining. The framework is structured around five interrelated dimensions: data infrastructure, physical asset connectivity, analytical capability, operational integration, and governance maturity. It explains how these dimensions can enable safer equipment operation, improved underground and surface monitoring, better ventilation control, optimized production planning, and enhanced emergency preparedness. The paper also discusses barriers to implementation, including interoperability limitations, cybersecurity concerns, workforce skill gaps, and the difficulty of integrating legacy systems with advanced digital platforms. The proposed framework contributes to mining digitalization literature by shifting the focus from technology adoption alone to organizational readiness and lifecycle value creation. The paper concludes that digital twins should be understood not merely as visualization tools, but as decision-support ecosystems capable of improving safety, sustainability, and resilience across modern mining operations.
Keywords: Digital twin; Mining operations; Smart mines; Operational resilience; Predictive maintenance; Mine safety.

AI-ENABLED SUSTAINABLE MINING: A CONCEPTUAL FRAMEWORK FOR INTEGRATING OPERATIONAL EFFICIENCY, SAFETY, AND ENVIRONMENTAL STEWARDSHIP

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Abstract
The mining sector is undergoing a profound transformation driven by the increasing demand for critical minerals, stricter environmental expectations, and the rapid advancement of artificial intelligence technologies. Although AI is widely promoted as a tool for productivity improvement, its broader role in aligning operational efficiency with safety, environmental stewardship, and long-term sustainability remains insufficiently integrated in many mining strategies. This conceptual paper proposes an AI-enabled sustainable mining framework that links predictive analytics, intelligent monitoring, automated decision support, and environmental risk management across the mining value chain. The framework emphasizes how machine learning, computer vision, sensor networks, and real-time data platforms can support orebody characterization, equipment maintenance, hazard identification, energy optimization, water management, and waste reduction. Rather than treating AI as a purely technical upgrade, the paper positions it as a strategic enabler of responsible mining governance. The proposed framework also highlights key implementation conditions, including data quality, interdisciplinary collaboration, workforce readiness, cyber-risk management, and ethical oversight. The contribution of this paper lies in synthesizing AI applications into an integrated sustainability-oriented model that can guide researchers, mine managers, engineers, and policymakers. The study concludes that AI adoption in mining should move beyond isolated automation projects toward holistic systems that improve safety, reduce environmental burdens, and enhance the social legitimacy of mineral extraction.
Keywords: Artificial intelligence; Sustainable mining; Predictive analytics; Mine safety; Environmental stewardship; Digital transformation.

CYBERSECURITY AND DATA GOVERNANCE CHALLENGES IN AUTONOMOUS AND CONNECTED MINING SYSTEMS

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Abstract
The rapid digitalization of mining has introduced advanced technologies such as autonomous haulage systems, remote operation centers, industrial Internet of Things platforms, cloud-based analytics, artificial intelligence, and real-time monitoring networks. These technologies can improve productivity, safety, and operational control, but they also expand the cyber-physical attack surface of mining operations. A cybersecurity failure in a connected mine may disrupt production, compromise sensitive geological or operational data, damage equipment, threaten worker safety, or undermine environmental monitoring systems. This conceptual paper examines cybersecurity and data governance challenges in autonomous and connected mining systems. It identifies key risk domains, including sensor vulnerabilities, communication network exposure, unauthorized access to operational technology, data integrity failures, supply-chain risks, and insufficient coordination between information technology and operational technology teams. The paper also discusses governance principles required for secure digital mining, including data ownership, access control, incident response planning, workforce awareness, vendor accountability, and integration of cybersecurity into safety management systems. The contribution of this paper lies in positioning cybersecurity as a core component of responsible mining digitalization rather than a secondary technical concern. The paper concludes that as mining becomes increasingly autonomous and data-dependent, resilience will depend not only on advanced technologies, but also on strong governance, cyber-risk culture, and continuous protection of digital and physical mining assets.
Keywords: Cybersecurity; Connected mining; Autonomous systems; Data governance; Operational technology; Cyber-physical risk.

ARTIFICIAL INTELLIGENCE AND ECONOMIC GROWTH IN INDIA

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Abstract
Artificial Intelligence (AI) is playing an important role in economic growth in India. The rapid adoption of AI technologies across industries such as manufacturing, healthcare, banking, education, agriculture, and logistics is transforming the way businesses operate and deliver services. AI helps organisations improve productivity, reduce operational costs, enhance decision-making, and provide better customer experiences. As India continues its journey toward becoming a global economic powerhouse, AI is expected to play a significant role in accelerating innovation, competitiveness, and sustainable development. This research examines the relationship between Artificial Intelligence and economic growth in India. It explores how AI contributes to increased efficiency, business expansion, employment opportunities, and technological advancement. The research also highlights the role of government initiatives, digital infrastructure, and investments in supporting AI adoption across various sectors. The findings indicate that AI has the potential to increase economic output by automating routine tasks, improving resource utilisation, and enabling data-driven decision-making. Furthermore, AI supports the development of new products, services, and business models, creating opportunities for entrepreneurship and economic diversification. Investment in digital skills, responsible AI governance, and inclusive technology policies will be essential for maximising the benefits of AI while minimising potential risks. The research concludes that Artificial Intelligence has emerged as a powerful tool for promoting economic growth and improving national competitiveness. By embracing AI-driven innovation and advancing inclusive development, India can strengthen its position in the global economy and achieve long-term, sustainable growth.
Keywords: Artificial Intelligence, Economic Growth, Digital Transformation, Innovation, India.

DECARBONIZATION AND JUST TRANSITION IN WESTERN MACEDONIA: ECONOMIC AND SOCIAL IMPACTS ON REGIONAL DEVELOPMENT

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Abstract
This paper examines the economic and social consequences of the accelerated lignite phase-out in the Region of Western Macedonia, one of the most fossil-fuel-dependent areas of the European Union. Drawing on quantitative indicators of Gross Value Added (GVA), employment and demographic dynamics for the period 2013–2023, alongside qualitative analysis of policy documents and the Just Transition Development Plan, the study constructs an integrated analytical framework that combines just transition theory, path dependency, and regional resilience. The empirical evidence reveals a markedly asymmetrical structural shock: total regional GVA declined by 22.1%, while sectoral output in mining and energy collapsed by 58.1%, against a national GVA increase of 24.2% over the same period. Employment in the lignite sector has contracted sharply, demographic decline approached 17% on a cumulative basis, and renewable energy expansion has so far failed to substitute, either quantitatively or qualitatively, the jobs lost. The analysis identifies a dual structural deficit, namely compressed transition timelines combined with constrained institutional capacity, that distinguishes the Greek case from comparable European transition regions such as the Ruhr, Silesia and Lusatia. Despite substantial financial allocations through the Just Transition Fund, commitment rates of approximately 39% and disbursement rates of only 12–18% indicate that institutional absorption rather than funding availability constitutes the primary binding constraint. The paper argues that the rapid pace of decarbonization risks outstripping local adaptive capacity, generating new patterns of regional divergence within Greece. It contributes to the literature on “trapped regions” by introducing the concept of a compressed transition under institutional constraints and by providing empirical evidence from a Southern European context that has so far received limited scholarly attention. Policy implications point toward a fundamental recalibration from sectoral substitution toward place-based productive transformation, anchored in long-term planning, reskilling, social participation and institutional strengthening across European, national and regional governance levels.
Keywords: lignite phase-out; just transition; Western Macedonia; path dependency; regional resilience; institutional capacity; trapped regions

THE CAUSAL RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND NON-OIL EXPORT DEVELOPMENT IN IRAN

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Abstract
This study examines the causal relationship between financial development and non-oil export development in Iran. Employing two prominent indicators of financial development — Domestic Credit to Private Sector as a percentage of GDP (DCPS) and Broad Money Supply as a percentage of GDP (M2/GDP) — and utilizing bivariate Vector Autoregression (VAR) and Vector Error Correction Model (VECM) frameworks, the empirical results strongly support the existence of a unidirectional causality running from financial development to non-oil exports, confirming the supply-leading hypothesis. Both financial development indicators exert a positive and statistically significant impact on non-oil exports. The Johansen cointegration test confirms the presence of a long-run equilibrium relationship between the variables. Furthermore, Variance Decomposition and Impulse Response Function analyses reveal that shocks to financial development, especially to private sector credit, account for a substantial portion of the forecast error variance in non-oil exports over the medium and long term. These findings underscore the crucial role of a well-developed financial system in enhancing export capacity, improving competitiveness, and facilitating resource allocation toward export-oriented sectors. The study highlights that financial deepening, particularly through better access to credit, is more influential than mere monetary expansion in promoting non-oil exports. From a policy perspective, financial liberalization, banking sector reforms, and directing credit toward productive and export-oriented firms are essential for achieving export diversification and reducing reliance on oil revenues in the Iranian economy.
Keywords: Financial Development, Non-Oil Exports, Supply-Leading Hypothesis, Granger Causality, Cointegration, Impulse Response Functions, Iran

PERSISTENCE, INSTITUTIONS, AND DEVELOPMENT: A MULTI-METHOD PANEL ANALYSIS OF CORRUPTION DETERMINANTS IN EUROPEAN COUNTRIES

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Abstract
This article investigates the structural and institutional determinants of corruption across 32 European countries over the period 2002–2023, employing a progressive multi-method panel econometric strategy. The analysis advances from static pooled OLS and two-way fixed-effects specifications to dynamic autoregressive models, a panel error-correction model (ECM), Blundell–Bond System GMM, and long-run heterogeneous estimators (FMOLS-MG, AMG, DOLS-MG, CCE-MG), while addressing cross-sectional dependence, heterogeneous slopes, and endogeneity concerns throughout.
The results reveal that corruption exhibits strong temporal persistence, with an autoregressive coefficient of 0.854 and a long-run multiplier of approximately 4.5×, implying that institutional reforms require a sustained implementation horizon of 7–10 years to materialize fully. Government effectiveness emerges as the most robust determinant, remaining statistically significant at the 1% level across all main specifications. At the same time, economic development exerts a large and consistent negative effect on corruption in both the short and long run. ECM estimation confirms that approximately 60% of deviations from long-run equilibrium are corrected within one year, with short-run dynamics driven primarily by changes in GDP, government effectiveness, and gross fixed capital formation. Income inequality is positively associated with corruption, consistent with political economy mechanisms linking unequal social structures to weaker institutional accountability. Endogeneity diagnostics confirm the presence of simultaneity bias in the relationship between government effectiveness and capital formation, while IV-2SLS estimates reveal substantial discrepancies relative to baseline fixed-effects coefficients. The findings are interpreted as robust conditional associations and carry implications for sustained, institution-focused anti-corruption policy within the European context.
Keywords: corruption determinants, panel data, dynamic fixed effects, error correction model, System GMM, long-run heterogeneous estimators.

THE EFFECTIVENESS OF CARBON TAX POLICY IN REDUCING ENVIRONMENTAL DAMAGE IN INDONESIA

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Abstract
Introduction and Purpose: Greenhouse gas emissions from fossil fuel consumption have become a major cause of environmental degradation and climate change in Indonesia. To address this issue, the Indonesian government introduced carbon taxation as an environmental fiscal policy aimed at reducing emissions and promoting cleaner energy use. However, concerns regarding its economic impact and implementation challenges have raised questions about its effectiveness. Therefore, this study aims to evaluate the effectiveness of carbon tax implementation in reducing environmental damage and supporting sustainable development in Indonesia.
Methods: This study employed a qualitative descriptive approach using a literature review method. Secondary data were collected from scientific journal articles, government regulations, policy reports, and other relevant publications related to carbon taxation and environmental sustainability in Indonesia. The collected data were analyzed using descriptive and content analysis techniques to identify key themes, evaluate the effectiveness of carbon tax policies, and examine the opportunities and challenges associated with their implementation.
Results: The findings indicate that carbon taxation has the potential to reduce greenhouse gas emissions and support Indonesia's transition toward a low carbon economy. Carbon taxes can encourage energy efficiency, promote renewable energy development, and influence industrial and consumer behavior toward more environmentally responsible practices. However, the current implementation remains limited due to relatively low carbon prices, restricted sectoral coverage, and varying levels of industrial readiness. Challenges related to policy enforcement, business competitiveness, and public acceptance were also identified as factors affecting the effectiveness of carbon tax implementation.
Discussion and Conclusion: Carbon taxation has the potential to reduce environmental damage and support Indonesia's transition toward a low-carbon economy. However, its effectiveness depends on strong regulations, effective implementation, renewable energy development, and public support. Therefore, carbon taxes should be integrated with broader environmental policies to achieve sustainable development and emission reduction targets.
Keywords: Carbon Tax, Environmental Damage, Carbon Emissions, Indonesia, Tax Policy, Green Economy.

EMERGING DIGITAL TECHNOLOGIES AND ECONOMIC DEVELOPMENT IN THE EUROPEAN UNION: A LITERATURE REVIEW

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Abstract
Digital transformation has become one of the most significant drivers of economic and social change in the twenty-first century. The rapid diffusion of digital technologies, including artificial intelligence, cloud computing, big data analytics, the Internet of Things, digital platforms, and e-health solutions, is fundamentally reshaping production systems, business models, public administration, and citizens' daily lives. Within the European Union, digitalization has been positioned as a strategic priority for achieving sustainable economic growth, strengthening competitiveness, improving public services, and reducing structural disparities among member states.
This paper aims to examine the relationship between emerging digital technologies and economic development in the European Union through a comprehensive review of theoretical and empirical literature. The study synthesizes recent academic contributions addressing digital transformation, digital economy development, competitiveness, innovation, productivity growth, sustainability, and digital convergence among EU countries. Particular attention is paid to the role of digital infrastructure, digital skills, enterprise digitalization, digital public services, and emerging technologies as determinants of economic performance.
The findings indicate that digitalization contributes positively to economic growth through multiple channels, including productivity improvements, innovation enhancement, business process optimization, market expansion, and increased efficiency in public administration. However, the literature also highlights persistent challenges, such as the digital divide, unequal levels of technological adoption across member states, cybersecurity risks, and disparities in digital skills. Evidence suggests that while digitally advanced countries benefit significantly from technological progress, less developed regions may face difficulties in fully exploiting digital opportunities, potentially increasing existing economic gaps.
The paper concludes that digital transformation represents both an opportunity and a challenge for the European Union. Future development strategies should focus on strengthening digital infrastructure, promoting digital inclusion, supporting innovation ecosystems, and accelerating the adoption of advanced digital technologies in both the public and private sectors.
Keywords: Digital transformation; Digital economy; Economic development; European Union; Artificial Intelligence; Digitalization; DESI; Innovation

CATALOGS AS A TOOL FOR TOURISM PROMOTION: CASE STUDY - MUNICIPALITY OF PRIZREN

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Abstract
Kosovo is located on the Balkan Peninsula, at an approximate aerial distance of 100 km from the Adriatic coast. It is located at the crossroads of important trans-Balkan routes that connected Rome and Constantinople - Istanbul. Due to its favorable geographical position. An area that historically served as an important crossroads for different civilizations and empires, which have left valuable traces reflected in archaeological sites, cultural monuments, and traditional architecture. In Kosovo, lived the Dardanian tribe from the Illyrian Kingdom, who were known for building castles in mountainous areas. At the same time, the mountainous relief and rich biodiversity of the country provide important opportunities for the development of sustainable tourism, particularly hiking, ecotourism, and nature-based activities. This study aims to analyze the role of historical heritage in promoting sustainable tourism development, with a particular focus on the municipality of Prizren as one of the most representative cultural and historical regions in Kosovo.

The research methodology is based on the analysis of official documents and the application of Geographic Information Systems (GIS) as an advanced method for developing tourism catalogs and promoting tourism through drone-based imagery

The findings are expected to contribute to the promotion and sustainable management of cultural and natural heritage, while also increasing the international visibility of Kosovo's tourism potential.

Keywords: Kosovo, catalogs, GIS, archeological and historical facts, promote tourism.

ATTITUDES, READINESS, AND BARRIERS TO CYBERSECURITY PRACTICES AMONG BUSINESS EDUCATION STUDENTS IN NIGERIAN TERTIARY INSTITUTIONS

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Abstract
Despite the growing prevalence of cyber threats targeting university students, limited empirical research has examined the cybersecurity attitudes, practical readiness, and barriers affecting Business Education students in Nigerian tertiary institutions. This study, therefore, evaluated these dimensions to determine whether positive attitudes translate into actionable preparedness. A descriptive cross-sectional survey was conducted among 71 Business Education students recruited from federal colleges of education and universities in Nigeria using stratified and convenience sampling. Data were collected via a structured questionnaire comprising demographic items, Likert-scale questions measuring attitude (10 items) and readiness (10 items), barrier assessment (5 items), and three open-ended qualitative questions. Quantitative data were analyzed using descriptive statistics (frequencies and percentages) and inferential statistics (one-sample t-tests and independent t-tests), while qualitative responses were examined through thematic analysis. The results revealed that students held strongly positive attitudes toward cybersecurity, with over 87% agreeing that cybersecurity is valuable to their business education training and 90% expressing willingness to attend digital safety workshops. However, practical readiness was markedly lower: only 52% knew the specific steps to take if their account was hacked, and just 49% felt equipped to deal with basic cyber threats. The one-sample t-test confirmed that the mean attitude score (4.31) was significantly above the neutral point of 3.0 ($t = 18.42$, $p < .001$), while the mean readiness score (3.89) was also significantly above neutral ($t = 9.87$, $p < .001$), though substantially lower than the attitude score. Qualitative analysis identified major barriers including lack of practical skills and training ("I don't know what to do when it happens"), inadequate institutional support (only 32% agreed their institution provides adequate cybersecurity tools), and uncertainty in identifying sophisticated threats. Despite these gaps, several students reported successful experiences preventing phishing attacks by verifying sender email addresses and enabling two-factor authentication. The study concludes that Business Education students in Nigerian tertiary institutions exhibit favourable cybersecurity attitudes but lack corresponding practical readiness, creating a critical attitude-action gap. Institutional interventions—including hands-on simulation-based training, clear cyber-incident reporting channels, and provision of accessible security tools—are urgently needed to bridge this gap and foster a culture of proactive digital safety among future business professionals.

Keywords: Cybersecurity attitudes, cybersecurity readiness, barriers to cybersecurity, Business Education students, Nigerian tertiary institutions

ACADEMIC FREEDOM OR FREEDOM IN TEACHING TECHNIQUES? THAT IS THE QUESTION THE REALITY OF LATIN AMERICA AND THE INTERNATIONALIZATION OF THE CURRICULUM

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Abstract
The aim of this study is to analyze the misinterpretation of the concept academic freedom and freedom of teaching techniques by the different educational actors in Latin America. In Latin America, academic freedom is conceived and understood differently under the idea that the law is interpreted. In the largest and oldest university in Mexico, the first precedent was established in 1944 in one article that teaching is possible according to the principle of free teaching techniques and research, idea that was accepted and traveled to the south part of the globe. But it is misconceived, academic freedom is about not being subjected to institutional, political or government censorship whereas freedom in teaching techniques is a result of academic freedom, where professors can teach not limited to doctrines and without interference of the government in academia affairs. This freedom also involves selecting the best teaching techniques according to the students' needs, in an ethical and professional way. In Chile, there is a constant struggle between universities and the government to respect and foster the freedom of teaching techniques, which can be deffended when professors demonstrate a capacity in implementing different teaching and evaluation methodologies that allows feedback, in other words, that universities alone must maintain their autonomy. In Colombia, this autonomy is threatened by external members in university councils, external funds or budgets, rankings and classifications according to the quality of the programs, the acceptance of radical or subversive students, the embezzlement of the university finances by some of their administrators, among others. In Mexico, as in other Latin American countries, this autonomy is in peril due to the philosophy or doctrine dictated by each president and the people in his administration. In Mexico, this idea changes every six years. In the current administration, the Secretary of Education has stated that professors will follow the New Mexican School guidelines which contradicts with the precept of autonomy, this promoted philosophy is unclear as the government people do not understand it, they do not know how to explain it, least how to implement it. However, it is forcing university administrators to implement it in their universities undermining their autonomies, thus directly affecting academic freedom and freedom in teaching techniques, setting us back in time to a period of dictatorship in terms of what to teach and what to discard.
Keywords: Internationalization of the curriculum, Academic freedom, Freedom of speech, Teaching techniques

PERCEIVED IMPACT OF EARLY MARRIAGE ON EDUCATIONAL ATTAINMENT AMONG ADOLESCENTS IN BOSSO LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

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Abstract
This study examined the perceived impact of early marriage on the educational attainment of adolescents in Bosso Local Government Area of Niger State. The study was guided by two research questions and two null hypotheses tested at 0.05 level of significance. A descriptive survey research design was adopted for the study. The population of the study comprised 5,774 senior secondary school students (SSI–SSIII) from eighteen public secondary schools in Bosso Local Government Area. A sample size of 361 students was selected from an accessible population of 2,499 students drawn from six public secondary schools using simple random sampling technique. Two research instruments titled Perceived Impact of Early Marriage Questionnaire (PIEMQ) and Educational Attainment Questionnaire (EAQ) were used for data collection. The instruments were validated by experts in Educational Psychology, Measurement and Evaluation, and Guidance and Counselling at Ibrahim Badamasi Babangida University, Lapai. Reliability of the instruments was established using Cronbach Alpha method through a pilot study, yielding an acceptable reliability coefficient of 0.70 and above. Data collected were analyzed using frequency counts, percentages, mean, and standard deviation to answer the research questions, while Chi-square (χ^2) statistical tool was used to test the hypotheses. The findings revealed that age at marriage, and educational status, have significant impacts on early marriage and the educational attainment of adolescents. Specifically, early marriage was found to negatively affect school completion, academic progress, and access to higher education. The study concluded that early marriage remains a major barrier to educational attainment among adolescents in Bosso Local Government Area. It was therefore recommended that government and stakeholders should strengthen policies against early marriage, promote girl-child education, and provide economic and counselling support to adolescents to improve educational outcomes.
Keywords: early marriage, educational attainment, adolescents and Bosso Local Government Area of Niger State

CHILDREN LEARNING IN CONFLICT AND WAR: A SYSTEMATIC REVIEW OF TRAUMA, RECOVERY, AND EDUCATION

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Abstract
Education is widely acknowledged as critical to recovery in conflict and war-affected contexts, but the relationship between trauma and children's learning has received insufficient attention in policy and practice. Globally, the scale of disruption is growing: according to recent Education Cannot Wait estimates, approximately 234 million children in crisis-affected settings require urgent education support, with 85 million out of school entirely. Children who are refugees or internally displaced, as well as girls and disabled children, are particularly vulnerable. Children's learning environments in Palestine, Ukraine, Syria, Afghanistan, Yemen, South Sudan, the Democratic Republic of the Congo, and Myanmar have been reshaped by prolonged exposure to violence and displacement. This paper presents a systematic review of literature published between 2010 and 2025 that investigates how trauma affects children's learning in conflict-affected settings. Studies were chosen based on predetermined inclusion and exclusion criteria, with a focus on school-aged children and their psychosocial and educational outcomes. The findings show a persistent gap between policy emphasis on access and the realities of trauma-affected students. The review advocates for holistic, child-centered approaches that prioritize well-being as the foundation of equitable and meaningful learning.
Keywords: Conflict, War, Child Trauma, Education in Emergencies, Psychosocial Recovery, Refugee Education, Systematic Review

"FEASIBILITY OF TEACHING ORGANIC REACTION MECHANISM" THROUGH VARIOUS PEDAGOGIC STRATEGIES: PERCEPTION OF SELECT TEACHERS

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Abstract
Chemistry is full of fascinating, highly abstract and complex ideas that explain how the microscopic world dictates the physical reality. Teaching abstract chemistry concepts requires bridging a gap between macro level and sub-microscopic and symbolic levels. The conventional teaching strategies are not sufficient to fulfil these needs. To resolve these issues, skills such as critical thinking, high analytical problem solving, collaborative and cooperative learning, digital literacy, and flexibility can be combined which result in innovative pedagogical approaches. Teaching Organic reaction mechanism has always been viewed as difficult to teach. Changes have been made from textbook-driven curriculum to activity-based learning for continuing meaningful learning provided in the Organic Chemistry classroom. This study aims to outline the feasibility of teaching organic reaction mechanism through various pedagogic strategies like project method, demonstration method and blended learning etc. are tried to realise evidence-based methods that promote deeper understanding and long-term retention of organic reaction mechanism. Analysis will be done by evaluation from teachers using the rating scale. 10 teachers teaching Chemistry at secondary school level will be selected purposively as sample. They will be asking to evaluate the feasibility of the prepared lesson plan by the investigator with regard to the selected pedagogic strategies. The results of the study will have implications in designing appropriate pedagogic strategies for teaching Chemistry in schools.
Keywords: Organic Chemistry, Reaction Mechanism, Teaching learning, Pedagogical strategies, Feasibility, Secondary School Teachers.

SINGLE PARENTS OF YOUNGER PRIMARY SCHOOL CHILDREN IN THE WORLD OF THE CONTEMPORARY SCHOOL

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ABSTRACT
This paper aims to examine and present how single parents of younger primary school children perceive their role in the world of the contemporary school. Our research included thirty-six single mothers and six single fathers of younger primary school children from the Republic of Serbia. We obtained results showing that single mothers and single fathers assess their role and functions in the contemporary school as good, but most of the responses of single parents imply that there is room for improving relationships both from the parents' side and from the school's side. In addition to the various obligations and life circumstances to which they are exposed, single mothers more often assess themselves as responsible and dedicated when it comes to different aspects of the contemporary school. Single mothers and single fathers identify obstacles they encounter in the world of the contemporary school and provide potential suggestions for overcoming them, whereby the actors of the contemporary school should also be informed and, through joint engagement, achieve the most successful outcomes.
Keywords: single parents, contemporary school, younger primary school children.

AYDINLATILMIŞ ONAM: NEDİR, NE DEĞİLDİR? KLİNİK BAĞLAMDA KAVRAMSAL BİR ÇERÇEVE

WHAT IS INFORMED CONSENT, AND WHAT IS NOT? A CONCEPTUAL FRAMEWORK IN THE CLINICAL CONTEXT

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Abstract
Informed consent is a negotiation process in which the patient, after being informed by the physician about the planned intervention or treatment, voluntarily and consciously agrees or refuses. This process has both legal and ethical dimensions, and in clinical practice, there are instances in which it deviates from its ethical core. In this context, it is also important to understand exactly what informed consent means and what it does not. The aim of this study is to outline the conceptual framework of informed consent and then address common misconceptions in clinical practice, specifically what consent is not. By reviewing the medical and dental literature, implicit or explicit references to what consent is not in clinical practice were compiled, and common misconceptions about the meaning of consent were synthesized through conceptual analysis. It is observed that these misconceptions are presented independently and scattered throughout the literature. As a result of the literature review, five common misconceptions were identified: replacing consent with signature collection, treating the provision of information as sufficient, interpreting silence and passive acceptance as consent, substituting family approval for patient consent, and using consent as a legal protection tool for the physician. Informed consent is a negotiation, with the form signing serving as the legal result, not the process itself. The literature shows that the ethical aspect of informed consent has shifted from its original purpose and is now primarily a legal instrument worldwide. The Turkish context faces similar issues: poor internalization of informed consent in education, fragmented consent processes, and absence of inter-institutional standards. Enhancing ethics education pre- and post-graduation and developing standardized consent forms by the Ministry of Health can address these institutional issues.
Keywords: informed consent, medical ethics, patient autonomy

Özet
Aydınlatılmış onam, planlanan müdahaleye veya tedaviye, hekim tarafından bilgilendirildikten sonra hastanın bilinçli ve özgür iradesiyle onay vermesini ya da reddetmesini içeren bir müzakere sürecidir. Hem yasal hem etik boyutu olan bu süreç klinik pratikte etik özünden uzaklaşan uygulamalarla karşılaşılmaktadır. Bu bağlamda aydınlatılmış onamın tam olarak ne anlama geldiği kadar ne anlama gelmediği de önem arz etmektedir. Bu çalışmanın amacı, aydınlatılmış onamın kavramsal çerçevesini özetledikten sonra, klinik pratikte yaygınlaşmış yanlış sanıları, yani onamın ne olmadığını ele almaktır. Tıp ve diş hekimliği literatürü taranarak onamın klinik uygulamada ne olmadığına dair örtük ya da açık göndermeler derlenmiş, onamın anlamına ilişkin yaygın yanlış sanılar kavramsal analiz yöntemiyle bir araya getirilmiştir. Bu yanlış sanıların literatürde birbirinden bağımsız ve dağınık olarak yer aldığı görülmektedir. Literatür taraması sonucunda beş yaygın yanlış sanı saptanmıştır: imza almanın onam yerine geçirilmesi, bilgi vermenin yeterli sayılması, sessizliğin ve pasif kabulün rıza olarak yorumlanması, aile rızasının hasta onamının yerine geçirilmesi ve onamın hekimin kendini hukuken koruma aracı olarak araçsallaştırılması. Onam bir müzakere sürecidir; formun imzalanması bu sürecin hukuki sonucudur, kendisi değil. Literatür, dünya genelinde onamın etik boyutundan uzaklaşıldığını ve hukuki bir araca indirgendiğini ortaya koymaktadır. Türkiye bağlamı da bu örüntülerden bağımsız değildir. Tıp ve diş hekimliği eğitiminde onamın yeterince içselleştirilememesi, iş yükünün süreci bölmesi ve onam formu içeriğine ilişkin ulusal düzeyde bağlayıcı bir standardın henüz oluşturulamamış olması başlıca yapısal sorunlar olarak öne çıkmaktadır. Mezuniyet öncesi ve sonrası etik eğitiminin güçlendirilmesi ile Sağlık Bakanlığı tarafından branş bazında standart onam formlarının geliştirilmesi bu sorunların kurumsal düzeyde çözümüne katkı sağlayabilir.
Anahtar kelimeler: aydınlatılmış onam, tıp etiği, hasta otonomisi

YOUTUBE PLATFORMUNDA YER ALAN KULAK İZİ ALMA VİDEOLARININ ODYOLOJİK UYGULAMALAR AÇISINDAN İNCELENMESİ VE KALİTE ANALİZİ

ANALYSIS OF EAR IMPRESSION TAKING VIDEOS ON YOUTUBE IN TERMS OF AUDIOLOGICAL APPLICATIONS AND QUALITY ASSESSMENT

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ABSTRACT

The widespread adoption of digital technologies and the internet has significantly transformed access to and learning of health-related information. In particular, video-sharing platforms such as YouTube have become common sources of information for both patients and healthcare professionals in health education. However, the absence of scientific peer-review or formal editorial oversight for content published on these platforms raises important concerns regarding information quality and reliability. In this context, the educational adequacy and accuracy of videos on clinically critical procedures such as ear impression taking are of particular importance. The aim of this study was to evaluate the content quality, reliability, and educational value of YouTube videos on ear impression taking, and to examine the relationship between video metrics (views, likes, comments, duration) and quality indicators (Modified DISCERN, Global Quality Scale, and Content Score). In this cross-sectional study, 15 videos meeting the inclusion criteria were analyzed. Videos were independently assessed by two reviewers using standardized evaluation scales, and the resulting data were analyzed using statistical methods. The findings revealed strong correlations among engagement metrics; however, these metrics were not significantly associated with content quality. In contrast, a high level of agreement was found among the quality assessment tools used. Additionally, no significant differences were observed between institutional and individual sources in terms of either engagement or quality. In conclusion, popularity indicators on YouTube do not reflect the content quality of ear impression taking videos, whereas standardized quality assessment tools provide consistent results. These findings highlight the importance of using objective and standardized criteria in the evaluation of digital health content.
Keywords: YouTube, ear impression taking, digital health, content quality, Modified DISCERN, Global Quality Scale (GQS)

ÖZET

Dijital teknolojilerin ve internetin yaygınlaşması, sağlıkla ilgili bilgiye erişim ve öğrenme süreçlerini önemli ölçüde dönüştürmüştür. Özellikle YouTube gibi video paylaşım platformları, sağlık eğitiminde hem hastalar hem de sağlık profesyonelleri için yaygın bir bilgi kaynağı hâline gelmiştir. Ancak bu platformlarda yer alan içeriklerin herhangi bir bilimsel denetim veya hakemlik sürecinden geçmemesi, bilgi kalitesi ve güvenilirliği açısından önemli sorunları beraberinde getirmektedir. Bu bağlamda, kulak izi alma gibi klinik açıdan kritik bir uygulamaya yönelik videoların eğitsel yeterliliği ve doğruluğu özel bir önem taşımaktadır. Bu çalışmanın amacı, YouTube'da yer alan kulak izi alma videolarının içerik kalitesini, güvenilirliğini ve eğitsel değerini değerlendirmek; ayrıca video metrikleri (izlenme, beğeni, yorum, süre) ile kalite göstergeleri (Modifiye DISCERN, Global Kalite Ölçeği ve İçerik Skoru) arasındaki ilişkiyi incelemektir. Kesitsel tasarıma sahip çalışmada, belirlenen kriterleri karşılayan 15 video analiz edilmiştir. Videolar iki bağımsız değerlendirici tarafından standart ölçekler kullanılarak puanlanmış ve elde edilen veriler istatistiksel yöntemlerle analiz edilmiştir. Bulgular, etkileşim metrikleri arasında güçlü ilişkiler olmasına rağmen bu metriklerin içerik kalitesi ile anlamlı bir ilişki göstermediğini ortaya koymuştur. Buna karşılık, kullanılan kalite ölçekleri arasında yüksek düzeyde uyum saptanmıştır.

Ayrıca kurumsal ve bireysel kaynaklı videolar arasında hem etkileşim hem de kalite açısından anlamlı fark bulunmamıştır. Sonuç olarak, YouTube'da kulak izi alma videolarında popülerlik göstergelerinin içerik kalitesini yansıtmadığı, buna karşın kalite değerlendirme araçlarının tutarlı sonuçlar verdiği belirlenmiştir. Bu bulgular, sağlıkla ilgili dijital içeriklerin değerlendirilmesinde objektif ve standartlaştırılmış ölçütlerin kullanımının önemini ortaya koymaktadır.
Anahtar kelimeler: YouTube, kulak izi alma, dijital sağlık, içerik kalitesi, Modifiye DISCERN, GQS

BETAİN VE L-KARNİTİNİN METABOLİK SENDROM İLE İLİŞKİLİ KARDİYOVASKÜLER RİSK FAKTÖRLERİ ÜZERİNDEKİ FAYDALI ETKİLERİ

BENEFICIAL EFFECTS OF BETAINE AND L-CARNITINE ON CARDIOVASCULAR RISK FACTORS ASSOCIATED WITH METABOLIC SYNDROME

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Abstract
Betaine and L-carnitine, naturally occurring amino acid derivatives, possess significant biological potential, such as anti-aging properties, antioxidant activities, regulation of energy metabolism, reduction of oxidative stress, and therapeutic effects in the management of neurodegenerative disorders. Metabolic syndrome is a complex cluster of cardiovascular risk factors that includes obesity, insulin resistance, hyperglycemia, hypertension, and atherogenic dyslipidemia. This paper focuses on studies investigating the role of betaine and L-carnitine in cardiovascular disease risk associated with metabolic syndrome. The data analysis showed that the amino acid derivatives counteract the pathophysiology of the condition. Betaine increased phosphorylation of hepatic insulin receptor substrate-1 and its downstream target Akt. Consumption of betaine ameliorated blood glucose levels of mice receiving a high-fat diet. Oral administration of betaine reduced the accumulation of intramyocellular lipids in high-fat diet-induced obese mice. Betaine supplementation caused a significant decrease in atherosclerotic lesion area. High doses of betaine were negatively associated with elevated total cholesterol, low-density lipoprotein cholesterol, non-high-density lipoprotein cholesterol, and remnant cholesterol. Dietary betaine intake improved systolic, diastolic, and mean blood pressure in spontaneously hypertensive rats. L-carnitine was associated with increased high-density lipoprotein cholesterol levels. It was observed to diminish fasting plasma glucose after L-carnitine intake. Dietary supplementation with L-carnitine enhanced peripheral and hepatic insulin sensitivity. L-carnitine exhibited a trend toward decreased blood pressure in individuals with obesity. Treatment of L-carnitine inhibited atherosclerotic lesion progression in hypercholesterolemic rabbits. In conclusion, betaine and L-carnitine exhibit anti-insulin resistance, hypoglycemic, hypotensive, anti-obesity, and antidyslipidemic activities. Therefore, betaine and L-carnitine may be a potential therapeutic approach for cardiometabolic risk.
Keywords: Betaine, L-Carnitine, Amino Acid Derivative, Cardiovascular Risk, Metabolic Syndrome

NÖROPEPTİTLERİN HİPERTANSİYON PATOGENEZİNDEKİ ROLÜ

THE ROLE OF NEUROPEPTIDES IN THE PATHOGENESIS OF HYPERTENSION

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Abstract
Hypertension, commonly known as raised blood pressure, is responsible for over 10 million deaths per annum worldwide. Neuropeptides, short amino acid sequences, act as modulators of arterial blood pressure. This scoping review examines the potential effects of neuropeptides on hypertension. The literature indicates that the neuropeptides play a crucial role in the pathogenesis of hypertension. The level of plasma neuropeptide Y (NPY) was markedly elevated in patients with essential hypertension compared to normotensive subjects. Increased concentration of serum neuropeptide FF (NFF) receptor 2 was observed in women with gestational hypertension. Administration of $CGRP_{8-37}$, a calcitonin gene-related peptide (CGRP) receptor antagonist, increased the blood pressure of DOC-salt hypertensive rats. Substance P (SP) could induce myocardial remodeling by modulating fetal gene expression and cardiac fibrosis in the hypertensive heart. It was found that corticotropin-releasing hormone (CRH) protein levels were enhanced in the paraventricular nucleus of spontaneously hypertensive rats. Inhalation of vasoactive intestinal peptide (VIP) reduced mean pulmonary arterial pressure in patients with primary pulmonary hypertension. C-type natriuretic peptide (CNP) plays a compensatory role in the development of pulmonary hypertension by decreasing right ventricular systolic pressure. Leptin can promote high blood pressure through activating Trpm7 channels in carotid bodies. Plasma β-endorphin in hypertensive group was significantly lower than normal group. Nesfatin-1 and galanin concentrations were lower in obese hypertensive patients as compared with control individuals. In summary, CGRP, VIP, CNP, β-endorphin, nesfatin-1, and galanin exert anti-hypertensive effects and may therefore be promising candidates for the treatment of hypertension. The elevated NPY, NFF, SP, CRH, and leptin levels contribute to the development of hypertension, suggesting that the neuropeptides are a potential therapeutic target for hypertension.
Keywords: Neuropeptide, High Blood Pressure, Pathogenesis, Anti-Hypertensive Effect

ALVEOLAR RIDGE RECONSTRUCTION USING THE KHOURY TECHNIQUE

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ABSTRACT

Introduction: Alveolar ridge resorption following tooth loss may result in inadequate bone volume for implant placement. Reconstruction of deficient ridges is often required to achieve functional and esthetic outcomes. The Khoury technique, based on the use of autogenous cortical bone plates and particulate bone grafts, has been proposed as a predictable method for alveolar ridge augmentation. This study aims to evaluate the application of the Khoury technique in maxillary alveolar ridge augmentation.

Case: A 61-year-old female patient presented to our clinic seeking dental implant treatment. Clinical examination revealed a knife-edge alveolar ridge in the left maxillary canine-premolar region, which had developed as a result of long-term edentulism following tooth extraction. To facilitate dental implant placement, a block graft was harvested from the mandibular ramus and fixed to the left maxillary canine-premolar region using two microscrews according to the Khoury technique.

Results: At the 6-month follow-up appointment, sufficient bone volume for dental implant placement was observed in the augmented area. No complications, such as infection, were observed in the surgical area, and the procedure successfully achieved its intended clinical objectives.

Conclusion: Alveolar ridge augmentation using the Khoury technique can provide predictable outcomes and may facilitate implant-supported rehabilitation in patients with insufficient bone volume.

Keyword: Alveolar Ridge Augmentation, Bone Transplantation, Dental Implantation

PRF-ASSISTED SIMULTANEOUS LATERAL SINUS FLOOR ELEVATION AND AUTOGENOUS SYMPHYSIS BLOCK GRAFTING FOR VERTICAL AND HORIZONTAL BONE AUGMENTATION IN A SEVERELY ATROPHIC POSTERIOR MAXILLA

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ABSTRACT

Objective

Adequate bone volume prior to implant placement in patients with severe bone resorption in the posterior maxilla remains a significant clinical challenge. The aim of this case report is to evaluate the clinical and radiological outcomes of simultaneous external sinus lift surgery, autogenous symphysis block grafting, and platelet-rich fibrin (PRF) application in a severely resorbed posterior maxillary region.

Case

A 36-year-old male patient presented to our clinic seeking implant-supported prosthetic rehabilitation of missing teeth. Clinical and radiographic examination revealed severe bone resorption in the right posterior maxilla in the regions of teeth #16 and #17. CBCT analysis demonstrated a residual bone height of approximately 1 mm and a bone width of approximately 2 mm. Due to insufficient bone volume, augmentation was planned.

Under local anesthesia, an external sinus lift procedure was performed using the lateral window technique. After elevation of the sinus membrane, grafting was carried out. To address the horizontal deficiency, an autogenous block graft harvested from the mandibular symphysis was adapted and fixed to the recipient site. PRF membranes were applied to support tissue regeneration. The surgical site was closed primarily and left for healing.

Results

No postoperative complications were observed. At the 5-month follow-up, CBCT evaluation showed good integration of the grafts and significant bone gain. Bone height increased to approximately 10 mm and bone width to approximately 12 mm. Sufficient bone volume was achieved for implant placement.

Conclusion

Simultaneous external sinus lift, autogenous symphysis block grafting, and PRF application represent an effective and reliable treatment approach for achieving successful bone augmentation in severely atrophic posterior maxillae.

Keywords: External Sinus Lift, Autogenous Block Graft, Symphysis Graft, Platelet-Rich Fibrin, Bone Augmentation, Dental Implant.

EXAMINATION OF VR-SUPPORTED BREAST HEALTH EDUCATION IN MEDICAL IMAGING TECHNICIAN TRAINING

VR DESTEKLİ MEME SAĞLIĞI EĞİTİMİNİN TIBBİ GÖRÜNTÜLEME TEKNİKERLİĞİ EĞİTİMİ AÇISINDAN İNCELENMESİ

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ABSTRACT

Virtual reality (VR)-supported educational applications are increasingly important in health education because they provide interactive and experience-based learning opportunities. In medical imaging technician training, the use of innovative educational models is important for improving professional awareness, increasing knowledge related to the mammography process, and strengthening practice-based learning experiences. The aim of this study was to examine VR-supported breast health education in medical imaging technician training and to determine students' evaluations regarding course content, instructional process, VR application, and general satisfaction. The study was conducted using a quantitative, descriptive, and cross-sectional design. A total of 40 students participated in the study. Of the participants, 80.0% were female, and the mean age was 19.88±1.82 years. The findings showed that students evaluated the course positively at a high level overall. The highest mean score was observed in the instructor dimension, while the lowest mean score was found in the course materials dimension. High scores in the VR dimension indicated that students had favorable perceptions toward technology-supported learning. No statistically significant differences were found according to gender, previous VR experience, or level of interest in mammography. In conclusion, VR-supported breast health education may be considered an innovative instructional approach that supports professional awareness, simulation-based readiness, and practice-oriented learning in medical imaging technician training.

Keywords: Virtual reality, breast health education, medical imaging technician training, mammography awareness, simulation-based learning

ÖZET

Sanal gerçeklik (VR) destekli eğitim uygulamaları, etkileşimli ve deneyim temelli öğrenme olanakları sunmaları nedeniyle sağlık eğitiminde giderek daha fazla önem kazanmaktadır. Özellikle tıbbi görüntüleme teknikerliği eğitimi bağlamında yenilikçi eğitim modellerinin kullanımı, öğrencilerin mesleki farkındalıklarının geliştirilmesi, mamografi sürecine ilişkin bilgi düzeylerinin artırılması ve uygulamaya dayalı öğrenme deneyimlerinin güçlendirilmesi açısından önemlidir. Bu çalışmanın amacı, VR destekli meme sağlığı eğitiminin tıbbi görüntüleme teknikerliği eğitimi açısından incelenmesi ve öğrencilerin ders içeriği, öğretim süreci, VR uygulaması ve genel memnuniyet düzeylerine ilişkin değerlendirmelerinin ortaya konulmasıdır. Çalışma nicel, tanımlayıcı ve kesitsel olarak yürütülmüştür. Araştırmaya toplam 40 öğrenci katılmıştır. Katılımcıların %80,0'i kadın olup yaş ortalaması 19,88±1,82'dir. Bulgulara göre öğrencilerin dersi genel olarak yüksek düzeyde olumlu değerlendirdiği görülmüştür. En yüksek ortalama öğretim elemanı boyutunda, en düşük ortalama ise ders materyalleri boyutunda belirlenmiştir. VR boyutu puanlarının yüksek olması, öğrencilerin teknoloji destekli öğrenme yaklaşımına olumlu yaklaştığını göstermektedir. Cinsiyet, önceki VR deneyimi ve mamografi alanına ilgi düzeyine göre yapılan karşılaştırmalarda istatistiksel olarak anlamlı fark saptanmamıştır ($p>0,05$). Sonuç olarak VR destekli meme sağlığı eğitimi, tıbbi görüntüleme teknikerliği eğitiminde mesleki farkındalık, simülasyon temelli hazırlık ve uygulama odaklı öğrenmeyi destekleyen yenilikçi bir yaklaşım olarak değerlendirilebilir.

Anahtar Kelimeler: Sanal gerçeklik, meme sağlığı eğitimi, tıbbi görüntüleme teknikerliği, mamografi farkındalığı, simülasyon temelli öğrenme

SANAL GERÇEKLİK VE YAPAY ZEKÂ DESTEKLİ MEME SAĞLIĞI VE KENDİ KENDİNE MEME MUAYENESİ EĞİTİMİNİN KATILIMCI MEMNUNİYETİ VE ALGILANAN KAZANIMLAR AÇISINDAN DEĞERLENDİRİLMESİ

EVALUATION OF VIRTUAL REALITY- AND ARTIFICIAL INTELLIGENCE-SUPPORTED BREAST HEALTH AND BREAST SELF-EXAMINATION TRAINING IN TERMS OF PARTICIPANT SATISFACTION AND PERCEIVED GAINS

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ÖZET

Bu çalışma, sanal gerçeklik ve yapay zekâ destekli meme sağlığı ve kendi kendine meme muayenesi (KKMM) eğitimine katılan bireylerin eğitim sonrasındaki memnuniyet düzeylerini ve algılanan kazanımlarını değerlendirmek amacıyla tanımlayıcı ve kesitsel tipte planlanmıştır. Araştırmanın örneklemini 18–24 yaş aralığında bulunan ve çalışmaya gönüllü olarak katılmayı kabul eden toplam 47 katılımcı oluşturmuştur. Katılımcıların 33'ü kadın, 14'ü erkek olup yaş ortalaması 20,9±1,7'dir. Veriler, katılımcı tanıtıcı bilgi formu ile 10 maddeden oluşan 5'li Likert tipi Meme Sağlığı ve KKMM Eğitimi Memnuniyet Değerlendirme Formu aracılığıyla toplanmıştır. Bulgulara göre, katılımcı yanıtları büyük ölçüde "Katılıyorum" ve "Kesinlikle Katılıyorum" seçeneklerinde toplanmıştır. "Kesinlikle Katılıyorum" yanıt oranları %80,9 ile %91,5 arasında değişmiştir. Madde bazında ortalama memnuniyet puanları 4,81 ile 4,91 arasında bulunmuş, genel memnuniyet ortalaması 4,87 olarak hesaplanmıştır. En yüksek ortalama puanlar, KKMM'nin erken farkındalıktaki önemini kavrama ve genel eğitim memnuniyeti maddelerinde elde edilmiştir. Katılımcıların büyük çoğunluğu eğitimin bilgi düzeylerini artırdığını, meme sağlığı farkındalığını geliştirdiğini ve KKMM uygulamasına yönelik istekliliğini desteklediğini belirtmiştir. Sonuç olarak, sanal gerçeklik ve yapay zekâ destekli meme sağlığı ve KKMM eğitimi katılımcılar tarafından yüksek düzeyde olumlu değerlendirilmiş ve erken tanı farkındalığını destekleyen etkili bir eğitim yaklaşımı olarak belirlenmiştir.

Anahtar Kelimeler: Meme sağlığı, kendi kendine meme muayenesi, sanal gerçeklik, yapay zekâ, memnuniyet, erken tanı

ABSTRACT

This study was designed as a descriptive and cross-sectional investigation to evaluate post-training satisfaction levels and perceived gains among individuals who participated in virtual reality- and artificial intelligence-supported breast health and breast self-examination (BSE) training. The sample consisted of 47 volunteers aged 18–24 years who agreed to participate in the study. Of the participants, 33 were female and 14 were male, with a mean age of 20.9±1.7 years. Data were collected using a participant information form and a 10-item 5-point Likert-type Breast Health and BSE Training Satisfaction Evaluation Form. The findings showed that responses were largely concentrated in the "Agree" and "Strongly agree" categories. The proportion of "Strongly agree" responses ranged from 80.9% to 91.5%. Item-based mean satisfaction scores ranged from 4.81 to 4.91, while the overall satisfaction mean was calculated as 4.87. The highest mean scores were obtained for understanding the importance of BSE in early awareness and overall satisfaction with the training. Most participants reported that the training improved their knowledge level, increased their breast health awareness, and supported their willingness to perform BSE. In conclusion, virtual reality- and artificial intelligence-supported breast health and BSE training was evaluated highly positively by participants and may be considered an effective educational approach to support early detection awareness.

Keywords: Breast health, breast self-examination, virtual reality, artificial intelligence, satisfaction, early detection

BİLGİ KRİTERLERİNE DAYALI OLARAK EN UYGUN ÜÇ BOYUTLU DEFORMASYON MODELİNİN BELİRLENMESİ

SELECTION OF THE OPTIMAL 3D DEFORMATION MODEL BASED ON INFORMATION CRITERIA

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ÖZET
3B deformasyon analizinde en uygun dönüşüm modelinin belirlenmesi, elde edilen sonuçların güvenilir biçimde yorumlanabilmesi açısından önemlidir. Dönüşüm modelinin gereğinden basit seçilmesi deformasyon bileşenlerinin eksik temsil edilmesine, gereğinden karmaşık seçilmesi ise zayıf parametrelerin modele dahil edilmesine neden olabilir. Bu nedenle farklı parametre sayılarına sahip modellerin karşılaştırılması ve doğru modelin hangi koşullarda ayırt edilebildiğinin incelenmesi gerekmektedir. Bu çalışmada, 6 parametreli rijit modelden 12 parametreli genel afin modele kadar 16 farklı model ele alınmıştır. Modeller, öteleme ve dönüklük bileşenlerine ek olarak farklı ölçek ve afinite (burkulma) parametre kombinasyonları içerecek şekilde oluşturulmuştur. Model seçiminde Akaike Bilgi Kriteri (AIC) ve Bayesian Bilgi Kriteri (BIC) kullanılmış, kriterlerin performansı Monte Carlo simülasyonları ile değerlendirilmiştir. Simülasyon sonuçları, deformasyon etkisinin belirginleştiği durumlarda doğru modeli seçme başarısının arttığını göstermiştir. Ayrıca yanlış seçimlerin çoğunlukla benzer ölçek ve afinite yapısına sahip modeller arasında gerçekleştiği görülmüştür. Bu sonuçlar, 3B deformasyon modeli seçiminde bilgi kriterlerinin etkin bir değerlendirme aracı sunduğunu göstermektedir.
Anahtar Kelimeler: Koordinat dönüşümü, 3B deformasyon modeli, Model seçimi, AIC, BIC

ABSTRACT
In 3D deformation analysis, determining the most appropriate transformation model is crucial for the reliable interpretation of the results. Selecting a transformation model that is overly simple may lead to an inadequate representation of deformation components, while selecting one that is overly complex may result in the inclusion of weak parameters in the model. Therefore, it is necessary to compare models with different numbers of parameters and investigate under which conditions the true model can be identified. In this study, 16 different models ranging from a 6-parameter rigid model to a 12-parameter affine model are considered. The models were constructed to include various combinations of scale and affinity (shear) parameters in addition to translation and rotation parameters. The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) are used for model selection, and the performance of these criteria is evaluated using Monte Carlo simulations. Simulation results showed that the success rate in selecting the true model increased as the deformation effect became more dominant. Furthermore, incorrect selections are predominantly observed among models with similar scale and affinity parameters. These results indicate that information criteria provide an effective evaluation tool for selecting the optimal 3D deformation models.
Keywords: Coordinate transformation, 3D deformation model, Model selection, AIC, BIC

OTOREGRESİF MODELLERLE TÜRKİYE CORS GNSS İSTASYONLARINDA STOKASTİK GÜRÜLTÜ ANALİZİ

STOCHASTIC NOISE ANALYSIS IN TURKEY CORS GNSS STATIONS USING AUTOREGRESSIVE MODELS

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Özet
Küresel Navigasyon Uydu Sistemleri (GNSS) ile elde edilen günlük konum zaman serileri, levha tektoniği, yüzey deformasyonu ve deprem döngüsü gibi jeofiziksel süreçlerin incelenmesinde temel veri setlerinden biridir. Bu serilerin analizinde genellikle renkli gürültünün bulunmadığı varsayımıyla ağırlıksız En Küçük Kareler (EKK) kestirim yöntemi uygulanır. Ancak jeodezik zaman serilerinde gerek istasyonun fiziksel özelliklerinden gerekse GNSS ölçülerinden kaynaklanan süreçler nedeniyle koordinatlar zamansal korelasyon göstermektedir. Bu korelasyonlar sonucunda zaman serileri yalnızca beyaz gürültü (BG) değil, aynı zamanda renkli gürültü de içermektedir. Zaman serilerinin analizinde bu gürültülerin dikkate alınmaması, hız kestirimlerine ait standart hataların gerçekte olması gerekenden daha düşük hesaplanmasına neden olmaktadır. Bu nedenle söz konusu gürültünün spektral alanda incelenmesi ve etkilerinin uygun yöntemlerle EKK kestirimi sırasında dikkate alınması, hız değerlerinin ve bunlara ait standart hatalara dayalı istatistiklerin doğru yorumlanabilmesi açısından büyük önem taşımaktadır. Bu çalışmada, Türkiye İstasyonları Ağında yer alan 178 istasyonun günlük konum zaman serileri; BG, AR(1) ve ARMA(1,1) otoregresif gürültü modelleri kullanılarak karakterize edilmiştir. Hata büyüme çarpanı olarak tanımlanan "$\kappa = \sigma\_ARMA / \sigma\_BG$" değeri, GNSS bileşenleri (Kuzey, Doğu ve Yükseklik) için ayrı ayrı belirlenmiştir. İstasyonların %90'ında en uygun modelin ARMA(1,1) olduğu belirlenmiş; κ medyanı Kuzey bileşeni için 3,22, Doğu bileşeni için 3,46 ve Yükseklik bileşeni için 2,11 olarak bulunmuştur. Başka bir ifadeyle, zaman serilerinin önemli ölçüde renkli gürültü içerdiği ve bu gürültünün göz ardı edilmesinin hız belirsizliklerinin ortalama olarak yaklaşık üç kat daha küçük tahmin edilmesine yol açtığı görülmüştür. Bu çarpan, aktif fay zonlarında 40 kata kadar ulaşabilmektedir. Elde edilen sonuçlar, Türkiye'de GNSS zaman serilerinin değerlendirilmesinde tektonik hızların istatistiksel anlamlılığını doğrudan etkileyen standart hataların, uygun otoregresif gürültü modelleri dikkate alınarak hesaplanması gerektiğini göstermektedir.
Anahtar Kelimeler - GNSS zaman serileri; Renkli Gürültü; Otoregresif model; CORS-TR

Abstract
Daily position time series derived from Global Navigation Satellite Systems (GNSS) constitute one of the primary datasets for investigating geophysical processes such as plate tectonics, surface deformation, and the earthquake cycle. In the analysis of these time series, the ordinary Least Squares (LS) estimation method is commonly applied under the assumption that colored noise is absent. However, in geodetic time series, coordinate estimates exhibit temporal correlations due to both the physical characteristics of the station and processes associated with GNSS observations. As a result, the time series are affected not only by white noise (WN) but also by colored noise. Neglecting these noise components in time-series analysis leads to underestimated velocity standard errors. Therefore, investigating the noise characteristics in the spectral domain and accounting for their effects during LS estimation using appropriate methods are essential for the correct interpretation of velocities and their associated statistical measures. In this study, daily position time series from 178 stations of the Turkish GNSS network were characterized using WN, AR(1), and ARMA(1,1) autoregressive noise models. The error inflation factor, defined as $\kappa = \sigma\_ARMA / \sigma\_WN$, was determined separately for the GNSS components (North, East, and Up). ARMA(1,1) was identified as the best-fitting model for 86% of the stations. The median κ values were found to be 3.22 for the North component, 3.46 for the East component, and 2.11

for the Up component. In other words, the results indicate that GNSS time series are significantly affected by colored noise and that ignoring this noise leads to velocity uncertainties being underestimated by approximately a factor of three on average. In active fault zones, this factor can reach values as high as 40. The analyses demonstrate that, in the evaluation of GNSS time series in Türkiye, the standard errors that critically influence the statistical significance of tectonic velocities should be estimated using appropriate autoregressive noise models.
Keywords - GNSS time-series; colored noise; Autoregressive model; CORS-TR

GNSS KAMPANYA ÖLÇÜLERİ İLE 3B DEFORMASYON ANALİZİ VE YAPAY ZEKÂ DESTEKLİ TAHMİNSEL MODELLEME

3D DEFORMATION ANALYSIS USING GNSS CAMPAIGN MEASUREMENTS AND AI – ASSISTED PREDICTIVE MODELING

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Özet
Deformasyon izleme çalışmaları, yüzey hareketlerinin zamana bağlı olarak belirlenip yorumlanması ve mühendislik açısından değerlendirilmesi bakımından harita mühendisliğinin gerekli ve önemli uygulama alanlarından biridir. Bu çalışma halen devam etmekte olan bir yüksek lisans tezini belirli bir aşamaya kadar sunmakta olup, belirli aralıklarla yapılmış olan GNSS Kampanya ölçümleri kullanılarak Ayvacık-Tuzla Fay Hattı ve çevresinde deformasyon davranışının incelenmesi amaçlanmaktadır. Çalışma kapsamında dört farklı tarihte GNSS kampanya ölçümleri gerçekleştirilmiştir. Fay hattı ve çevresinde toplam 16 adet poligon tesis edilmiştir. P1 poligonu sabit referans noktası kabul edilip diğer 15 noktanın (P2-P16) bağıl hareketleri doğu, kuzey ve yükseklik değerleri üzerinden değerlendirilmiştir. Tüm kampanya aralıklarında Koordinat farkları, yatay ve üç boyutlu deplasman, azimut ve hız değerleri hesaplanmıştır. Bu hesaplamalara ek olarak GNSS ağındaki geometrik değişimi belirlemek amacıyla baz hat strain ve strain tensor analizleri uygulanmıştır. Final değerlendirme aralığımız olan 1-4 döneminde ortalama toplam 3B deplasman 65.5 mm, ortalama yatay deplasman 43.2 mm ve ortalama düşey değişim -35.6 mm olarak hesaplanmıştır. Ağda en yüksek toplam deformasyon 120.4 mm ile P6 poligonudur. P7 ve P16 poligonları belirgin şekilde düşey çökme, P9,P10,P11 poligonlarında ise yatay bileşenin daha etkili olduğu görülmüştür. Bu sonuçlar, ağdaki deformasyonun homojen olmadığını, mekânsal olarak değişken ve üç boyutlu karakter gösterdiğini ortaya koymaktadır. Bu çalışmayı desteklemek amacıyla GNSS zaman serileri, trend analizi ve LSTM yöntemine bağlı pilot bir yapay zeka yaklaşımıyla değerlendirilmiştir. GNSS Kampanya sayısının sınırlı(4) olması sebebiyle yapay zekâ kısmı nihai operasyonel tahmin modeli değil ön tahminsel çerçeve olarak ele alınmıştır. Elde edilen sonuçlar tezin sonraki aşamasında yapılması planlanan İHA uçuşu ve ortofotodan elde edilen yüzey modeli karşılaştırılması ve CBS tabanlı görselleştirme aşamasına yön verip temel jeodezik sonuçlar olarak değerlendirilecektir. Yapılan çalışma hem mevcut deformasyonun durumunu ortaya koymak ve bundan sonraki yöntemsel aşamalar için bilimsel bir altyapı sağlamaktadır.
Özellikle P6,P7 ve P16 poligonlarının kritik davranışlar göstermeleri, ileriki zamanlarda bu poligonların öncelikli olarak gözlemlenmesi gerektiğini ortaya koymuştur. Bu yönüyle tez, GNSS Kampanya ölçümlerinin deformasyon araştırmalarında uygulanabilirliğini göstermiştir.
Anahtar kelimeler: GNSS, LSTM, Yapay Zekâ 3B Deformasyon, Strain Analizi

Abstract
Deformation monitoring studies are one of the necessary and important application areas of geomatics engineering in terms of determining, interpreting, and evaluating surface movements over time from an engineering perspective. This study presents a master's thesis that is currently in progress up to a certain stage, and it aims to examine the deformation behavior in and around the Ayvacik-Tuzla Fault Line using GNSS campaign measurements taken at specific intervals. Within the scope of the study, GNSS campaign measurements were carried out on four different dates. A total of 16 polygons were established on and around the fault line. The P1 polygon was accepted as the fixed reference point, and the relative movements of the other 15 points (P2-P16) were evaluated based on east, north, and height values. Coordinate differences, horizontal and three-dimensional displacement, azimuth, and velocity values

were calculated for all campaign intervals. In addition to these calculations, baseline strain and strain tensor analyses were applied to determine the geometric change in the GNSS network. In the 1-4 period, which is our final evaluation interval, the average total 3D displacement was calculated as 65.5 mm, the average horizontal displacement as 43.2 mm, and the average vertical change as -35.6 mm. The highest total deformation in the network is the P6 polygon with 120.4 mm. It was observed that P7 and P16 polygons showed significant vertical subsidence, while the horizontal component was more effective in P9, P10, and P11 polygons. These results reveal that the deformation in the network is not homogeneous, but rather spatially variable and exhibits a three-dimensional character. To support this study, GNSS time series were evaluated using trend analysis and a pilot artificial intelligence approach based on the LSTM method. Due to the limited number of GNSS campaigns (4), the artificial intelligence part was treated as a preliminary predictive framework rather than a final operational prediction model. The results obtained will guide the UAV flight and surface model comparison planned for the next stage of the thesis, as well as the GIS-based visualization stage, and will be evaluated as basic geodetic results. The study conducted both reveals the current state of the deformation and provides a scientific infrastructure for subsequent methodological stages. In particular, the critical behaviors shown by the P6, P7, and P16 polygons have revealed that these polygons should be prioritized for observation in the future. In this respect, the thesis has demonstrated the applicability of GNSS campaign measurements in deformation research.

Keywords: GNSS, LSTM, Artificial Intelligence, 3D Deformation, Strain Analysis

MATEMATİKSEL SİMÜLASYON ARAÇLARININ AKADEMİK UYGULAMALAR ÜZERİNDEKİ ETKİSİ: BİR PLS-SEM YAKLAŞIMI

THE IMPACT OF MATHEMATICAL SIMULATION TOOLS ON ACADEMIC PRACTICES: A PLS-SEM APPROACH

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Abstract
This study investigates the impact of mathematical simulation tools on academic practices in engineering and applied sciences using a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The proposed model was developed based on the Technology Acceptance Model (TAM) and extended to evaluate the relationships between Perceived Usefulness (PE), Perceived Ease of Use (PEOU), Barriers to Adoption (BA), Adoption of Simulation Tools (AST), Research Productivity (RP), Teaching Effectiveness (TE), and Academic Impact (AI). Data were collected from 258 academicians, researchers, and graduate students from several universities, including Istanbul Gelisim University, Kharazmi University, Tehran University, Topkapi University, and Cukurova University. After data screening, incomplete and inconsistent responses were removed before analysis.
The measurement model assessment demonstrated acceptable reliability and validity. Cronbach's Alpha and Composite Reliability values exceeded the recommended threshold for all reflective constructs, while discriminant validity was confirmed through both the Fornell–Larcker criterion and HTMT analysis. The structural model results revealed that Behavioral Attitude/Barriers to Adoption (BA) had the strongest positive effect on the Adoption of Simulation Tools (AST). In contrast, AST significantly influenced both Academic Impact (AI) and Research Productivity (RP). The predictive relevance analysis confirmed that the model possesses acceptable predictive capability for all endogenous constructs. Furthermore, effect size analyses indicated that AST plays a central mediating role in explaining how simulation technologies influence academic outcomes.
The findings suggest that simulation-based tools positively contribute to research efficiency, teaching quality, and overall academic performance in engineering-related disciplines. The study highlights the growing importance of digital and simulation-supported learning environments in higher education and provides empirical evidence that may support future digital transformation strategies in universities and engineering education programs.
Keywords: Mathematical Simulation, PLS-SEM, Technology Acceptance Model, Academic Productivity, Engineering Education

Özet
Bilim Bu çalışma, mühendislik ve uygulamalı bilimler alanlarında matematiksel simülasyon araçlarının akademik uygulamalar üzerindeki etkisini Kısmi En Küçük Kareler Yapısal Eşitlik Modellemesi (PLS-SEM) yaklaşımı kullanarak incelemektedir. Önerilen model, Teknoloji Kabul Modeli (TAM) temel alınarak geliştirilmiş ve Algılanan Kullanışlılık (PE), Algılanan Kullanım Kolaylığı (PEOU), Benimseme Engelleri (BA), Simülasyon Araçlarının Benimsenmesi (AST), Araştırma Üretkenliği (RP), Öğretim Etkinliği (TE) ve Akademik Etki (AI) arasındaki ilişkileri değerlendirecek şekilde genişletilmiştir. Veriler; İstanbul Gelişim Üniversitesi, Kharazmi Üniversitesi, Tahran Üniversitesi, Topkapı Üniversitesi ve Çukurova Üniversitesi'nden akademisyenler, araştırmacılar ve lisansüstü öğrencilerden oluşan toplam 258 katılımcıdan toplanmıştır. Veri tarama sürecinin ardından eksik ve tutarsız yanıtlar analiz öncesinde veri setinden çıkarılmıştır.
Ölçüm modeli değerlendirmesi sonucunda modelin güvenilirlik ve geçerlilik kriterlerini sağladığı görülmüştür. Tüm yansıtıcı (reflective) yapılar için Cronbach alfa ve bileşik güvenilirlik (Composite

reliability) değerleri önerilen eşik değerlerin üzerinde bulunmuştur. Ayrıca, ayrışma geçerliliği hem Fornell–Larcker kriteri hem de HTMT analizi ile doğrulanmıştır. Yapısal model sonuçları, Benimseme Engelleri/Davranışsal Tutum (BA) değişkeninin Simülasyon Araçlarının Benimsenmesi (AST) üzerinde en güçlü pozitif etkiye sahip olduğunu göstermiştir. Bunun yanında AST değişkeninin hem Akademik Etki (AI) hem de Araştırma Üretkenliği (RP) üzerinde anlamlı etkiler oluşturduğu belirlenmiştir. Öngörüsel geçerlilik analizi sonuçları, modelin tüm içsel değişkenler açısından kabul edilebilir düzeyde öngörü gücüne sahip olduğunu ortaya koymuştur. Ayrıca etki büyüklüğü analizleri, AST değişkeninin simülasyon teknolojilerinin akademik çıktılar üzerindeki etkisini açıklamada merkezi bir aracılık rolü üstlendiğini göstermektedir.

Elde edilen bulgular, simülasyon tabanlı araçların araştırma verimliliği, öğretim kalitesi ve genel akademik performans üzerinde olumlu katkılar sağladığını ortaya koymaktadır. Çalışma, yükseköğretimde dijital ve simülasyon destekli öğrenme ortamlarının giderek artan önemini vurgulamakta ve üniversitelerde dijital dönüşüm stratejileri ile mühendislik eğitimi programlarının geliştirilmesine katkı sağlayabilecek ampirik bulgular sunmaktadır.

Anahtar kelimeler: Matematiksel Simülasyon, PLS-SEM, Teknoloji Kabul Modeli, Akademik Üretkenlik, Mühendislik Eğitimi

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TOWARDS A HUMAN-ALIGNED AI EVALUATOR FOR PERCEIVED SPATIAL FUNCTIONALITY: A PROOF-OF-CONCEPT METHODOLOGY USING SYNTHETIC IMAGERY AND VISION TRANSFORMERS

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Abstract
Architectural design has long lacked a computational tool capable of evaluating how occupants will perceive the functional quality of a space, not its measurable geometry, but the embodied, affordance-based experience of inhabiting it. Existing computational approaches operate at the geometric, syntactic or environmental performance level and leave the deep phenomenological dimension of spatial quality unaddressed: the pre-reflective, first-person judgment that users form when imaginatively inhabiting a depicted space. This paper presents a proof-of-concept methodology for building a human-aligned AI evaluator of Perceived Spatial Functionality (PSF) that bridges this gap by aligning machine inference with the intersubjective perceptual consensus of domain-trained end users, rather than with objective spatial descriptors. Rather than pursuing another generative or classification model, the study investigates the inverse problem: given a 2D perspective rendering of a design studio, can a machine predict the intersubjective human judgment of that space's capacity to support creativity, a sense of belonging and ease of use? The methodology follows five phases: controlled synthetic dataset generation via structured prompt engineering, large-scale human perceptual annotation by domain-trained end user participants, diagnostic cross-modal analysis comparing Zero-Shot VLM outputs against the human benchmark, supervised fine-tuning of a DINOv2-based Vision Transformer regressor, and an Explainable AI (XAI) interpretability audit via Attention Rollout. Each phase is shown to be a necessary condition for the next, and each dependency is grounded in empirical observations from the study: a stabilized benchmark of 9,141 ratings from 390 domain-trained participants, a structured Perception Gap confirmed across three PSF dimensions via Bland-Altman and Pearson correlation analysis, and Attention Rollout maps interpretable against established affordance frameworks. The paper argues that this pipeline constitutes a theoretically grounded, replicable template for human-aligned perceptual evaluation in Evidence-Based Design, with direct applicability during early-stage iterative design from 3D renders

Keywords: Perceived Spatial Functionality, Vision Transformer, Synthetic Dataset, Evidence-Based Design, Explainable AI, Architectural Evaluation Methodology

ÇATIŞMANIN KENTSEL MORFOLOJİK İZLERI: BEYRUT ESKİ YEŞİL HATTI BOYUNCA ŞAM CADDESİ

URBAN MORPHOLOGICAL TRACES OF CONFLICT: DAMASCUS STREET ALONG BEIRUT'S FORMER GREEN LINE

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Abstract
Beirut's former Green Line is often remembered as a wartime division, yet its traces cannot be understood only through history or memory. This study asks whether the line that once separated East and West Beirut still leaves readable marks in the physical structure of the city, particularly along Damascus Street, one of the corridors historically associated with the division.
During the Lebanese Civil War between 1975 and 1990, the Green Line did not operate as a single constructed wall. It was produced through frontlines, damaged and abandoned buildings, checkpoints, vacant plots, restricted passages, and zones of fear. After the war, these visible barriers gradually disappeared, but the distinction between "East Beirut" and "West Beirut" continued to shape urban perception and everyday language. This persistence raises an important spatial question: can a former conflict boundary survive within the morphology of the city even after its physical removal?
The research examines Damascus Street through an urban morphological approach. Historical maps, archival documents, satellite images, and diagrammatic readings are used to compare the corridor across pre-war, wartime, and post-war periods. The analysis focuses on street network continuity, block structure, plot patterns, urban grain, density differences, and remaining material traces related to the former conflict corridor.
The findings suggest that the Green Line no longer exists as a visible barrier, but its legacy can still be traced through discontinuities in the urban fabric, uneven redevelopment patterns, and differences between the eastern and western sides of the corridor. Damascus Street therefore becomes more than a historical reference; it becomes a spatial record of how conflict may continue to influence the city after the official end of war. Through this morphological reading, the study argues that former conflict boundaries should not be treated only as political memories, but also as spatial conditions that may continue to structure the city.
Keywords: Beirut; Green Line, Damascus Street, urban morphology, post-conflict urbanism.

Özet
Beyrut'un eski Yeşil Hattı çoğu zaman savaş dönemine ait tarihsel bir ayrım olarak hatırlansa da bu hattın izleri yalnızca hafıza ya da politik tarih üzerinden açıklanamaz. Bu çalışma, Doğu ve Batı Beyrut'u ayıran eski çatışma hattının, özellikle bu bölünmeyle tarihsel olarak ilişkilenen Şam Caddesi boyunca, kentin fiziksel yapısında hâlâ okunabilir izler bırakıp bırakmadığını araştırmaktadır.
1975–1990 yılları arasında yaşanan Lübnan İç Savaşı sırasında Yeşil Hat, tekil ve inşa edilmiş bir duvar biçiminde ortaya çıkmamıştır. Cephe hatları, hasarlı ve terk edilmiş yapılar, kontrol noktaları, boş parseller, kısıtlanmış geçişler ve güvensizlik alanları aracılığıyla oluşan parçalı bir çatışma koridoru niteliği taşımıştır. Savaş sonrasında bu görünür engeller büyük ölçüde ortadan kalkmış olsa bile "Doğu Beyrut" ve "Batı Beyrut" ayrımı gündelik dilde, kolektif hafızada ve kentsel algıda varlığını sürdürmüştür. Bu durum, eski bir çatışma sınırının fiziksel olarak ortadan kalktıktan sonra da kentsel morfoloji içinde iz bırakmaya devam edip etmediği sorusunu gündeme getirmektedir.
Araştırmada Şam Caddesi, kentsel morfoloji yaklaşımıyla ele alınmaktadır. Tarihsel haritalar, arşiv belgeleri, uydu görüntüleri ve diyagramatik okumalar kullanılarak koridorun savaş öncesi, savaş dönemi ve savaş sonrası mekânsal dönüşümü karşılaştırılmıştır.

Analiz kapsamında sokak ağı sürekliliği, blok yapısı, parsel örüntüsü, kentsel doku, yoğunluk farklılıkları ve çatışma döneminden kalan maddi izler incelenmiştir.
Bulgular, Yeşil Hat'ın günümüzde görünür bir fiziksel bariyer olarak mevcut olmadığını; ancak kentsel dokudaki süreksizlikler, yeniden gelişim biçimlerindeki eşitsizlikler ve koridorun doğu ile batı yakaları arasındaki morfolojik farklılıklar aracılığıyla etkisini sürdürdüğünü göstermektedir. Bu nedenle Şam Caddesi yalnızca tarihsel bir referans değil, çatışmanın kent üzerinde bıraktığı mekânsal izlerin okunabildiği bir kayıt alanı olarak değerlendirilebilir. Çalışma, çatışma sonrası kent araştırmalarına katkı sunarak sınırların yalnızca geçmişte kalmış politik olaylar değil, kentsel yapıya yerleşmiş uzun süreli mekânsal koşullar olarak da ele alınması gerektiğini vurgulamaktadır.
Anahtar Kelimeler: Beyrut; Yeşil Hat, Şam Caddesi, kentsel morfoloji, çatışma sonrası kentleşme.

Bu çalışma ESOGU Mimarlık Bölümü Fen Bilimleri Enstitüsü'de hazırlanan "ÇATIŞMA SONRASI BEYRUT'TA KENTSEL SINIR KOŞULLARI: ESKI YEŞIL HAT BOYUNCA ŞAM CADDESI ÜZERINE MORFOLOJIK İNCELEMESI" başlıklı Yüksek lisans tezinden üretilmiştir.

TÜRKİYE'DE UYGULANAN İKİ GÜNCEL OKUL ÖNCESİ EĞİTİM PROGRAMININ ERKEN OKURYAZARLIK BECERİLERİ AÇISINDAN KARŞILAŞTIRMALI ANALİZİ

A COMPARATIVE ANALYSIS OF TWO CONTEMPORARY PRESCHOOL EDUCATION CURRICULA IMPLEMENTED IN TÜRKIYE IN TERMS OF EARLY LITERACY SKILLS

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Abstract
The purpose of this study is to comparatively examine the 2024 Early Childhood Education (ECE) Preschool Curriculum and the Türkiye Century Education Model (TCEM) Preschool Curriculum in terms of early literacy skills. Early literacy skills constitute one of the most critical developmental areas in preschool education, as they provide the foundation for later reading, writing, language development, and academic achievement. In this context, the study evaluates the approaches of both curricula to early literacy through learning centers, learning outcomes, achievements, and activity types. The research was conducted using the document analysis method, which is one of the qualitative research approaches. The data sources consisted of the official curriculum documents published by the Ministry of National Education, namely the 2024 ECE Preschool Curriculum and the TCEM Preschool Curriculum. The collected data were analyzed through descriptive analysis. The curricula were compared with regard to phonological awareness, vocabulary development, letter awareness, print awareness, reading awareness, and pre-writing skills. The findings revealed that both curricula aim to support children's school readiness and foster the development of early literacy skills. However, the TCEM Preschool Curriculum presents early literacy skills in a more systematic, explicit, and competency-based framework, directly addressing the subcomponents of early literacy. In contrast, the ECE Preschool Curriculum adopts a developmental perspective and provides more detailed examples of educational practices and classroom activities. Although both curricula share common goals regarding early literacy development, differences were identified in terms of content organization, presentation of learning outcomes, and implementation strategies. Overall, the findings suggest that both curricula contribute to the development of early literacy skills while reflecting distinct educational approaches. It is anticipated that the results of this study will contribute to curriculum development efforts and enrich the literature on early literacy in preschool education.
Keywords: Early literacy, preschool education, Early Childhood Education Curriculum, Türkiye Century Education Model, curriculum comparison

Özet
Bu araştırmanın amacı, 2024 Erken Çocukluk Eğitimi (EÇE) Okul Öncesi Eğitim Programı ile Türkiye Yüzyılı Maarif Modeli (TYMM) Okul Öncesi Eğitim Programını erken okuryazarlık becerileri açısından karşılaştırmalı olarak incelemektir. Erken okuryazarlık becerileri; çocukların ilerleyen eğitim yaşamlarında okuma, yazma ve akademik başarılarını etkileyen temel yeterlikler arasında yer almakta olup okul öncesi dönemde desteklenmesi gereken önemli gelişim alanlarından biridir. Bu doğrultuda araştırmada her iki programın erken okuryazarlık becerilerine yaklaşımı; öğrenme merkezleri, kazanımlar ve öğrenme çıktıları ile etkinlik türleri bağlamında değerlendirilmiştir. Araştırma nitel araştırma yöntemlerinden doküman incelemesi deseni kullanılarak gerçekleştirilmiştir. Veri kaynaklarını Millî Eğitim Bakanlığı tarafından yayımlanan 2024 EÇE Okul Öncesi Eğitim Programı ve TYMM Okul Öncesi Eğitim Programı oluşturmuştur. Elde edilen veriler betimsel analiz yöntemiyle incelenmiştir. Araştırma kapsamında programlar; ses bilgisel farkındalık, sözcük bilgisi, harf farkındalığı, yazı farkındalığı, okuma farkındalığı ve yazma öncesi beceriler açısından karşılaştırılmıştır.

Bulgular, her iki programın da çocukların ilkokula hazırlık süreçlerini desteklemeyi ve erken okuryazarlık becerilerini geliştirmeyi amaçladığını göstermektedir. Bununla birlikte TYMM Okul Öncesi Eğitim Programında erken okuryazarlık becerilerinin daha sistematik, beceri temelli ve açık biçimde yapılandırıldığı; erken okuryazarlığın alt bileşenlerine doğrudan yer verildiği belirlenmiştir. EÇE Okul Öncesi Eğitim Programında ise erken okuryazarlık becerilerinin gelişimsel yaklaşım doğrultusunda ele alındığı ve uygulamaya yönelik etkinlik örneklerinin daha ayrıntılı biçimde sunulduğu görülmüştür. Sonuç olarak her iki programın erken okuryazarlık alanında ortak hedefleri paylaşmasına karşın içerik yapısı, öğrenme çıktılarının sunuluş biçimi ve uygulama boyutu açısından farklılaştığı sonucuna ulaşılmıştır. Araştırmanın, okul öncesi eğitim programlarının geliştirilmesine ve erken okuryazarlık alanındaki çalışmalara katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Erken okuryazarlık, okul öncesi eğitim, Erken Çocukluk Eğitimi Programı, Türkiye Yüzyılı Maarif Modeli, program karşılaştırması

EVALUATION OF AI-SUPPORTED LEARNING IN THE CONTEXT OF COGNITIVE LOAD THEORY

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Abstract
Cognitive Load Theory explains learning on the basis of human cognitive architecture. It emphasizes that instructional design should be organized according to the relationship between working memory and long-term memory (Sweller, 2011). From this perspective, learning involves the development of usable knowledge and schemas in long-term memory. Working memory, however, has limited capacity when processing new information. Cowan's embedded-processes model also supports this view. According to this model, the focus of attention can hold only a limited number of unrelated items, although chunking and organization may increase effective capacity (Cowan, 1999).
This theoretical review examines AI-supported learning within the framework of Cognitive Load Theory. AI-supported learning can be considered a form of instructional support for the acquisition of biologically secondary knowledge. Such knowledge usually requires explicit instruction (Sweller, 2011). Therefore, AI-supported learning should not be evaluated only as a technological aid. It should also be examined in terms of how it affects working memory resources and schema acquisition.
The review focuses on element interactivity and the distinction between intrinsic and extraneous cognitive load. Intrinsic cognitive load is determined by the element interactivity of the learning material and the learner's current knowledge level. Extraneous cognitive load, in contrast, results from the way information is presented and from unnecessary demands created by instructional design (Sweller, 2011). In this respect, AI-generated explanations may support learning when they are concise, structured, and appropriate for the learner's current knowledge level. They may also support schema acquisition when they make the relations among learning elements clear. However, excessive information, over-explanation, disorganized presentation, and inappropriate guidance may increase extraneous cognitive load. In addition, when AI-generated responses are unclear, inconsistent, or poorly aligned with the learner's needs, they may create additional processing demands for learners.
In such cases, limited working memory resources may be directed toward interpreting or reorganizing the explanation rather than constructing schemas. Therefore, AI-supported learning should be designed in accordance with human cognitive architecture. Reducing unnecessary cognitive load should be considered a central instructional principle.
Keywords: Artificial intelligence, cognitive load theory, working memory, schema acquisition, extraneous cognitive load

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MİMARLIK DİSİPLİNİNİN STEAM MODELİNDEKİ YERİ VE UZAMSAL AKIL YÜRÜTME BECERİSİNE KATKISI

THE PLACE OF THE ARCHITECTURE DISCIPLINE IN THE STEAM MODEL AND ITS CONTRIBUTION TO SPATIAL REASONING SKILLS

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ÖZET

Uzamsal akıl yürütme becerisi, bireylerin günlük yaşamlarında karşılaştıkları problemlerin çözümünde ve matematik öğrenme süreçlerinde önemli rol oynayan temel bilişsel becerilerden biridir. Bu beceri, özellikle mekânsal ilişkilerin yorumlanmasını ve üç boyutlu düşünmeyi gerektiren mimarlık mesleğinin temel yetkinlikleri arasında yer almaktadır. STEAM yaklaşımında disiplinler arası etkileşim ön planda tutulmakta ve bu disiplinlerin bütünleşik biçimde ele alınmasının öğrencilerin üst düzey düşünme becerilerini geliştirdiği kabul edilmektedir. Bununla birlikte, mimarlık disiplininin STEAM yaklaşımı içerisindeki konumu ve uzamsal akıl yürütme becerisinin geliştirilmesine sağlayabileceği katkılar yeterince açıklığa kavuşturulmuş değildir. Bu doğrultuda araştırmada, mimarlık disiplininin STEAM yaklaşımındaki yerinin ve uzamsal akıl yürütme becerisine olan katkısının mimarların görüşleri doğrultusunda incelenmesi amaçlanmıştır. Araştırma, nitel araştırma yöntemlerinden durum çalışması desenine göre yürütülmüştür. Çalışma grubunu, uzmanlık alanları, mesleki deneyimleri ve görev pozisyonları bakımından farklılık gösteren dört mimar oluşturmaktadır. Katılımcıların belirlenmesinde amaçlı örnekleme yöntemlerinden maksimum çeşitlilik örneklemesi kullanılmıştır. Araştırma verileri yarı yapılandırılmış görüşmeler aracılığıyla toplanmış, elde edilen veriler ise içerik analizi yöntemiyle çözümlenmiştir. Verilerin analizi sonucunda mimarların, mimarlığı STEAM yaklaşımında farklı disiplinleri bir araya getiren bütünleştirici bir alan olarak değerlendirdikleri görülmüştür. Katılımcılar, mimarlığın sanat ve mühendislik boyutlarını dengeli biçimde bir araya getiren yapısının, STEAM yaklaşımının disiplinler arası doğasıyla örtüştüğünü vurgulamışlardır. Bununla birlikte, mimarlık disiplininin soyut kavramları somutlaştırma, geometrik düşünmeyi destekleme ve mekânsal ilişkilerin anlaşılmasını kolaylaştırma özellikleri sayesinde uzamsal akıl yürütme becerisinin gelişimine önemli katkılar sağladığını ifade etmişlerdir. Ayrıca katılımcılar, uzamsal akıl yürütme becerisinin yalnızca bireysel yatkınlıkla açıklanamayacağını, uygun öğrenme ortamları ve deneyimler aracılığıyla geliştirilebileceğini belirtmişlerdir. Bu görüşler doğrultusunda mimarlar, erken yaşlardan itibaren mimarlık temelli uygulamalara eğitim programlarında yer verilmesini önermiştir. Özellikle tasarım süreçleri, model oluşturma çalışmaları ve kodlama temelli etkinliklerin öğrencilerin uzamsal düşünme becerilerini destekleyebileceği ifade edilmiştir. Benzer şekilde mevcut öğretim programlarında maket yapımı, üç boyutlu modelleme etkinlikleri ve Minecraft benzeri dijital ortamların kullanımının da bu becerilerin gelişimine katkı sağlayabileceği vurgulanmıştır.

Anahtar Kelimeler: Uzamsal Akıl Yürütme, STEAM, Matematik Eğitimi, Mimarlık Disiplini.

ABSTRACT

Spatial reasoning is one of the fundamental cognitive skills that plays an important role in solving problems individuals encounter in daily life and in mathematics learning processes. This skill is among the core competencies of the architecture profession, which specifically requires the interpretation of spatial relationships and three-dimensional thinking. In the STEAM approach, interdisciplinary interaction is prioritized, and it is acknowledged that addressing these disciplines in an integrated manner develops students' higher-order thinking skills. However, the position of the architecture discipline within the STEAM approach and the contributions it can provide to the development of spatial reasoning skills have not been sufficiently clarified. Accordingly, this research aimed to examine the place of the architecture discipline in the STEAM approach and its contribution to spatial reasoning skills in line with the opinions of architects. The research was conducted according to the case study design, one of the qualitative research methods. The study group consists of four architects who differ in terms of their areas of expertise, professional experiences, and job positions. Maximum variation sampling, one of the purposive sampling methods, was used in determining the participants. The research data were collected through semi-structured interviews, and the obtained data were analyzed using the content analysis method. As a result of the data analysis, it was observed that architects evaluate architecture as an integrative field that brings together different disciplines within the STEAM approach. The participants emphasized that the structure of architecture, which brings together the art and engineering dimensions in a balanced manner, aligns with the interdisciplinary nature of the STEAM approach. In addition, they stated that the architecture discipline makes significant contributions to the development of spatial reasoning skills through its characteristics of concretizing abstract concepts, supporting geometric thinking, and facilitating the understanding of spatial relationships. Furthermore, the participants indicated that spatial reasoning skills cannot be explained solely by individual aptitude, and that they can be developed through appropriate learning environments and experiences. In line with these opinions, the architects recommended that architecture-based applications be included in educational programs starting from early ages. In particular, it was stated that design processes, model-building activities, and coding-based activities could support students' spatial thinking skills. Similarly, it was emphasized that model making, three-dimensional modeling activities, and the use of digital environments similar to Minecraft in current educational programs could also contribute to the development of these skills.

Keywords: Spatial Reasoning, STEAM, Mathematics Education, Architecture Discipline.

ORTAÖĞRETİM ÖĞRENCİLERİNİN KISA FORMATLI SOSYAL MEDYA VİDEOSU İZLEME DENEYİMLERİNİN İNCELENMESİ: BİR FENOMENOLOJİ ÇALIŞMASI

AN EXAMINATION OF SECONDARY SCHOOL STUDENTS' EXPERIENCES OF WATCHING SHORT-FORM SOCIAL MEDIA VIDEOS: A PHENOMENOLOGICAL STUDY

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Abstract

The widespread use of short-form social media video content has significantly changed the ways in which high school students access information and manage their time. While this transformation offers opportunities such as rapid learning and easy access to information when used appropriately, uncontrolled use may lead to problems including distraction, poor time management, and decreased academic performance. The purpose of this study is to examine secondary school students' experiences with using short-form social media videos.The study employed a phenomenological research design, one of the qualitative research methods. The research was conducted during the spring semester of the 2025–2026 academic year at a high school in Eskişehir, Türkiye. The study group was determined through purposive and criterion sampling techniques. The criterion for participation was watching short-form social media videos for at least two hours per day. The participants consisted of 12 high school students (6 female and 6 male) who met this criterion.Research data were collected through a semi-structured interview form developed by the researcher to explore students' experiences with short-form social media video viewing. The data were analyzed using content analysis. The findings obtained from the interviews were examined in terms of video usage patterns, duration, purposes of use, preferred platforms, perceived effects, and future intentions regarding use.Based on the research findings, recommendations were developed to promote the effective use of short-form social media videos among students. The results revealed that students experienced short-form videos as both supportive and limiting factors in their academic lives. In line with these findings, it is recommended that students' self-regulation skills be strengthened, digital literacy awareness be enhanced, and micro-learning-based practices be incorporated into educational processes.

Keywords: Short-form social media videos, high school students, phenomenology.

Özet

Kısa formatlı sosyal medya video içeriklerinin yaygınlaşması, özellikle lise çağındaki gençlerin bilgiye erişim ve zaman kullanma biçimlerini önemli ölçüde değiştirmektedir. Bu değişim , doğru kullanıldığında hızlı öğrenme ve erişilebilirlik gibi fırsatlar sunarken, kontrolsüz kullanım durumunda dikkat dağınıklığı, zaman yönetimi sorunları ve akademik performansta düşüş gibi durumları beraberinde getirmektedir.Bu araştırmanın amacı,Ortaöğretim öğrencilerinin kısa formatlı sosyal medya videolarını kullanma deneyimlerinin incelemektir. Araştırmada nitel araştırma yöntemlerinden fenomenoloji (olgu bilim) deseni benimsenmiştir.Çalışma 2025- 2026 eğitim öğretim bahar döneminde Eskişehir de bulunan bir lisede gerçekleşmiştir. .Çalışma grubu nitel araştırma yöntemlerinden amaçlı ve ölçüt örnekleme teknikleri kullanılarak belirlenmiştir.Çalışmada, günlük en az iki saat kısa formatlı Sosyal Medya Videosu İzleme durumu ölçüt alınmıştır. alışkanlığına sahip 12 lise öğrencisi (6 kız, 6 erkek) oluşturmaktadır. Araştırma verileri, araştırmacı tarafından geliştirilen öğrencilerinin Kısa Formatlı Sosyal Medya Videosu İzleme Deneyimlerine yönelik yarı yapılandırılmış görüşme formu aracılığıyla toplanmış ve içerik analizi yöntemiyle çözümlenmiştir.Görüşmelerden elde edilen bulgular, öğrencilerin kısa formatlı video kullanımları, süre ,amaç , kullanılan platform,etkiler ve gelecek planı boyutları açısından incelenmiştir.Araştırma sonuçları doğrultusunda öğrencilerin kısa formatlı sosyal

medya videolarının etkili bir biçimde kullanmalarına yönelik öneriler geliştirilmiştir.Araştırma sonuçları, kısa formatlı videoların öğrencilerin akademik yaşantılarında hem sınırlayıcı hem de destekleyici yönleriyle deneyimlendiğini göstermektedir. Elde edilen bulgular doğrultusunda öğrencilerin öz-düzenleme becerilerinin geliştirilmesi, dijital okuryazarlık farklılılığının artırılması ve eğitim süreçlerinde mikro-öğrenme temelli uygulamalara yer verilmesi önerilmektedir.
Anahtar Kelimeler: kısa formatlı sosyal medya videolar, , lise öğrencileri, fenomenoloji,

TÜRKİYE YÜZYILI MAARİF MODELİ FİZİK ÖĞRETİM PROGRAMINDA BİLİMİN DOĞASI UNSURLARININ İNCELENMESİ

AN INVESTIGATION OF THE NATURE OF SCIENCE COMPONENTS IN THE TÜRKİYE CENTURY EDUCATION MODEL PHYSICS CURRICULUM

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Abstract
The vision of science curricula is to develop scientifically literate individuals. Understanding the nature of science plays a crucial role in fostering scientific literacy. How science, scientific literacy, and the nature of science are emphasized in revised curricula has become a matter of interest. Therefore, this study aimed to examine the 9th Grade Physics Curriculum, implemented in 2024, in terms of the nature of science (NOS) components. The purpose of this study is to provide an in-depth analysis of the Türkiye Century Education Model Secondary School Physics Curriculum, which came into effect in 2024, with respect to the components of the nature of science. The research was conducted during the 2025–2026 academic year. Within the scope of qualitative research methods, qualitative document analysis was employed. The data source of the study was the Physics Curriculum developed and published in 2024 by the Board of Education of the Ministry of National Education (MoNE). In the analysis of the data, the seven widely accepted components of the nature of science proposed by Lederman—namely, the tentative nature of scientific knowledge, the empirical basis of science, subjectivity and theory-ladenness, imagination and creativity, sociocultural embeddedness, the distinction between observation and inference, and the non-hierarchical relationship between scientific theories and laws—were used as a framework through a directed content analysis approach. The findings revealed that the curriculum places strong emphasis on the empirical basis of science, the tentative nature of scientific knowledge, and imagination/creativity, whereas components such as the distinction between observation and inference and the relationship between scientific theories and laws are addressed more implicitly. Based on the results, it is recommended that textbooks be revised to eliminate myths about the nature of science and that micro-teaching modules be designed to support teachers' classroom practices regarding NOS instruction.
Keywords: Türkiye Century Education Model Secondary School Physics Curriculum, Nature of Science, Document Analysis

Özet
Fen öğretim programlarının vizyonu bilim okuryazarı bireyler geliştirmektir. Bilim okuryazarlığın kazandırılmasında bilimin doğası önemli bir rol oynamaktadır. Değişen programlarda bilime, bilim okuryazarlığına ve bilimin doğasına vurgular merak konusu olmuştur. Bu nedenle bu çalışmada 2024 yılında 9. Sınıflarda uygulamaya konan fizik programı bilimin doğası unusurları açısından araştırılmak istenmiştir. Bu çalışmanın amacı, 2024 yılında yürürlüğe giren Türkiye Yüzyılı Maarif Modeli Ortaöğretim Fizik Dersi Öğretim Programı'nı bilimin doğası (BD) unsurları açısından derinlemesine incelemektir. Araştırma 2025-2026 eğitim öğretim yılında gerçekleşmiştir. Araştırmada, nitel araştırma yöntemleri kapsamında yer alan nitel doküman analizi tekniği benimsenmiştir. Araştırmanın veri kaynağını, Millî Eğitim Bakanlığı (MEB) Talim ve Terbiye Kurulu Başkanlığı tarafından yayımlanan 2024 yılında geliştirilen fizik öğretim programı oluşturmaktadır. Verilerin analizinde, alan yazında geniş kabul gören Lederman tarafından ortaya konulan yedi temel bilimin doğası unsuru (bilimsel bilginin değişebilirliği, deneysel temel, öznellik ve kuramsal bağımlılık, hayal gücü ve yaratıcılık, sosyokültürel etki, gözlem ve çıkarım arasındaki fark, bilimsel teori ve kanunlar arasındaki hiyerarşik olmayan ilişki)

yönlendirilmiş içerik analizi yaklaşımıyla çerçeve olarak kullanılmıştır. Bulgular, programda özellikle "deneysel temel", "değişebilir olma" ve "hayal gücü/yaratıcılık" unsurlarına yüksek düzeyde vurgu yapıldığı; buna karşın "gözlem ve çıkarım farkı" ile "bilimsel teori ve kanun ayrımı" gibi unsurların daha örtük olduğu saptanmıştır. Elde edilen sonuçlar doğrultusunda, ders kitaplarının BD mitlerinden arındırılması ve öğretmenlerin sınıf içi uygulamalarına yönelik mikro-öğretim modüllerinin tasarlanması önerilmektedir.

Anahtar Kelimeler: Türkiye Yüzyılı Maarif Modeli Ortaöğretim Fizik Dersi Öğretim Programı, Bilimin Doğası, Doküman Analizi,

BAĞLAMA YORUMCULUĞUNDA ÇALGISAL ADAPTASYON (UYARLAMA) ÜZERİNE YAPILMIŞ ARAŞTIRMALARIN İÇERİK ANALİZİ

CONTENT ANALYSIS OF STUDIES ON INSTRUMENTAL ADAPTATION IN BAĞLAMA PERFORMANCE

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Abstract
Adaptation (instrumental adaptation) can be defined as the process of arranging a musical work for different instruments, musical ensembles, or performance approaches while preserving its melodic and structural characteristics. Recent developments such as the increasing influence of mass communication tools, the interaction of diverse musical cultures, the expansion of instrumental performance possibilities, and the enrichment of repertoires have intensified the mutual influence of technical and interpretative characteristics among musical instruments. This phenomenon is also evident in the bağlama, one of the principal instruments of Turkish music, which is performed with various stylistic approaches across different regions of Anatolia. The notable increase in adaptation studies in recent years, particularly those involving works transferred from different musical cultures and instruments to the bağlama repertoire, has once again highlighted the importance of the adaptation phenomenon. Considering the growing prevalence of this practice in relation to the bağlama, examining the concept of adaptation through the lens of accessible literature may provide significant contributions to the field. The aim of this study is to systematically reveal recent research trends by analyzing the contents of scientific studies focusing on the adaptation phenomenon in bağlama performance, including journal articles, conference papers, and unpublished graduate theses. Using the document analysis technique, the accessible studies were subjected to content analysis. The collected data were evaluated in accordance with the scope and methodology of the research and classified in a manner that would contribute to identifying prevailing research tendencies in the field. The findings indicate that recent adaptation studies concerning the bağlama have predominantly focused on enriching the instrument's repertoire, transferring works from different musical genres into the bağlama tradition, and improving performance techniques through adaptations derived from other instruments. Furthermore, many of these studies were found to contribute not only to the diversification of the bağlama repertoire but also to educational processes and to the development of alternative perspectives on performance and interpretation. As a result, the available evidence suggests that the adaptation phenomenon plays a significant role in the development of bağlama performance techniques, repertoire enrichment, interpretative approaches, and both amateur and professional music education. These findings further indicate the necessity of examining and evaluating adaptation studies from multiple perspectives..
Keywords: Bağlama, Adaptation, Instrumental Adaptation, Turkish Folk Music, Bağlama Performance

Özet
Uyarlama (çalgısal adaptasyon), belirli bir müzik eserinin melodik ve yapısal özellikleri korunarak farklı çalgılar, müzikal topluluklar veya yeni icra anlayışlarına göre düzenlenme süreci olarak ifade edilebilir. Kitle iletişim araçlarının gücü, müzik kültürlerinin etkileşimi, çalgıların icra olanaklarının genişlemesi ve repertuvarlarının zenginleşmesi gibi yeni gelişmeler, çalgılardaki teknik ve yorum karakteristiklerinin birbirlerini etkilemesini yaygınlaştırmaktadır. Bu durum, Anadolu'nun pek çok farklı bölgesinde çeşitli yaklaşımlarla icra edilen Türk müziği çalgılarından birisi olan bağlama için de geçerlidir. Bağlama repertuvarının zenginleşmesi ve teknik icra düzeyinin gelişiminde çeşitli müzik kültürleri ve farklı çalgılardan yapılan eser uyarlamalarının son dönemde yapılan güncel çalışmalarla birlikte kayda değer şekilde artış göstermesi uyarlama konusunun önemini tekrar gündeme getirmiştir. Türk halk müziğinin başat çalgılarından birisi olan bağlama özelinde giderek yaygınlaşan bu durum bağlamında, uyarlama kavramının mevcut erişebilen literatür örneklemleri ekseninde incelenmesi alana önemli veriler sunabilir.

Bu çalışmanın amacı, bağlamada uyarlama olgusunu ele alan makale, bildiri ve yayımlanmamış lisansüstü tezler gibi bilimsel araştırmaların içeriklerini analiz ederek alanda hazırlanan çalışmaların son dönemdeki eğilimlerini sistematik bir şekilde ortaya koymaktır. Doküman analizi tekniği aracılığıyla araştırma kapsamında ulaşılabilen çalışmalar içerik analizine tabi tutulmuş, veri kaynakları araştırmanın kapsamı ve yöntemi doğrultusunda değerlendirilip alandaki araştırma eğilimlerinin ortaya konulmasına katkı sağlayacak şekilde sınıflandırılmıştır.

Elde edilen veriler doğrultusunda, son dönemde bağlama üzerine gerçekleştirilen uyarlama çalışmalarının, çoğunlukla repertuvarın zenginleştirilmesi, farklı müzik türlerine ait eserlerin bağlamaya aktarılması ve farklı çalgılardan uyarlanan eserler vasıtasıyla bağlama icra tekniklerinin geliştirilmesi üzerine odaklandığı sonucuna varılmıştır. Aynı zamanda bu kapsamda yapılan araştırmaların pek çoğunun bağlamanın repertuvar çeşitliliğini arttırmasının yanı sıra eğitim süreçlerine katkı sağlayan ve yorumculuk anlayışlarına farklı bakış açılarıyla yaklaşan işlevlere de sahip olduğu gözlemlenmiştir.

Sonuç olarak ulaşılabilen veriler, bağlamada uyarlama olgusunun ve çalışmalarının çalgının icra teknikleri açısından gelişimine, repertuvar zenginliğine, yorumculuk anlayışlarına, amatör ve mesleki eğitim süreçlerine katkı sağlayan bir işlevi olduğuna ve bu durumun farklı açılardan ele alınıp değerlendirilmesi gerektiğine işaret etmektedir.

Anahtar kelimeler: Bağlama, Uyarlama, Çalgısal Adaptasyon, Türk halk müziği, Yorumculuk

İŞ HUKUKUNDA ASGARİ ÜCRET VE ASGARİ ÜCRETİN BELİRLENMESİNE İLİŞKİN ESASLAR

MINIMUM WAGE IN LABOR LAW AND THE PRINCIPLES REGARDING THE DETERMINATION OF THE MINIMUM WAGE

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Özet
Ücret, iş sözleşmesinin temel unsuru olarak, iş hukukunun önemli noktalarından birini oluşturmaktadır. İşverenin ücret ödeme borcu, işçini işini yapma borcu karşısında yer almakta ve işverenin işsözleşmesinden doğan başlıca borcunu oluşturmaktadır. İş Kanunu genel anlamda ücreti, " bir kimseye bir iş karşılığında işveren veya üçüncü kişiler tarafından sağlanan ve para ile olarak ödenen tutar" olarak tanımlamıştır.Asgari ücret uygulaması; çalışanların gelirinin, belirli bir düzeyin altına düşmesini engelleme konusunda, devletin üzerine aldığı en önemli görevlerden birisi ve kamu düzenine ilişkindir. Anayasamızın 55.nci maddesi, Ücret emeğin karşılığı olduğunu, devletin, çalışanların yaptıkları işe uygun adaletli bir ücret elde etmeleri ve diğer sosyal yardımlardan yararlanmaları için gerekli tedbirleri alacağını ve asgarî ücretin tespitinde çalışanların geçim şartları ile ülkenin ve ekonomik durumu da göz önünde bulundurulacağını söylemiştir. Asgari ücret, 4857 sayılı İş Kanununda düzenlenmiştir. Anılan düzenleme, asgari ücretin tanımını, kapsamını değil bizlere daha çok asgari ücretin nasıl belirleneceğini göstermektedir. Asgari Ücret Yönetmeliği asgari ücretin tanımını yapmıştır. Yönetmeliğin Tanımlar başlıklı hükmünde asgari ücret; İşçilere normal bir çalışma günü karşılığı ödenen ve işçinin gıda, konut, giyim, sağlık, ulaşım ve kültür gibi zorunlu ihtiyaçlarını günün fiyatları üzerinden asgari düzeyde karşılamaya yetecek ücret olarak tanımlanmıştır.Sonuç olarak, asgari ücret, işçinin normal bir çalışma günü karşılığı ödenen ve işçinin gıda, konut, giyim, sağlık, ulaşım ve kültür gibi zorunlu ihtiyaçlarını günün fiyatları üzerinden asgari düzeyde karşılamaya yetecek ücreti olarak tanımlanmıştır. Yapılacak düzenlemelerle asgari ücret tespit komisyonunda karar alınırken tüm kesimlerin karara katkıda bulunmaları, ücret belirlenirken ülkenin ekonomik durumu, geçinme indeksleri, ücretlerin genel durumu, yoksulluk ve açlık sınırları daha gerçekçi bir şekilde dikkate alınarak belirleme yoluna gidilmesi asgari ücrette hedeflenen amaca ulaşılmasında en büyük katkıyı sağlayacağı açıktır.
Anahtar kelimeler: Asgari ücret, ücret, iş sözleşmesi

Abstract
Wages, as a fundamental element of the employment contract, constitute one of the important aspects of labor law. The employer's obligation to pay wages is opposite to the employee's obligation to perform their work and constitutes the employer's primary obligation arising from the employment contract. The Labor Law generally defines wages as "the amount provided by the employer or third parties to a person in return for work, and paid in money." The minimum wage application is one of the most important duties undertaken by the state and is related to public order, as it aims to prevent employees' incomes from falling below a certain level. Article 55 of our Constitution states that wages are the compensation for labor, that the state shall take the necessary measures to ensure that employees receive fair wages commensurate with their work and benefit from other social benefits, and that the living conditions of employees and the economic situation of the country shall be taken into consideration in determining the minimum wage.The minimum wage is regulated in the Labor Law No. 4857. This regulation, rather than defining its scope, primarily shows us how the minimum wage is determined. The Minimum Wage Regulation defines the minimum wage. In the section titled "Definitions," the minimum wage is defined as: "The wage paid to workers for a normal working day, sufficient to meet the worker's essential needs such as food, housing, clothing, health, transportation, and culture at a minimum level based on current prices." In conclusion, the minimum wage is defined as the wage paid to a worker for a normal working day, sufficient to meet the worker's essential needs such as food, housing, clothing, health, transportation, and culture at a minimum level based on current prices.

It is clear that the greatest contribution to achieving the targeted goal of the minimum wage will be to ensure that all sectors contribute to the decision-making process in the minimum wage determination commission, and that the country's economic situation, cost of living indices, general wage levels, poverty and hunger thresholds are taken into account more realistically when determining the wage.
Keywords: Minimum wage, wages, employment contract

KELİMELERİN ARDINDAKI BİLGELİK: TEBRİZLİ FİLOSOF – ŞAİR MUHAMMED HİDEJİ YARATICILIĞINDAN SEÇİLMİŞ METİNLER ÜZERİNE FELSEFİ YORUM

THE WISDOM BEHIND THE WORDS: A PHILOSOPHICAL COMMENTARY ON SELECTED TEXTS FROM THE CREATIVE WORKS OF TABRIZ PHILOSOPHER-POET MOHAMMAD HIDEJI

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Özet
19. yüzyılın ilk otuz yılında imzalanan Gülistan (12 Ekim 1813) ve Türkmençay (10 Şubat 1828) antlaşmaları, Azerbaycan'ın jeopolitik kaderinde ulusal parçalanma sürecinin temelini atmıştır. Bu anlaşmalar sadece Kaçar devleti ile Çarlık Rusyası arasındaki sınırları belirlemekle kalmamış, aynı zamanda tek bir etno-kültürel alanı iki farklı siyasi-idari sisteme bölmüştür: Kuzeyde, Rus İmparatorluğu'nun etkisi altında kapitalist ilişkiler ve aydınlanma korunurken, Güneyde Kaçar hanedanlığının yönetimi altında geleneksel Doğu kültürel ortamı korunmuştur. Bu tarihsel parçalanma, hem Kuzeyde, hem de Güneyde ulusal öz farkındalık sürecini güçlü bir şekilde etkilemiştir. Birbirinden ayrılan aynı millet, farklı koşullar altında ulusal kimliğini korumak için mücadele etmeye başlamış ve bu da Azerbaycan'ın hem siyasi hem de edebi-kültürel düşünce tarihinde radikal değişimlerin ana nedeni olmuştur.
Böylece, 19. yüzyılda, halkın aydınlanma ve ilerleme özlemlerinin bir ifadesi olan bu gelişmeler Güney Azerbaycan'da (İran) genişlemeye başladı. Kısa süre sonra, Hacı Mirza Hasan Mehdi oğlu Rüşdi'nin eğitim alanında uyguladığı reformlar ülkeyi etkisi altına aldı ve hatta takipçileri de artmaya başladı; ancak yeniliklere karşı çıkan muhafazakâr çevreler aydınlanma faaliyetlerine ciddi şekilde direndi. Yüzyılın ikinci çeyreğinden itibaren Azerbaycan edebiyatında eleştirel gerçekçilik akımı oluşmaya başladı, popüler eğilimler güçlendi ve bu süreç yeni edebi türlerin ortaya çıkmasına zemin hazırladı. Kuzey Azerbaycan'ın aksine, Güney Azerbaycan'da ilerici düşünceli aydınlar, mevcut sosyo-politik yapıyı açıkça eleştirme ve iktidar politikasının özünü halk kitlelerine tam olarak aktarma fırsatından mahrum kaldılar. Ancak, özellikle Zeynalabdin Maraghayi ve Mirza Abdurrahim Talibov gibi bazı aydın entelektüeller, Kuzey Azerbaycan'da oluşan edebi ortamın yanı sıra Rus ve Avrupa kültürünü de tanıdıktan sonra, toplumda görülen olumsuz olaylara karşı eleştirel bir tutum benimsemeye ve bu sosyal gerçekleri sanatsal ve bilimsel bir düzeyde yansıtmaya çalıştılar. Güney Azerbaycan edebiyatında, modern İran'ın karmaşık sosyal koşullarından kaynaklanan nesnel gerçeklerin sanatsal bir yansıması olarak gerçekçi düzyazı ve dramaturjinin temelleri atılmaya başlandı. Şüphesiz ki, insanlar düşüncelerini sanatsal sözün mucizevi gücüne ve zamanın gereklerine uygun olarak ifade ederler. Bu bakış açısından, Güney Azerbaycan edebiyatında gerçekçi düzyazı ve dramaturjinin oluşumu, doğrudan dönemin sosyo-politik ortamının ve gerçek yaşam gerçeklerinin sanatsal yansımasından kaynaklanmıştır. Mevcut sosyo-kültürel koşulların yol açtığı bu acı gerçekleri samimiyetle ve açıkça dile getiren konuşmacılardan biri de Mahammad Masumali oğlu Hideji'dir. Güney Azerbaycan şiirinin önde gelen temsilcilerinden sayılan Hideji, bilim ve kültür çevrelerinde daha çok filozof-şair olarak tanınmaktadır. Eserleri, hem klasik mistik geleneklerin sentezini ve devamını, hem de yaşadığı dönemin toplumsal sorunlarına derinlemesine nüfuz eden felsefi bir bakış açısını sunmaktadır.
Anahtar Kelimeler :anlaşma,sosial koşular, mistik gelenek, toplumsal sorunlar,edebi ortam.

ABSTRACT
The Treaties of Gulistan (October 12, 1813) and Turkmenchay (February 10, 1828), signed in the first thirty years of the 19th century, laid the foundation for a process of national disintegration in Azerbaijan's geopolitical destiny. These treaties not only defined the borders between the Qajar state and Tsarist Russia, but also divided a single ethno-cultural space into two distinct political-administrative systems: in the north, capitalist relations and enlightenment were preserved under the influence of the Russian Empire, while in the south, the traditional Eastern cultural environment was maintained under the rule of the Qajar dynasty. This historical fragmentation strongly influenced the process of national self-awareness in both the north and the south. The same nation, separated from each

other, began to struggle to preserve its national identity under different circumstances, and this became the main reason for radical changes in both the political and literary-cultural thought history of Azerbaijan.

Thus, in the 19th century, the Enlightenment movement, an expression of the people's aspirations for enlightenment and progress, began to expand in South Azerbaijan (Iran). Soon, the reforms implemented by Haji Mirza Hasan Mehdi oglu Rushdi in the field of education influenced the country and even gained followers; however, conservative circles opposed to the innovations seriously resisted the Enlightenment activities. From the second quarter of the century, a critical realism movement began to emerge in Azerbaijani literature, popular trends strengthened, and this process paved the way for the emergence of new literary genres. Unlike North Azerbaijan, in South Azerbaijan, progressive intellectuals were deprived of the opportunity to openly criticize the existing socio-political structure and fully convey the essence of the government's policies to the masses. However, some enlightened intellectuals, particularly Zeynalabdin Maraghayi and Mirza Abdurrahim Talibov Guzey, after becoming familiar with the literary environment that had formed in Azerbaijan, as well as Russian and European culture, adopted a critical stance towards the negative events observed in society and tried to reflect these social realities at an artistic and scientific level. In the literature of Southern Azerbaijan, the foundations of realistic prose and dramaturgy began to be laid as an artistic reflection of the objective realities arising from the complex social conditions of modern Iran.

Undoubtedly, people express their thoughts in accordance with the miraculous power of artistic expression and the demands of the time. From this perspective, the formation of realistic prose and dramaturgy in South Azerbaijani literature stemmed directly from the artistic reflection of the socio-political environment and real-life realities of the period. One of the speakers who sincerely and openly expressed these painful realities caused by the prevailing socio-cultural conditions is Mahammad Masumali oğlu Hideji. Hideji, a leading representative of South Azerbaijani poetry, is better known in academic and cultural circles as a philosopher-poet. His works offer both a synthesis and continuation of classical mystical traditions, as well as a philosophical perspective that deeply penetrates the social problems of his time.

Keywords: agreement, social conditions, mystical tradition, social issues, literary environment.

HUMAN-CENTERED DIGITAL TRANSFORMATION IN MINING: WORKFORCE READINESS, SAFETY CULTURE, AND ETHICAL AI ADOPTION

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Abstract
Digital transformation in mining is often described through technologies such as automation, artificial intelligence, robotics, remote sensing, and real-time analytics. However, the success of these technologies depends heavily on the people who design, manage, operate, and are affected by them. Mining remains a high-risk, labor-intensive, and socially complex sector in which technological change can improve safety and productivity, but may also create concerns related to workforce displacement, skill gaps, trust, surveillance, decision accountability, and unequal access to digital opportunities. This conceptual paper proposes a human-centered framework for digital transformation in mining, emphasizing workforce readiness, safety culture, ethical AI adoption, and organizational learning. The framework argues that digital mining strategies should integrate technical innovation with training, participatory design, transparent communication, and ethical governance. It discusses how workers can be supported through reskilling, digital literacy, collaborative human-machine systems, and inclusion in technology implementation processes. The paper also examines the importance of maintaining safety culture when operations become increasingly remote, automated, and data-driven. Its contribution is to shift the discussion of mining digitalization from technology-centered adoption toward socio-technical transformation. The paper concludes that responsible digital mining requires more than advanced tools; it requires a workforce-oriented approach that strengthens trust, improves safety, protects human dignity, and ensures that technological progress contributes to sustainable and inclusive mining futures.
Keywords: Human-centered mining; Digital transformation; Workforce readiness; Ethical AI; Safety culture; Automation.

EVALUATING THE IMPACT OF MACHINE LEARNING CLASSIFICATION METHODS ON CORRELATION-BASED SSVEP DECODING

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Abstract
Background: Steady-state visual evoked potential (SSVEP)-based brain–computer interfaces (BCIs) have been widely adopted due to their high information transfer rates and minimal training requirements [1], [2]. However,conventional SSVEP decoding methods, particularly canonical correlation analysis (CCA)-based approaches, remain limited in recognition accuracy and robustness when short time windows are used, which restricts real-time BCI performance [3].
Objective: This study aims to evaluate whether integrating machine-learning-based classification blocks enhances the performance of standard CCA and an improved extended CCA with sum of squares correlation (eCCA-SSCOR) for SSVEP recognition [4].
Methods: An enhanced eCCA-SSCOR framework is evaluated with and without an additional classification stage using Support Vector Machines (SVM) and Linear Discriminant Analysis (LDA), with Particle Swarm Optimization (PSO) employed for classifier parameter optimization. For comparison, SVM and LDA are also applied to the standard CCA method. Performance is assessed across multiple time windows using the publicly available San Diego SSVEP dataset, comprising 12 stimulation frequencies recorded from 10 subjects [5].
Results: The inclusion of a classification block in the standard CCA framework yields a notable improvement in recognition accuracy, with average gains depending on the time window length. In contrast, the enhanced eCCA-SSCOR method does not exhibit further accuracy improvements when combined with SVM or LDA, achieving comparable performance with and without a classification block across all evaluated time windows. These results indicate that eCCA-SSCOR inherently provides strong frequency discrimination without reliance on additional machine-learning classifiers.
Conclusion: The findings demonstrate that while machine-learning classifiers can significantly enhance conventional CCA-based SSVEP recognition, they are not necessary for the proposed eCCA-SSCOR framework. This highlights the effectiveness of the enhanced correlation-based approach and supports its suitability for fast, accurate, and computationally efficient real-time BCI applications.

Keywords: Brain–computer interface (BCI), Steady-state visual evoked potentials (SSVEP), Canonical correlation analysis (CCA), eCCA-SSCOR, Support Vector Machines (SVM), Linear Discriminant Analysis (LDA)

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A NEURAL CASCADE ARCHITECTURE FOR REAL-TIME TRANSACTION FRAUD DETECTION IN NIGERIAN FINTECH APIS: DESIGN, IMPLEMENTATION, AND EXPLAINABILITY

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Abstract
Real-time transaction fraud detection in Nigerian fintech platforms presents a trilemma: compliance teams must simultaneously optimise for detection accuracy, inference speed, and explainability, but no monolithic approach can satisfy all three constraints. This paper addresses the first two objectives of a larger research programme: (1) the design of a cascading decision architecture comprising a FraudMLP and an FT-Transformer as sequential fast-path tiers, reserving agentic escalation for genuinely ambiguous cases; and (2) the implementation of this fast-path cascade with FocalLoss optimisation and shared preprocessing across a 33-dimensional feature space derived from the NIBSS fraud dataset. Grounded in Chow's optimal rejection theory, the cascade defines clean ($p < 0.05$) and fraud ($p > 0.95$) thresholds that maximise throughput while preserving detection quality. The FraudMLP employs a 33-128-64-1 feedforward architecture with BatchNorm, dropout, and OneCycleLR scheduling; the FT-Transformer uses per-feature linear projections, three Transformer encoder layers, and a [CLS]-token classification head. Both models are trained with FocalLoss (gamma = 2.0, alpha = 0.25) on 800,000 synthetically generated transactions calibrated to Nigerian fintech statistics. Results demonstrate that the two-tier cascade resolves approximately 92% of transactions at the FraudMLP tier with sub-10ms latency, escalates 7% to the FT-Transformer (sub-25ms), and reserves less than 1% for agentic reasoning. SHAP GradientExplainer attributions provide faithful feature-level explanations across all decision tiers. The paper contributes a theoretically grounded, empirically validated architecture for real-time, explainable fraud detection in resource-constrained fintech environments.
Keywords: Fraud detection, neural cascade, FT-Transformer, Focal Loss, SHAP, XAI, Nigerian fintech.

A REAL-TIME AI-GENERATED CONTENT DETECTION FRAMEWORK FOR MOBILE DEVICES

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Abstract
The rapid advancement of artificial intelligence technologies has accelerated the creation and dissemination of synthetic digital content across social media platforms, mobile applications, and online communication environments. AI-generated text, manipulated images, and deepfake videos are increasingly being exploited for misinformation, impersonation, phishing, and other forms of digital deception, thereby posing significant threats to information credibility and public trust. As synthetic media becomes more realistic and difficult for humans to identify, there is a growing need for intelligent and accessible real-time detection systems that operate directly on mobile devices and can distinguish between AI-generated and human-created content. This study presents a real-time AI-generated content detection framework for mobile devices designed to assist users in identifying potentially synthetic or manipulated media during online interactions. The proposed framework adopts multimodal detection architecture capable of analyzing text, images, and videos within a unified mobile environment. For textual analysis, a fine-tuned transformer-based model using RoBERTa is employed to identify linguistic patterns associated with AI-generated and misleading textual content. Image verification is performed using an optimized MobileNetV3 architecture enhanced with frequency-domain feature analysis to detect synthetic image artifacts and visual inconsistencies. For deepfake video detection, the framework integrates a hybrid MobileNet and LSTM model to capture both spatial and temporal manipulation patterns within video sequences. The system continuously monitors displayed media content and generates contextual alerts whenever suspicious AI-generated or manipulated content is identified. Experimental evaluation conducted using publicly available benchmark datasets demonstrates strong detection performance across multiple media modalities while maintaining computational efficiency suitable for contemporary Smartphone environments. The proposed framework advances cybersecurity and AI research by offering a practical mobile-based solution for combating misinformation, synthetic media abuse, and digital deception, ultimately contributing to enhanced digital trust and safer human interaction in modern communication ecosystems.
Keywords: AI-generated content detection, deepfake, misinformation, artificial intelligence, multimodal, verification, RoBERTa, MobileNetV3, cybersecurity.

SOURCING AND APPLICATIONS OF MATERIALS WITH PHASE CHANGE

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ABSTRACT
Phase change materials (PCMs) have recently been introduced to improve the thermal properties of building materials, including thermal mass, thermal inertia, and specific heat capacity. PCMs are substances capable of storing and releasing a large amount of heat energy when undergoing phase transitions. These are grouped into three main categories: organic, inorganic and eutectic mixtures. The incorporation of PCMs into materials such as concrete and gypsum significantly increases their thermal mass, which helps regulate the interior temperature of buildings. Consequently, energy conservation in buildings through thermal energy storage (TES) becomes more achievable.
The advantages of using PCM for the accumulation of thermal energy and cold, respectively, in construction and air conditioning installations, as well as in other fields, has led several scientific studies oin the field. Based on the external climatic parameters corroborated with the comfort microclimate: indoor, the technical applications of PCM can have the following destinations: heat storage systems; cold accumulation systems; mixed heat and cold storage systems. Regardless of the field and technical method of use, PCM applications are similar to regenerative heat exchangers, being characterized by cyclic operation, the exchanger being successively traversed by thermal agents. The most widely used inorganic PCMs in the temperature range specific to buildings and air conditioning installations [1][2] are: *crystallohydrates*: $AB{\cdot}nH_2O$, are crystalline solids derived from salts containing water molecules. Crystallohydrates are similar to alloys composed of salts, in most cases inorganic and water, which form a crystalline solid; *metals and metallic binary (eutectic) solutions* have low melting/solidification temperatures. The main advantage of metallic PCM is determined by the high thermal conductivity compared to the other PCMs. The main advantages of binary solutions with PCM [3]: variable temperature range of the phase change, depending on the composition; at eutectic concentration, the phase change is sudden, similar to pure substances; The latent heat volume is slightly higher than in the case of organic substances. Since binary solutions are a novelty in the field of technical applications, there is not enough information regarding their thermophysical properties [3]. The applications of phase-change materials (PCM) have become of great interest in recent years due to the beneficial effects on the thermal, mechanical and durability properties of building and paving materials. PCMs can alter the thermal mass and thermal inertia of building materials, thereby improving thermal energy storage.
This work uses the Pickering emulsion method to create new inorganic hydrated salt@SiO2 phase change microcapsules with a modified eutectic hydrated salt as the core and a dual-component silica/nanosilica shell.

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PLASTICIZER-INDUCED SELF-HEALING IN BIOPLASTICS: OPPORTUNITIES FOR NEXT-GENERATION ELECTRICAL INSULATION MATERIALS

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ABSTRACT
The increasing need for sustainable, environmentally friendly, and biodegradable products has drawn much interest in the field of bioplastics. The article examines the importance of plasticizers such as glycerol and sorbitol as intrinsic self-healing agents in bioplastics for electrical insulation purposes. The self-healing capability of the bioplastics is generally studied through cut-heal testing, whereas dielectric strength was measured before and after damage. Self-healing efficiency of the bioplastics is greatly enhanced with the addition of plasticizers, with glycerol-based systems showing faster healing rates. However, an increase in the quantity of plasticizers leads to increase in moisture absorption, causing a reduction in dielectric strength. Hence blended plasticizers are preferrable as they exhibit an optimum balance.
Keywords: plasticizers, sustainable development, self-healing materials, electrical insulation, power cables

INVESTIGATION OF THE MECHANICAL PROPERTIES AND COEFFICIENT OF FRICTION OF AN IRON MATRIX COMPOSITE

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Abstract
Iron matrix composites (IMCs) have attracted considerable attention in engineering applications due to their excellent combination of mechanical strength, wear resistance, and cost-effectiveness. In the present study, the mechanical and tribological properties of an iron matrix composite reinforced with alumina (Al_2O_3) and zirconia (ZrO_2) particles were investigated. Pure iron was used as the matrix material, while alumina and zirconia were incorporated as ceramic reinforcements to enhance the composite's performance under compressive loading and sliding wear conditions. The composite was fabricated using powder metallurgy techniques, followed by compaction and sintering to achieve a uniform distribution of the reinforcing particles within the iron matrix.
The mechanical behaviour of the fabricated composite was evaluated through compression testing. The results indicated a significant improvement in strength due to the presence of the hard ceramic reinforcements. A maximum compressive strength of 178 MPa was achieved, demonstrating the effectiveness of alumina and zirconia particles in increasing the load-bearing capacity of the iron matrix. The enhancement in strength can be attributed to the strong interfacial bonding between the matrix and reinforcement phases, as well as the restriction of dislocation movement caused by the ceramic particles.
The tribological performance of the composite was assessed through wear and friction tests. The composite exhibited a coefficient of friction of 0.416, indicating stable sliding behavior and improved resistance to surface degradation. The hard alumina and zirconia particles acted as protective phases that reduced direct metal-to-metal contact and minimized material removal during sliding. This resulted in enhanced wear resistance compared with unreinforced iron.
Overall, the experimental findings demonstrate that the incorporation of alumina and zirconia reinforcements significantly improves the mechanical and wear characteristics of iron matrix composites. These materials show considerable potential for use in automotive, industrial, and structural applications where high compressive strength, low wear rates, and reliable tribological performance are essential.
Keywords: Iron, composite, mechanical properties, Coefficient of friction

HEAT CONDUCTION WITH MOVING BOUNDARY: A STEFAN PROBLEM APPROACH APPLIED TO CARAMEL PRODUCTION

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Abstract
Chemical Engineering is fundamental for understanding complex dynamic systems on an industrial scale, especially those involving phase transitions, such as the caramelization process of sugars. However, traditional thermal modeling of reactors faces difficulties in accurately incorporating and quantifying the nonlinear latent heat terms in energy balance approaches. This study aimed to apply and validate a mathematical model to describe the dynamics of heat transfer during sugar melting, focusing on determining the influence of latent heat on phase front propagation. For this purpose, the analytical solution of the Stefan Problem was used, treating caramelization as a one-dimensional moving boundary problem through the implementation of the Heat Conduction Equation and the Stefan Condition in a Matlab simulation environment. Through the simulations, substrate temperature profiles were described by varying heating time, initial temperature, melting temperature, and thermal conductivity. The results demonstrated that the heat transfer rate is directly influenced by heating time and substrate thermal conductivity. In addition, the analysis validated that the latent heat of fusion is the parameter that defines the distance required for the maximum temperature to be reached. The study contributes to chemical reaction engineering by providing an analytical model of heat conduction, essential for the design and thermal control of reactors operating with phase change.
Keywords: Stefan Problem, Latent Heat, Moving Boundary, Caramelization.

TRANSFORMING CULTURAL RESOURCES INTO SUSTAINABLE LIVELIHOODS THROUGH RURAL HERITAGE TOURISM MODEL IN AN XUAN VILLAGE, HUE CITY, VIET NAM

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Abstract
In the context of modernization and rural transformation, leveraging local cultural resources to create sustainable livelihoods has become a key strategy for sustainable rural development. This paper explores the potential and mechanisms for transforming indigenous cultural heritage into socio-economic values through a rural heritage tourism model, focusing on the case of An Xuan village, Hue city, Vietnam. Possessing a rich history of over 500 years alongside a unique wetland ecosystem near the Tam Giang lagoon, An Xuan village preserves highly authentic cultural resources, notably its traditional festival system including the Spring Worship Ceremony (Xuan Thu), the Whale Worship Festival (Cau Ngu), and traditional boat racing. Through qualitative analysis and secondary data evaluation, the research indicates that while these cultural resources hold immense potential for tourism, their contribution to local community livelihoods remains fragmented and highly seasonal. To address these limitations, the paper proposes a comprehensive framework for an integrated rural heritage tourism model. Key solutions include establishing community-based tourism governance, professionalizing cultural storytelling, digitizing village heritage, and creating interactive experiential tourism products. By involving local residents as primary actors and beneficiaries, this model aims to balance genuine heritage conservation with community livelihood improvement, providing a sustainable development pathway for satellite rural areas in Central Vietnam.
Keywords: Cultural resources, sustainable livelihoods, rural heritage tourism, An Xuan village, community-based development.

"GREEN" STRATEGIES AS A COMPETITIVE ADVANTAGE: INTEGRATING THE SUSTAINABLE DEVELOPMENT GOALS (SDGS) INTO CORPORATE MANAGEMENT

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Abstract
In the context of modern global challenges, climate change and resource scarcity, the implementation of sustainable development principles has become an indispensable prerequisite for business survival and development. This article discusses the strategic aspects of integrating the UN Sustainable Development Goals (SDGs) into corporate management and their impact on the long-term competitiveness of the organization. Based on the theoretical framework of the Resource-Based View (RBV), the paper analyzes how "green" competencies and eco-innovations are transformed into a unique, hard-to-imitate asset of the company. The article examines in detail the reflection of environmental, social and governance (ESG) factors in corporate risk management, the production cycle and green logistics. Based on theoretical and practical case studies, the paper shows that strategic adaptation of sustainability objectives not only improves brand reputation, but also increases access to international green capital and ensures cost efficiency. The final section presents practical recommendations for managers to effectively manage the strategic transformation process and avoid the risks of pseudo-green marketing ("greenwashing").
Keywords: strategic management, sustainable development goals (SDGs), green strategy, competitive advantage, ESG risks, eco-innovation.

THE IMPACT OF MANAGERS' COMPETENCIES ON EMPLOYEES' PERFORMANCE: A STUDY ON COMMERCIAL BANKS IN SRI LANKA

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ABSTRACT

The development of managerial competencies is being seriously measured by organizations nowadays since they crop more benefits for organizations specially in banks in achieving its overall goal accomplishment process. Today, the part of employees' performance in the banking sector has become so imperative. The primary objective of this research is to identify the impact of manager competencies on employee's performance. Thus, this study investigated the impact of manager's competencies on employee performance in the context of selected commercial banks in Sri Lanka.

Through a systematic literature review, the theoretical framework was formulated and accordingly, mangers' skills, managers' characteristics, knowledge and values were identified as independent variables which were expected to influence on the performance of employees. Research methodology employed with selected 260 employees and 30 managers through simple random sampling method. Data was collected through structured questionnaires using Likert scale and the analysis was conducted by SPSS software, to perform correlation and regression analysis to prove the research Hypothesis.

The findings of the study showed that, all the four variables such as managers' skills, characteristics, knowledge, values showed a significant impact on employees' performance. That is, employee's performance is positively correlated with total Manager's competencies where the correlation is 0.917 at 0.000 significant level. And the manager's skills are more related to employees' performance compared to other manager's competencies. Thus, employees' performance is expected to increase when managers have more skills as compared to other manager's competencies.

Further 86% of variance in employee's performance (R^2 0.862) is accounted by all four variables of manager's competencies to explain the employees' performance of Commercial banks in Sri Lanka. The study would help to enlighten banks about the concern of managers' competencies that might affect their employees' performance which would lead higher productivity of the banking institutions in Sri Lanka. The research would also assist the manager and suboardinates realize their obligation and responsibility toward better performance of the organization. Policy makers, academicians, practitioners and the researchers may highlight the findings of the study to enhance the overall productivity of the banking sector as whole.

Keywords: Managers' competencies. Employee Performance, Commercial Banks, skills, characteristics, knowledge, values

IMPORTANCE OF SUSTAINABILITY IN SEAPORTS: EVIDENCE FROM PAKISTAN

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ABSTRACT
This in-depth study establishes a multidimensional research framework to look at changes in sustainability within the seaport system. Important research variables were studied in the environmental, economic, operational, and social dimensions by carefully looking at about 58 peer-reviewed sources. Survey items were adapted from published literature to measure these variables. The Institutional theory, Resource-Based View, and Stakeholder theories were employed to explain how sustainability drivers, implementation mechanisms, and performance outcomes are related. A survey of 325 port-related professionals in the Pakistani environment reveals significant differences in performance between sustainable and conventional ports, when compared to secondary data from some world ports in the literature. Sustainability leaders have an advantage across key operational metrics. Port conversion projects have specific cost structures. For example, green infrastructure helps protect the ecosystem, shore power / renewable energy for decarbonization, smart ports, and automation to cut energy consumption. Shore power infrastructure costs between $5 to $18 million per berth, and automation systems cut energy use per container by about 34%. The study adds a new Port Sustainability Transition Framework (PSTF) to help make strategic investments and devise policies in maritime logistics ecosystems.
Keywords: Green Ports, Sustainability Transition, Maritime Logistics, Shore Power / renewable energy, Port Automation, Sustainability Metrics, and Cost-Benefit Analysis.

DETERMINANTS OF NON-PERFORMING LOANS IN ALBANIA: MACROECONOMIC DRIVERS, BANKING SECTOR CHARACTERISTICS, AND POST-REFORM EVIDENCE

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Abstract
Non-performing loans (NPLs) represent a critical indicator of banking sector stability and financial vulnerability, particularly in transition and emerging economies. This study examines the determinants of non-performing loans in Albania by analyzing the effects of macroeconomic conditions, banking sector characteristics, and regulatory developments on credit quality. The research draws upon data from the Albanian banking sector, reports of the Bank of Albania, and relevant empirical literature, covering both the post-global financial crisis period and subsequent banking sector reforms.
The analysis focuses on key determinants of NPLs, including economic growth, unemployment, lending interest rates, exchange rate movements, credit expansion, and foreign currency lending. The findings indicate that weak economic growth, rising unemployment, elevated lending rates, and rapid credit growth significantly contributed to the deterioration of loan portfolios during the years following the global financial crisis. In addition, the widespread use of foreign currency lending and weaknesses in credit risk assessment practices increased borrowers' vulnerability and contributed to higher levels of non-performing loans. The study further highlights the importance of institutional factors, particularly banking supervision, regulatory reforms, collateral enforcement mechanisms, and risk management practices.
Evidence from the post 2015 period demonstrates a substantial improvement in banking sector performance, reflected in the significant decline of the NPL ratio following regulatory reforms and strengthened supervisory measures. Nevertheless, the results suggest that the fundamental determinants of NPLs remain largely unchanged. The study concludes that macroeconomic stability, prudent lending practices, effective credit risk management, and robust regulatory oversight are essential for maintaining low NPL levels and enhancing the resilience of the Albanian banking system. The findings contribute to the literature on credit risk in transition economies and provide policy implications for regulators and financial institutions.
Keywords: Non-performing loans; Albania; credit risk; banking sector; financial stability; macroeconomic determinants; banking supervision; regulatory reforms.

QUANTUM FINANCE: TRANSFORMING FINANCIAL MODELING AND DECISION-MAKING IN THE ERA OF QUANTUM COMPUTING

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Abstract
The financial sector is highly dependent on computation to optimize portfolios, evaluate risks, price derivatives, detect frauds, and forecast markets. Unfortunately, the growing complexity in the world of financial markets creates difficulties for traditional computing methods. Quantum finance refers to a new multi-disciplinary approach to solving computational problems that are hard to compute through classical means. As it involves the use of quantum computing, financial mathematics, and artificial intelligence, quantum algorithms can be used for optimizing financial analysis and decision-making processes. Quantum computing has several exciting potential applications in the areas of portfolio optimization, Monte Carlo simulations, options valuation, credit risk assessment, and high frequency trading. With the ability to process large amounts of information and look at various possibilities at the same time, quantum computers have the potential of minimizing computation times when using complex financial models. Also, the inclusion of quantum machine learning capabilities in the computational processes is expected to improve predictions and the identification of trends and anomalies in financial markets. Quantum computing, though possessing tremendous possibilities, also presents a number of challenges to its application in finance. These include constraints in hardware, the creation of new algorithms, cybersecurity issues, and the requirement for specific skills. Currently, quantum computing is still in its early days, but significant investments have been made into research in the area of computational finance. This study will delve into the basic concepts of quantum finance, their application, upcoming prospects, and difficulties involved in implementing this concept. The use of quantum technology in the area of finance will bring about changes to the financial system in the digital age.
Keywords: Quantum Finance, Quantum Computing, Financial Modeling, Portfolio Optimization, Quantum Algorithms, Risk Management, Quantum Machine Learning, FinTech, Digital Finance, Computational Finance

BETWEEN DOMESTIC LAW AND EUROPEAN STANDARDS: THE LEGAL TREATMENT OF PERSONAL DATA AND SECURITY OBLIGATIONS IN ALBANIA

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Abstract
This paper examines the legal treatment of personal data in Albania within the framework of both domestic and international law, with primary focus on compliance with the European Union's General Data Protection Regulation (GDPR). Through an in-depth analysis, the study reviews Albanian legislation—including the Constitution of the Republic of Albania and Law No. 9887/2008 on the Protection of Personal Data—as well as the security measures implemented to safeguard individual privacy. The paper traces the evolution of this field from an international perspective, drawing on the standards established by the Organization for Economic Co-operation and Development (OECD) and the Council of Europe, and sets that international trajectory against the progress made in Albania.
A significant part of the paper addresses the categorization of personal data, distinguishing between ordinary and sensitive data, and examines the legal measures required for their protection. In this context, the study identifies the particular challenges Albania faces in protecting sensitive categories of data—including genetic, ethnic, and health-related information—which demand a more stringent regulatory response.
The paper further contains a compliance analysis of the Albanian legal framework against the requirements of the GDPR, identifying the steps taken toward approximation, including recent legislative amendments and the reform process currently under way to achieve full conformity. Albania is at a transitional stage in its alignment with European Union standards; nonetheless, it continues to face substantial challenges, particularly with regard to the regulation of automated data processing and the need for greater transparency on the part of institutions engaged in the collection and processing of personal data.
Finally, the paper offers recommendations for the improvement of the Albanian legal framework, with the aim of strengthening protective measures and ensuring the security of personal data in accordance with the requirements of international markets and Albania's European integration process. Particular emphasis is placed on the need for closer harmonization with international best practices and for more effective oversight by Albanian supervisory authorities in the enforcement of existing legislation.
Keywords: personal data protection; GDPR compliance; Albanian data protection law; sensitive data categories; data security measures; EU approximation

ASSESSING SCOPE FOR ARBITRABILITY IN INTELLECTUAL PROPERTY DISPUTES WITH SPECIAL REFERENCE TO INDIAN LAWS

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ABSTRACT

Purpose: The rapid commercialization of intellectual properties (IP) and the increasing resort to arbitration as a preferred and speedy dispute resolution mechanism have been debated across jurisdictions whether there is any scope for arbitrability of intellectual property disputes? Such debates have some grounded agreements related to two different set of laws namely intellectual property rights (IPR) and alternative dispute resolution (ADR). Despite the significance of arbitration, some uncertainty persists such as whether IP disputes particularly where issues related to *rights in rem* and *rights in personam* are concerned, may be referred to arbitral tribunal? If yes, to what extent and under what circumstances? Which specific laws will be directly/indirectly may be relied upon to address such legal issues? Whether there are judicial pronouncements addressing such legal issues particularly in the jurisdiction of India? To evaluate each such related issue, this paper assesses scope for arbitrability in matters of IPRs' disputes with special reference to Indian laws.

Methodology: The research design for this study is doctrinal and qualitative wherein method adopted is analytical, interpretative and comparative-references with some developed legal system in the field of commercial arbitration framework. The analysis of the research questions will be based on the legal principles dealing with '*rights-in-rem'* and *'rights-in personam'*. Further; examination for the scope for arbitrability of the IP disputes will be based on the interpretative legal method wherein primary sources like the Arbitration and Conciliation Act, 1996, IP statutes, and judicial precedents will be evaluated. The research further applies a comparative approach by examining arbitration practices relating to IP disputes in some other jurisdictions such as the USA, UK, and Singapore in the above said context.

Findings: The literature shows that ADR is grounded on the principles of law of *contract (right in rem)* whereas IPR is basically right in rem without exception across legal jurisdictions. However; a trend is observed wherein many judiciaries including India is strengthening arbitration jurisprudence in consonance with the international organisations guidelines, policies, conventions and treaties to address issues of arbitrability in right-in rem disputes as well by holding a distinguished approach differentiating between *rights in rem* and *rights in personam* within the intellectual property framework which was not primarily designed in the convention of treaties itself or domestic codified laws.

Research Limitations: This study is limited only to the question of arbitrability of IP disputes from the perspectives of the principles of *'right in rem'* and *'right in personam'*. To analysis research questions, judicial pronouncement will also be used as literature and primary source. However, such pronouncements will be limited to Indian judicial interpretations.

Practical Implications: The finding of this study gives insights to the lawyers, arbitrators and mediators including arbitral institutions, contract-drafters, policy-makers, IPR owners seeking effective legal mechanisms to resolve commercial IP disputes.

Originality: The digital and open access data shows that studies are available related to this theme from the perspective of separate and individual IPR arbitrability questions; for example, arbitrability in the matters of copyright or patent or trademark, etc. Another set of available literatures shows that comparative studies have been conducted between India and other country like arbitrability of IP disputes between 'India & USA'. Meaning to say; studies are available related to this discourse from quite different perspective. Therefore, all of the variable implicated in this theme is being studied originally in this research like patentability, IPR disputes, 'rights in rem' and 'rights in personam' and that too having specific contextual comparative references.

This paper is original in the sense that it focuses on the arbitrability questions related to IPR disputes from the perspectives of legal principles and judicial pronouncements having comparative approach to explore optimum to examine research questions.

Keywords: *Intellectual Property, IPR Disputes, ADR, Commercial Arbitration and Conciliation; Rights in Rem, Rights in Personam;* Alternative Dispute Resolution, etc.

A SOURCE CRITICAL STUDY OF PERSIAN MANUSCRIPT *TAZKIRAT UL-MULUK*: INDO-PERSIAN HISTORIOGRAPHY

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Abstract
The present paper deals with a source critical study of an unpublished manuscript, *Tazkirat ul-Muluk* written Rafiuddin Ibrahim Shirazi in the early seventeenth century. The manuscript has neither been edited, nor translated or published. This is an important historical source for the understanding of history of medieval Deccan in particular and Mughal India and Safavid Iran in general. This is a rich source for study of connected history of medieval period. It is also very helpful source to understand history writing of premodern India. There are numerous copies of the manuscript. The present study aims to establish the best copy highlighting differences found in the copies and reasons for discrepancies. The study of this paper gives an overall understanding of the manuscript and the author's perception of history and history writing.
In this paper, I have attempted to answer some specific questions like which is it the best? How to find the best copy? what is the criteria of selection? where other copies of the manuscript are available? what are problems with other copies etc.? The study of the paper helps in determining the best copy in the presence of various copies of the manuscript.
Keywords: Manuscript, Comparison, Variation, Redaction, Historiography and Deccan

FROM BHOJPUR TO THE METROPOLIS: EDUCATIONAL MIGRATION AND SOCIO-ECONOMIC MOBILITY AMONG BHOJPURI-SPEAKING COMMUNITIES IN DELHI NCR (2000–2020)

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Abstract
The twenty-first century has witnessed a significant rise in educational migration within India, particularly from the Bhojpuri-speaking regions of eastern Uttar Pradesh and Bihar to major urban centres. Among these destinations, Delhi NCR has emerged as a prominent hub for higher education, professional training, and competitive examination preparation. This paper examines the relationship between educational migration and socio-economic mobility among Bhojpuri-speaking communities in Delhi NCR between 2000 and 2020.
The study explores the factors that motivate students and young adults from Bhojpuri-speaking regions to migrate for educational opportunities and investigates how education functions as a catalyst for social and economic transformation. It analyzes the role of educational institutions, urban employment opportunities, family aspirations, and migrant networks in shaping patterns of mobility. The paper further examines the impact of educational migration on occupational advancement, income generation, social status, and identity formation among migrants.
Methodologically, the research adopts an interdisciplinary approach by integrating historical analysis with socio-economic perspectives. The study draws upon census data, government reports, educational statistics, migration studies, and relevant scholarly literature to understand long-term trends and transformations. By focusing on a linguistically and culturally distinct community, the paper contributes to broader debates on migration, education, urbanization, and social mobility in contemporary India.
The study argues that educational migration has become one of the most important pathways for socio-economic advancement among Bhojpuri-speaking communities. It has not only facilitated access to better educational and employment opportunities but has also reshaped social identities, aspirations, and patterns of community formation within urban spaces. The findings provide valuable insights into the transformative role of education in contemporary migration processes and regional development.
Keywords: Educational Migration, Bhojpuri-Speaking Communities, Delhi NCR, Social Mobility, Urbanization, Higher Education, Migration Studies.

SOVIET CARTOGRAPHY AND HISTORICAL GEOGRAPHY: IDEOLOGICAL DISCOURSE AND THE COLONIAL TRANSFORMATION OF KAZAKHSTAN

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Abstract
The article examines the methodological limitations of Soviet-era historiography in studying the colonial administrative-territorial transformation in the territory of Kazakhstan. This research lies at the intersection of historical studies, historical geography, and critical cartography. In particular, it is based on a comprehensive scholarly approach that analyzes the methodological and ideological frameworks of Soviet historiography, the representation of colonial administrative-territorial space through cartographic discourse, and the interpretation of historical-geographical data.
Contemporary academic literature lacks sufficient studies that systematically investigate the ideological nature of Soviet cartography and historical geography, or that reveal, through cartographic discourse, the colonial dimensions of administrative-territorial transformation in Kazakhstan. The mechanisms through which the Soviet cartographic language constructed the image of "socialist development" of space, blurred the colonial content of toponymic policies, and influenced historiographical interpretation remain insufficiently explored.
The aim of the study is to determine how ideological filters embedded in Soviet cartography and historical geography shaped the depiction and scholarly interpretation of the colonial administrative-territorial space of Kazakhstan and to identify the historiographical implications of this influence.
The research employs methods of critical cartography, discourse analysis, and historiographical comparison, which make it possible to examine comprehensively the ideological structure of Soviet cartographic materials and historical-geographical texts. The findings demonstrate that the Soviet cartographic language reconfigured administrative-territorial space in accordance with the ideology of "socialist development," thereby systematically masking its colonial content. In addition, the study proposes methodological and substantive adjustments aimed at improving domestic historical-geographical research.
Keywords: Soviet cartography, historical geography, historiography, ideological discourse, colonial transformation, toponymic policy, border discourse, censorship, school atlas, methodology of critical cartography.

ORAMANAT FOLK MUSIC AND ITS IMPACT ON THE INTERIOR DESIGN OF CULTURAL SPACES

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Abstract
This study examines the impact of *Oramanat* folk music on the interior design of cultural spaces and attempts to analyze the relationship between musical characteristics and local architectural principles. In this study, a qualitative research method was used, including content analysis of scientific sources, a comparative study of regional architectural examples, and expert interviews with local architects and musicians. The main goal of this research is to extract interior design patterns appropriate to the musical characteristics of the region and to provide solutions for optimizing cultural spaces based on the extroverted architectural principles of *Oramanat*. The research findings show that the rhythmic structure of *Oramanat* folk music, which is based on harmonious repetitions and specific beats, is also reflected in the spatial organization of the region's architecture. The open layout of spaces, the use of organic forms, the use of wood, stone, and local materials, and the presence of repeating geometric motifs in interior decorations all testify to this connection between music and architecture. In addition, the social interactions that occur in the region's musical ceremonies have directly influenced the design of gathering spaces, leading to the formation of patterns that not only have a musical function but also strengthen a sense of cultural belonging. The interior architecture of cultural spaces in *Oramanat*, if utilizing the characteristics of folk music, can become a rich and multi-sensory spatial experience in which the auditory, visual, and sensory dimensions are intertwined. This article suggests that interior designers, by modeling themselves on indigenous musical structures, design spaces that are not only functionally efficient, but also preserved and enhanced as part of the cultural identity of the region.
Keywords: Oramanat, folk music, interior design, cultural identity.

THE IMPACT OF KURDISH CULTURE ON THE INTERIOR DESIGN OF MUSIC HOUSES (IDENTITY SYMBOLS AND PATTERNS)

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Abstract
Kurdish culture, as one of the oldest and richest cultures in the Middle East, has managed to maintain a unique cultural identity in the context of its turbulent history. This rich culture, whose roots lie in oral traditions, music, handicrafts, and architecture, displays clear manifestations of the interaction between humans, nature, and Art Music houses in Kurdish regions, especially in the *Ormanat* region, are prominent examples of this cultural and artistic coexistence that not only have an educational and artistic function, but also play an important role in preserving and transmitting Kurdish cultural heritage. This article aims to examine the influence of Kurdish culture on the interior design of music houses, analyzing symbols, identity patterns, and visual elements derived from the vernacular architecture of *Ormanat* and traditional Kurdish music. The research method is based on qualitative studies, including the analysis of library resources, field observations, and in-depth interviews with architects and artists in the region. The research findings show that the interior design of these spaces, by utilizing concepts such as rhythm, harmony, and repetition in the art of music and combining them with traditional architectural elements, creates a space that simultaneously has an aesthetic and spiritual function. The results of this study emphasize that the interior architecture of Kurdish music houses can be an inspiring model for the integration of traditional arts and contemporary architecture. These spaces not only respond to functional needs, but also act as a platform for representing and strengthening the cultural identity of local communities. In this regard, the use of indigenous cultural elements in interior design can help preserve and promote cultural heritage and strengthen the sense of belonging to the place in users.
Keywords: Oramanat, Kurdish culture, interior architecture, identity, symbols.

A FEMINIST ANALYSIS OF FEMALE CHARACTERS IN OSCAR WILDE'S AN IDEAL HUSBAND

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Abstract
Oscar Wilde's play *An Ideal Husband* provides a fertile ground for feminist analysis, particularly through its portrayal of female characters. This paper examines Lady Gertrude Chiltern, Mrs. Cheveley, and Mabel Chiltern, analyzing their roles within the framework of Victorian society. By exploring themes of moral authority, agency, and evolving gender dynamics, this study aims to highlight Wilde's critique of societal expectations and the potential for more progressive gender relations.
Keywords: Oscar Wilde, An Ideal Husband, feminist analysis, Victorian society, gender dynamics

POST-COLONIAL POWER AND THE DEHUMANIZATION OF THE SUBALTERN: A COMPARATIVE STUDY OF IMAGINARY MAPS AND DISGRACE

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Abstract
This paper undertakes a comparative analysis of Mahasweta Devi's "Douloti the Bountiful" (collected in *Imaginary Maps*) and J. M. Coetzee's *Disgrace*, examining how both texts expose the systemic dehumanization of subaltern bodies under colonial and post-colonial power structures. Drawing on Gayatri Chakravorty Spivak's postcolonial theory. Frantz Fanon's frameworks on colonial violence, and Michel Foucault's concept of biopower. This study argues that both works construct the female body as a colonial text upon which histories of exploitation, sexual violence, and dispossession are inscribed. The kamiya-seiki system in Devi's novella and the racial dynamics of post-apartheid South Africa in Coetzee's novel serve as analogous mechanisms through which power consolidates itself through the subjugation of gendered and racialized bodies. The paper further explores how both authors mobilize narrative form to render visible the structural silences that sustain colonial hierarchies.
Keywords: subaltern, dehumanization, bonded labor, feminism, biopower, Mahasweta Devi, J. M. Coetzee

IN VITRO EVALUATION OF THE ANTICANCER POTENTIAL OF COMBINATION APPLICATION OF INDISULAM AND THYMOQUINONE IN HUMAN BREAST CANCER CELL LINES

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Abstract
Indisulam (E7070) is a synthetic small molecule derived from aryl sulfonamide and is known as an anticancer agent with the ability to inhibit cell cycle progression. However, its clinical efficacy appears to be hindered by acquired resistance, the molecular basis of which has not yet been fully elucidated. Current literature suggests that the anticancer activity of indisulam may not arise solely from carbonic anhydrase inhibition, but rather from a DCAF15-mediated RBM39-targeted protein degradation mechanism. Recent studies investigating this mechanism classify indisulam within a group known as molecular glues. Furthermore, indisulam has been reported to exhibit synergistic effects with nucleoside analogs and topoisomerase inhibitors, resulting in promising response rates in combination therapies. At this point, thymoquinone, the major and most active constituent of the essential oil obtained from the seeds of the *Nigella sativa* (black seed) plant, possesses significant potential in combinational applications due to its strong anticancer properties. This study investigates the combined application of indisulam and thymoquinone to evaluate their synergistic anticancer potential against MCF-7 human breast cancer cells. It explores whether the combination of these two agents can overcome acquired indisulam resistance and provide a dual-targeted therapeutic strategy. In this study, the MCF-7 breast cancer cell line was used, while healthy human fibroblast cells served as the control group. IC_{50} values for single-agent and combination treatments were determined through MTT assays. After 24 hours of incubation, the IC_{50} value of indisulam in MCF-7 cells was determined to be 833.6 µM, whereas the IC_{50} value of thymoquinone was calculated as 476 µM. When the exposure duration of the cells to the agents was extended to 48 hours, a significant increase in cytotoxic activity was observed; following 48 hours of incubation, the IC_{50} value of indisulam decreased to 725 µM, while that of thymoquinone declined to 235 µM. Healthy human colon fibroblast (CCD) cells were used as the control cell line. In healthy CCD fibroblast cells exposed to increasing concentrations ranging from 1 µM to 1000 µM of both agents for 48 hours, the lethal cytotoxic effect observed in MCF-7 cells was not detected. Metabolic viability in healthy cells treated with indisulam remained at a minimum of 70%, whereas in the thymoquinone-treated group it remained at a minimum level of 60%. The clonogenic survival assay was used to evaluate the long-term proliferative and colony-forming capacities of treated cells. Finally, qRT-PCR analysis was performed to measure changes in the expression of genes associated with cell proliferation and cellular stress. The obtained results demonstrated that the combination model in which indisulam was used as the primary agent and supported with thymoquinone was more effective in inhibiting cell proliferation in MCF-7 cells.
Keywords: Indisulam, thymoquinone, breast cancer, apoptosis, drug resistance.

INVESTIGATION OF THE *IN VITRO* CYTOTOXIC AND APOPTOTIC EFFECTS OF THYMOQUINONE- LOADED PLGA NANOPARTICLES ON U87MG GLIOBLASTOMA CELLS

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Abstract
Glioblastoma (GBM) is an aggressive, malignant primer brain tumor with a high proliferation capacity that develops in the central nervous system. Although current therapeutic approaches include combinations of surgical resection, radiotherapy, and chemotherapy, the median survival time of patients is limited to 12–15 months due to high recurrence rates and the systemic toxicity of chemotherapeutics. These limitations have led to studies directed toward developing nanoparticulate carrier systems capable of crossing the blood-brain barrier (BBB) and providing targeted efficacy. In this regard, poly(lactic-co-glycolic acid) (PLGA)-based nanoparticles, which are biocompatible and biodegradable polymers, are widely used for the encapsulation and controlled release of hydrophobic therapeutic agents. Thymoquinone (TQ), the major bioactive component obtained from the essential oil of black cumin (*Nigella sativa*), is renowned for its antioxidant, anti-inflammatory, and antitumoral properties that trigger apoptosis in neoplastic cells. TQ is particularly known for its potential to cross the blood-brain barrier in neurodegenerative conditions and malignant brain tumors, and to suppress tumor growth by modulating signal transduction pathways in glioblastoma cell lines. However, the high hydrophobicity and poor bioavailability of TQ restrict its clinical translation.In this study, to enhance the therapeutic efficacy of Thymoquinone, the *in vitro* cytotoxic and apoptotic effects of the developed TQ-loaded PLGA nanocarrier system on the U87MG glioblastoma cell line were investigated comparatively with free TQ. The effects of TQ-loaded PLGA nanoparticles on cell viability were determined by MTT assay. The IC_{50} values were found to be 32.50 µg/mL for free TQ and 7.8 µg/mL for TQ-loaded PLGA nanoparticles, respectively. This result demonstrates the potential of the nanocarrier system to enhance therapeutic efficacy. Furthermore, the potential of the nanocarrier system to induce oxidative stress in the cell line was evaluated via hydrogen peroxide (H_2O_2) assay. Cell death and apoptotic mechanisms were analyzed at the cellular level using flow cytometry and at the protein level using Western Blotting. The findings obtained demonstrate that TQ-PLGA nanoparticles hold significant potential as a novel targeted therapeutic strategy with low toxicity in the treatment of GBM.
Keywords: Glioblastoma, thymoquinone, PLGA, polymeric nanocarriers, cytotoxicity, apoptosis.
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ÖĞRENCİ PERSPEKTİFİNDEN TEMEL BİLİMLER EĞİTİMİNİN GÜÇLÜ VE GELİŞTİRİLMESİ GEREKEN YÖNLERİ

STRENGTHS AND AREAS NEEDING IMPROVEMENT IN BASIC SCIENCES EDUCATION FROM THE STUDENT PERSPECTIVE

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Abstract
This study aimed to evaluate medical students' perspectives on basic sciences education and to identify its strengths and areas requiring improvement. Student experiences regarding educational content, teaching methods, laboratory practices, and clinical integration were investigated. This cross-sectional descriptive study was conducted using a questionnaire assessing students' opinions about basic sciences education. Educational materials, teaching methods, laboratory practices, instructor support, and the level of clinical integration were analyzed multidimensionally. Students reported that basic sciences education provides a strong theoretical foundation; however, they emphasized the need for stronger integration with clinical practice. Interactive learning methods, case-based teaching approaches, and laboratory applications were found to positively influence student motivation. Course intensity and excessive theoretical content were identified as areas requiring improvement.
Basic sciences education is one of the fundamental components of medical education. Considering student feedback, increasing interactive learning methods, and strengthening clinical integration may contribute to improving educational quality.
Keywords: Basic Sciences Education, Medical Education, Student Perspective, Educational Quality, Student Satisfaction

Özet
Bu çalışmanın amacı, tıp fakültesi öğrencilerinin temel bilimler eğitimine yönelik görüşlerini değerlendirerek güçlü yönleri ve geliştirilmesi gereken alanları belirlemektir. Öğrencilerin eğitim içeriği, öğretim yöntemleri, laboratuvar uygulamaları ve klinik entegrasyon konularındaki deneyimlerinin incelenmesi hedeflenmiştir.
Kesitsel ve tanımlayıcı tipte planlanan bu çalışmada, tıp fakültesi öğrencilerine temel bilimler eğitimine ilişkin görüşlerini değerlendiren anket formu uygulandı. Eğitim materyalleri, ders anlatım yöntemleri, laboratuvar uygulamaları, eğitici desteği ve klinik ile ilişkilendirme düzeyi çok boyutlu olarak analiz edildi.
Öğrenciler, temel bilimler eğitiminin teorik bilgi altyapısı oluşturma açısından güçlü olduğunu belirtirken, klinik uygulamalarla entegrasyonun artırılması gerektiğini ifade etti. Özellikle interaktif öğrenme yöntemleri, vaka temelli eğitimler ve laboratuvar uygulamalarının öğrenci motivasyonunu olumlu etkilediği gözlendi. Ders yoğunluğu ve teorik bilgi yükünün ise geliştirilmesi gereken alanlar arasında yer aldığı saptandı.
Temel bilimler eğitimi, tıp eğitiminin temel yapı taşlarından biridir. Öğrenci geri bildirimlerinin dikkate alınması, interaktif öğrenme yöntemlerinin artırılması ve klinik entegrasyonun güçlendirilmesi eğitim kalitesinin geliştirilmesine katkı sağlayabilir.
Anahtar Kelimeler: Temel Bilimler Eğitimi, Tıp Eğitimi, Öğrenci Görüşü, Eğitim Kalitesi, Öğrenci Memnuniyeti

THE IMPACT OF METHANE GAS RISK ON SEARCH AND RESCUE OPERATIONS IN CONFINED SPACES SUCH AS CAVES AND SHELTERS: A CBRN PERSPECTIVE

MAĞARA VE SIĞINAK GİBİ KAPALI ALANLARDA METAN GAZI RİSKİNİN ARAMA KURTARMA FAALİYETLERİNE KBRN PERSPEKTİFİNDEN ETKİSİ

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ABSTRACT

Search and rescue and security operations in confined spaces such as caves, shelters, and tunnels face environmental gas risks due to limited ventilation and poor air circulation. Methane (CH_4) constitutes an invisible threat in these environments; its asphyxiating effect and explosive mixture potential between approximately 5% and 15% in air must be assessed jointly. This study presents a qualitative literature review that evaluates methane gas risk not solely within industrial occupational health and safety, but from a Chemical, Biological, Radiological, and Nuclear (CBRN) perspective in relation to search and rescue activities. The physical and chemical properties of methane, accumulation dynamics in confined spaces, detection approaches, multi-gas risks, and a risk-based decision and management framework are examined systematically. Findings indicate that methane risk should be managed through awareness, early detection, dynamic risk assessment, and holistic management in addition to technical measures. The study does not include experimental field data and offers a conceptual and analytical framework.
Keywords: Methane gas, CBRN, confined space safety, search and rescue, risk management

ÖZET

Kapalı alanlarda (mağara, sığınak, tünel vb.) yürütülen arama kurtarma ve güvenlik faaliyetleri, sınırlı havalandırma ve düşük hava sirkülasyonu nedeniyle çevresel gaz riskleriyle karşı karşıya kalmaktadır. Metan (CH_4), renksiz ve kokusuz yapısıyla bu ortamlarda görünmez bir tehdit oluşturmakta; boğucu (asfiksian) etki ile %5–%15 aralığındaki patlayıcı karışım potansiyeli bir arada değerlendirilmeyi gerektirmektedir. Bu çalışma, metan gazı riskini yalnızca endüstriyel iş sağlığı ve güvenliği bağlamında değil, arama kurtarma faaliyetleri açısından Kimyasal, Biyolojik, Radyolojik ve Nükleer (KBRN) perspektifiyle ele alan nitel bir literatür değerlendirmesidir. Metanın fizikokimyasal özellikleri, kapalı alanlardaki birikim dinamikleri, tespit yaklaşımları, çoklu gaz riskleri ve risk temelli karar–yönetim çerçevesi sistematik biçimde incelenmiştir. Bulgular, metan riskinin teknik önlemlerin yanı sıra farkındalık, erken tespit, dinamik risk değerlendirmesi ve bütüncül yönetim yaklaşımlarıyla ele alınması gerektiğini göstermektedir. Çalışma deneysel saha verisi içermemekte; kavramsal ve analitik bir çerçeve sunmaktadır.
Anahtar Kelimeler: Metan gazı, KBRN, kapalı alan güvenliği, arama kurtarma, risk yönetimi

ENFEKSİYON HASTALIKLARINI ÖNLEMEYE YÖNELİK AŞILAR
VACCINES TO PREVENT INFECTIOUS DISEASES

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Abstract
Vaccination is an important part of an individual's and one of the most effective preventive medicine strategies (Wu et al., 2021). Vaccine-preventable illnesses have been considerably decreased by routine immunization programs across the world, with around 2-3 million fatalities saved each year (Çöl, 2021). The entry of pathogenic parasites such as bacteria, viruses, parasites, fungi into the body can cause infection and result of various diseases, even death. Every pathogen has specific subunits that cause the disease. The disease-causing subunits of the pathogen are perceived as a foreign substance by the immune system of the person in whom it enters the body and activates the defense mechanism against it. The subunits of the parasite that are perceived as foreign substance are called antigens. A specific molecule is synthesized by the immune system against each antigen. This molecule is called an antibody. Thousands of antigens enter our body throughout life and special antibodies are produced for each antigen (How Do Vaccines Work?, 2020). When the human body is the first time exposed to an antigen, it takes time for the immune system to activate and produce antigen-specific antibodies. In that point vaccination is certainly important because when the body produce antibodies in response to an antigen, it also produces antibody-producing memory cells, which stay persistent even after the pathogen has been destroyed by the antibodies. If the body is exposed to the same pathogen second time or more, the antibody response is quicker and stronger than the first time exposed because the memory cells are at the ready to pump out antibodies against that antigen. This means that in the future, if the body is exposed to the harmful pathogen, their immune system will be able to respond quickly and protect them from disease. Vaccines producing from attenuated live organisms, complete inactivated organisms, inactivated toxins, and bacterial polysaccharides that cause the body to respond with an immune response. This weaker form will not cause disease in the person who receives the vaccination, but it will cause their immune system to react similarly to how it would if the pathogen was present for the first time. There are different available group for vaccination like pregnant women, healthy adults and especially children (Haelle, 2018) also there are different methods. Synthetic peptides, DNA vaccines, and recombinant-vector vaccines are among the several methods currently being researched for the creation of innovative vaccinations (Babacan, 2002). The aim of this thesis, explain the importance of vaccination for preventing infectious disease, the types and mechanism of vaccine according to recently and past studies.
Keywords: Vaccine types, Infectious diseases, Vaccine production ways, Herd

Özet
Aşılama, en etkili koruyucu sağlık hizmetlerinden biri ve halk sağlığının temel bileşenlerinden biridir (Wu vd., 2021). Dünya genelinde uygulanan rutin bağışıklama programları sayesinde aşı ile önlenebilir hastalıkların görülme sıklığı önemli ölçüde azalmış ve her yıl yaklaşık 2–3 milyon ölümün önüne geçilmiştir (Çöl, 2021). Bakteriler, virüsler, mantarlar ve parazitler gibi patojen mikroorganizmaların vücuda girmesi enfeksiyon hastalıklarına ve ağır vakalarda ölüme yol açabilmektedir. Patojenler, bağışıklık sistemini uyaran belirli bileşenlere sahiptir. Bu bileşenler, konakçı bağışıklık sistemi tarafından yabancı maddeler olarak tanınır ve antijen olarak adlandırılır. Bağışıklık sistemi her bir antijene karşı, istilacı patojenin ortadan kaldırılmasına yardımcı olan özgül antikorlar üretir. İnsanlar yaşamları boyunca binlerce farklı antijene maruz kalır ve bunların her biri için özgül antikorlar oluşturulur (Aşılar Nasıl Çalışır?, 2020). Vücut bir antijenle ilk kez karşılaştığında, bağışıklık sisteminin aktive olması ve antijene özgü antikorlar üretmesi zaman alır. Bu süreçte aynı zamanda bellek B ve T

hücreleri de oluşur. Bu hücreler, patojen ortadan kaldırıldıktan sonra da uzun süre varlığını sürdürür ve aynı antijenle tekrar karşılaşıldığında daha hızlı ve daha güçlü bir bağışıklık yanıtı oluşmasını sağlar. Böylece bağışıklık sistemi patojeni hızla tanıyıp etkisiz hale getirerek hastalığın ortaya çıkmasını önleyebilir veya şiddetini azaltabilir. Aşılar, hastalığa neden olmadan koruyucu bağışıklık yanıtı oluşturmak amacıyla geliştirilmiş biyolojik ürünlerdir. Canlı atenüe mikroorganizmalar, inaktive edilmiş mikroorganizmalar, toksoidler, polisakkaritler ve diğer aşı teknolojileri kullanılarak üretilebilirler. Aşılama sonrasında bağışıklık sistemi, patojenle doğal yoldan karşılaşmış gibi yanıt verir ve immünolojik hafıza gelişir. Aşılama; çocuklar, sağlıklı yetişkinler ve gebeler dahil olmak üzere çeşitli nüfus grupları için önerilmektedir (Haelle, 2018). Geleneksel aşı platformlarının yanı sıra, sentetik peptit aşıları, DNA aşıları ve rekombinant vektör aşıları gibi yenilikçi yaklaşımlar da günümüzde araştırılmaktadır (Babacan, 2002). Bu tezin amacı, bulaşıcı hastalıkların önlenmesinde aşılamanın önemini açıklamak ve aşı türleri ile etki mekanizmalarını geçmiş ve güncel bilimsel çalışmalar ışığında incelemektir.

Anahtar Kelimeler: Aşılama, Aşı Türleri, Bulaşıcı Hastalıklar, Aşı Üretim Teknolojileri, Sürü Bağışıklığı.

TÜRKİYE'NİN DİJİTAL SAĞLIK DÖNÜŞÜMÜNDE HASTANE BİLGİ YÖNETİM SİSTEMLERİ, YAPAY ZEKÂ VE BİYOİNFORMATİĞİN ENTEGRASYONU: KLİNİK BÜYÜK DİL MODELİ İŞ AKIŞLARI VE VERİ YÖNETİŞİMİNİN DEĞERLENDİRİLMESİ

INTEGRATION OF HOSPITAL INFORMATION MANAGEMENT SYSTEMS, ARTIFICIAL INTELLIGENCE, AND BIOINFORMATICS IN TÜRKİYE'S DIGITAL HEALTH TRANSFORMATION: AN EVALUATION OF CLINICAL LARGE LANGUAGE MODEL WORKFLOWS AND DATA GOVERNANCE

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Abstract
Digital health transformation has become a central component of contemporary healthcare systems by enabling large-scale data capture, clinical documentation, and continuity of care. In Türkiye, national digital health infrastructures such as e-Nabız, Sağlık.Net, and Hospital Information Management Systems (HIMS) support the management of large volumes of clinical data. However, the integration of bioinformatics outputs and genomic data into longitudinal HIMS remains challenging due to interoperability limitations, unstructured clinical reporting, and the sensitive nature of genetic data. This study aims to evaluate the end-to-end flow of digital health data in Türkiye and to examine the potential contribution of Large Language Model (LLM)-based artificial intelligence at the interface between HIMS and bioinformatics workflows. A narrative synthesis and workflow-mapping approach was used to examine national digital health components, clinical genomics workflows, public genetics capacity, data governance requirements, and recent evidence on Turkish clinical Natural Language Processing (NLP) and LLM-supported decision support systems. The findings indicate that Türkiye's healthcare system operates at a large national scale, with more than one billion physician visits in 2024, nearly 70 million active e-Nabız users, more than 30,000 integrated health facilities, and 127 licensed Genetic Disease Evaluation Centers. Scenario-based modeling further suggests that annual genetic analyses may range from approximately 1.38 to 4.58 million nationwide. LLM-based artificial intelligence may support digital health transformation by converting unstructured clinical, pathology, and genomic reports into computable structured data, summarizing patient journeys, supporting variant-to-report workflows, and contributing to multidisciplinary clinical decision-making. Nevertheless, safe clinical deployment requires human-in-the-loop supervision, standards-based interoperability, privacy-preserving methods, and robust data governance mechanisms. In conclusion, LLM-based artificial intelligence may serve as a practical bridge between hospital information systems, bioinformatics pipelines, and clinical decision-making frameworks in Türkiye.
Keywords: Digital health, Hospital Information Management Systems (HIMS), Bioinformatics, Large Language Models (LLMs), Artificial intelligence, Clinical genomics, Türkiye, Genetic data security

Özet
Dijital sağlık dönüşümü, büyük ölçekli veri kaydı, klinik dokümantasyon ve bakım sürekliliğini desteklemesi nedeniyle çağdaş sağlık sistemlerinin temel bileşenlerinden biri hâline gelmiştir. Türkiye'de e-Nabız, Sağlık.Net ve Hastane Bilgi Yönetim Sistemleri (HBYS) gibi ulusal dijital sağlık altyapıları büyük hacimli klinik verinin yönetilmesini desteklemektedir. Bununla birlikte, biyoinformatik çıktılarının ve genomik verilerin uzunlamasına HBYS kayıtlarına entegrasyonu; birlikte çalışabilirlik sınırlılıkları, yapılandırılmamış klinik raporlama ve genetik verilerin hassas niteliği nedeniyle önemli bir sorun olmaya devam etmektedir. Bu çalışmada, Türkiye'de dijital sağlık verisinin uçtan uca akışının değerlendirilmesi ve Büyük Dil Modeli (LLM) tabanlı yapay zekânın HBYS ile biyoinformatik iş akışları arasındaki arayüzde sağlayabileceği katkının incelenmesi amaçlanmıştır.

Çalışmada anlatı sentezi ve iş akışı haritalama yaklaşımı kullanılarak ulusal dijital sağlık bileşenleri, klinik genomik iş akışları, kamusal genetik kapasite, veri yönetişimi gereksinimleri ve Türkçe klinik Doğal Dil İşleme (NLP) ile LLM destekli karar destek sistemlerine ilişkin güncel kanıtlar değerlendirilmiştir. Bulgular, Türkiye sağlık sisteminin 2024 yılında bir milyarın üzerinde hekim başvurusu, yaklaşık 70 milyon aktif e-Nabız kullanıcısı, 30.000'den fazla entegre sağlık tesisi ve 127 lisanslı Genetik Hastalıklar Değerlendirme Merkezi ile büyük bir ulusal ölçekte çalıştığını göstermektedir. Senaryo temelli modelleme, yıllık genetik analiz hacminin ülke genelinde yaklaşık 1,38 ile 4,58 milyon arasında değişebileceğini düşündürmektedir. LLM tabanlı yapay zekâ; yapılandırılmamış klinik, patoloji ve genomik raporların hesaplanabilir yapılandırılmış verilere dönüştürülmesi, hasta yolculuğunun özetlenmesi, varyanttan rapora uzanan iş akışlarının desteklenmesi ve multidisipliner klinik karar verme süreçlerine katkı sağlanması açısından dijital sağlık dönüşümünü destekleyebilir. Bununla birlikte, güvenli klinik uygulama için insan gözetimi, standartlara dayalı birlikte çalışabilirlik, mahremiyeti koruyan yöntemler ve güçlü veri yönetişimi mekanizmaları gereklidir. Sonuç olarak, LLM tabanlı yapay zekâ Türkiye'de hastane bilgi sistemleri, biyoinformatik analiz hatları ve klinik karar verme çerçeveleri arasında uygulanabilir bir köprü işlevi görebilir.

Anahtar kelimeler: Dijital sağlık, Hastane Bilgi Yönetim Sistemleri (HBYS), Biyoinformatik, Büyük Dil Modelleri (LLM), Yapay zekâ, Klinik genomik, Türkiye, Genetik veri güvenliği

GİYİLEBİLİR TEKNOLOJİK ÜRÜNLERİN SAĞLIK ALANINDA KULLANIM DÜZEYLERİ

WEARABLE TECHNOLOGICAL PRODUCTS' USAGE LEVELS IN THE HEALTHCARE FIELD

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Abstract
Wearable health technologies allow individuals to monitor their health status and enable early diagnosis of chronic diseases by tracking data such as heart rate, blood pressure, and physical activity through sensors embedded in devices or clothing. The aim of this study is to evaluate the usage levels of wearable technology products in the health field through a literature review in terms of product types, effects on health improvement, differences in adoption across generations, and global market size. The study utilized a qualitative research method, specifically a literature review, examining national and international sources as well as IDC market reports. The findings indicate that health-related reasons are the primary motivation for individuals purchasing these products. In a study of 1000 people, 45% of users preferred fitness bracelets, 60% stated that these products could reduce obesity rates, and 70% indicated that they could positively impact life expectancy. Regarding intergenerational differences, it was found that Generations Y and Z had a more positive attitude towards these products compared to Generation X; perceived benefits and safety were the determining factors for Generation Z, while ease of use was the determining factor for Generation Y. According to IDC 2025 data, the global wearable technology market is expected to grow by 9.1%, reaching 611.5 million shipments. The US and Spain rank highest in usage among high-income individuals. Consequently, wearable technologies are effective in the early diagnosis of chronic health problems such as cardiovascular disease, diabetes, and obesity, improving the quality of healthcare and reducing costs. However, inadequate regulatory frameworks, security and privacy concerns, and digital limitations are key challenges hindering the widespread adoption of the sector.
Keywords: Wearable Technology, Digital Health, Health Monitoring, Generation X-Y-Z, Chronic Disease

Özet
Giyilebilir sağlık teknolojileri, cihazlara veya giysilere yerleştirilmiş sensörler aracılığıyla kalp atış hızı, tansiyon, fiziksel aktivite gibi verileri izleyerek bireylerin sağlık durumlarını takip etmesine ve kronik hastalıkların erken teşhisine olanak sağlamaktadır. Bu çalışmanın amacı, giyilebilir teknolojik ürünlerin sağlık alanındaki kullanım düzeylerini; ürün çeşitleri, sağlığın geliştirilmesine etkileri, kuşaklara göre benimsenme farklılıkları ve küresel pazar büyüklüğü açısından literatür taraması ile değerlendirmektir. Çalışmada nitel araştırma yöntemlerinden literatür taraması kullanılmış, ulusal ve uluslararası kaynaklar ile IDC pazar raporları incelenmiştir. Bulgular, bireylerin bu ürünleri satın alma nedenlerinin başında sağlıkla ilgili sebeplerin geldiğini göstermektedir. 1000 kişiyle yapılan bir çalışmada kullanıcıların %45'i fitness bilekliklerini tercih etmiş, %60'ı bu ürünlerin obezite oranlarını düşürebileceğini, %70'i ise yaşam beklentisini olumlu etkileyebileceğini belirtmiştir. Kuşaklar arası farklılıkta, Y ve Z kuşaklarının X kuşağına kıyasla bu ürünlere daha olumlu yaklaştığı; Z kuşağı için algılanan fayda ve güvenliğin, Y kuşağı için kullanım kolaylığının belirleyici olduğu saptanmıştır. IDC 2025 verilerine göre küresel giyilebilir teknoloji pazarının 611,5 milyon sevkiyata ulaşarak %9,1 büyümesi beklenmektedir. ABD ve İspanya, yüksek gelirli bireyler arasında kullanımda ilk sıralarda yer almaktadır. Sonuç olarak giyilebilir teknolojiler, kardiyovasküler hastalıklar, diyabet ve obezite gibi kronik sağlık sorunlarının erken teşhisi, sağlık hizmet kalitesinin artırılması ve maliyetlerin düşürülmesinde etkilidir. Ancak yetersiz düzenleyici çerçeveler, güvenlik-gizlilik endişeleri ve dijital sınırlamalar sektörün yaygınlaşmasını engelleyen temel zorluklardır.
Anahtar Kelimeler: Giyilebilir Teknoloji, Dijital Sağlık, Sağlık İzleme, X-Y-Z Kuşağı, Kronik Hastalık

GLİFOSAT MARUZİYETİNİN HİPOTALAMİK-HİPOFİZER AKS ÜZERİNDEKİ NÖROENDOKRİN VE NÖROENFLAMATUVAR ETKİLERİ

NEUROENDOCRINE AND NEUROINFLAMMATORY EFFECTS OF GLYPHOSATE EXPOSURE ON THE HYPOTHALAMIC-PITUITARY AXIS

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Abstract
The endocrine-disrupting chemical (EDC) properties of glyphosate and glyphosate-based herbicides (GBHs), which are widely used in agricultural areas worldwide, are drawing increasing attention in the literature. Although it was initially thought to possess low toxicity due to the absence of the aromatic amino acid synthesis pathway in vertebrates, current studies reveal that glyphosate exerts profound effects on the central nervous system, endocrine axes, and neuroinflammatory processes. This chemical interacts directly with the hypothalamic-pituitary-gonadal (HPG) and hypothalamic-pituitary-adrenal (HPA) axes—the central controls of hormonal balance—thereby playing a disruptive role at the endocrine level. It has been reported that glyphosate and its primary metabolite, aminomethylphosphonic acid (AMPA), can cross the blood-brain barrier to reach brain tissue and increase pro-inflammatory cytokines such as TNF-α. At the molecular level, glyphosate disrupts neurotransmission by inhibiting acetylcholinesterase (AChE) enzyme activity in the brain, suppresses the aromatase (CYP19) enzyme to inhibit estrogen synthesis, and suppresses antioxidant enzymes such as superoxide dismutase (SOD) and catalase. Experimental studies indicate that this exposure increases the expression of glial fibrillary acidic protein (GFAP), proliferating cell nuclear antigen (PCNA), and caspase-3 in hypothalamic nuclei, particularly in the paraventricular and supraoptic nuclei, which are critical for peripheral hormone release and central behavioral responses. These cellular alterations indicate that glyphosate induces neurotoxic and neuroendocrine damage by triggering astrogliosis, abnormal cellular proliferation, and apoptosis in the hypothalamic region. This neuroinflammation and oxidative stress disrupt the delicate balance between the hypothalamus and the neurohypophysis, impairing the synthesis and release processes of vital nonapeptides, such as vasopressin and oxytocin, which play critical roles in homeostasis, reproduction, social behaviors, and stress responses. Although studies directly examining the relationship between glyphosate and oxytocin/vasopressin are limited, the EDC literature highlights alterations in maternal care behaviors, shifts in the microbiota-brain axis, and disruptions in steroid-sensitive gene expression as complementary pathways demonstrating that these systems are targeted. Despite strong scientific evidence showing that exposure during pregnancy and early developmental periods can lead to permanent neuroendocrine disorders in subsequent generations, deficiencies in the regulations of agencies such as the U.S. Environmental Protection Agency (EPA) regarding these types of endocrine-disrupting pesticides cause chronic risks to public health and the environment ecosystem to persist.
Keywords: Hypothalamus, Pituitary, Glyphosate, Glyphosate-Based Herbicides, Neuroinflammation, Endocrine Disruptors

Özet
Dünya genelinde tarımsal alanlarda yaygın olarak kullanılan glifosat ve glifosat tabanlı herbisitlerin (GBH), endokrin bozucu kimyasal (EBK) özellikleri literatürde giderek daha fazla dikkat çekmektedir. Başlangıçta vertebratlarda aromatik amino asit sentez mekanizmasının bulunmaması nedeniyle düşük toksisiteye sahip olduğu düşünülse de, güncel çalışmalar glifosatın merkezi sinir sistemi, endokrin akslar ve nöroenflamatuvar süreçler üzerinde derin etkileri olduğunu ortaya koymaktadır. Bu kimyasal, hormonal dengenin merkezi kontrolü olan hipotalamik-hipofizer-gonadal (HPG) ve hipotalamik-hipofizer-adrenal (HPA) aksları ile doğrudan etkileşime girerek endokrin düzeyde sabote edici rol

oynamaktadır. Glifosat ve ana metaboliti Aminometilposfonik Asit'in (AMPA) kan-beyin bariyerini geçerek beyin dokusuna ulaşabildiği ve TNF-α gibi proinflamatuvar sitokinleri artırdığı bildirilmiştir. Moleküler düzeyde glifosat; beyindeki asetilkolinesteraz (AChE) enzim aktivitesini inhibe ederek nörotransmisyonu bozmakta, aromataz (CYP19) enzimini baskılayarak östrojen sentezini engellemekte ve süperoksit dismutaz (SOD) ile katalaz gibi antioksidan enzimleri baskılamaktadır. Deneysel çalışmalar; bu maruziyetin hipotalamik çekirdeklerde, özellikle de periferik hormon salınımı ve merkezi davranışsal yanıtlar için kritik olan paraventriküler ile supraoptik çekirdeklerde Glial Fibriler Asidik Protein (GFAP), Proliferasyon Gösteren Hücre Nükleer Antijeni (PCNA) ve kaspaz-3 ekspresyonunu artırdığını göstermektedir. Bu hücresel değişiklikler, hipotalamik bölgede astrogliosis, anormal hücresel proliferasyon ve apoptozu tetikleyerek glifosatın hem nörotoksik hem de nöroendokrin düzeyde hasar yarattığına işaret etmektedir. Bu nöroenflamasyon ve oksidatif stres, hipotalamus ile nörohipofiz arasındaki hassas dengeyi bozarak homeostaz, üreme, sosyal davranışlar ve stres yanıtlarında kritik roller oynayan vazopressin ve oksitosin gibi hayati nonapeptidlerin sentez ve salınım süreçlerine zarar vermektedir. Doğrudan glifosat-oksitosin/vazopressin ilişkisini inceleyen çalışmalar sınırlı sayıdadır. EBK literatürü, maternal bakım davranışlarındaki sapmaları, mikrobiyota-beyin eksenindeki değişimleri ve steroid-duyarlı gen ekspresyonundaki bozulmaları bu sistemlerin hedef alındığını gösteren tamamlayıcı yollar olarak öne çıkarmaktadır. Gebelik ve erken gelişim dönemlerindeki maruziyetin sonraki nesillerde kalıcı nöroendokrin bozukluklara yol açabildiğine dair güçlü bilimsel kanıtlara rağmen, Amerika Çevre Koruma Ajansı (EPA) gibi kurumların bu tür endokrin bozucu pestisitlere yönelik regülasyonlarındaki eksiklikler, halk sağlığı ve çevre ekosistemi üzerindeki kronik risklerin devam etmesine neden olmaktadır.

Anahtar kelimeler: Hipotalamus, Hipofiz, Glifosat, Glifosat Tabanlı Herbisitler, Nöroenflamasyon, Endokrin Bozucular

ÇEKİŞMELİ ÜRETİCİ AĞ TABANLI SENTETİK EEG VERİ ARTIRIMI VE EPİLEPTİK EEG SINIFLANDIRMASINA ETKİSİNİN İNCELENMESİ

INVESTIGATION OF GENERATIVE ADVERSARIAL NETWORK-BASED SYNTHETIC EEG DATA AUGMENTATION AND ITS EFFECT ON EPILEPTIC EEG CLASSIFICATION

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Abstract
Automatic detection of epileptic seizures from electroencephalography (EEG) signals is an important research topic in the fields of biomedical signal processing and machine learning. However, the costly and time-consuming acquisition of EEG recordings leads to the problem of data scarcity, which can adversely affect classification performance. In recent years, generative artificial intelligence methods, particularly Generative Adversarial Networks (GANs), have emerged as an effective approach for synthetic biomedical data generation. Nevertheless, most existing studies have focused on raw EEG signals or deep learning-based features, while the effect of class-specific GAN-based data augmentation on classical EEG features and conventional machine learning methods has not been sufficiently investigated. In this study, independent GAN models were trained for each EEG class using the University of Bonn EEG dataset, and class-specific synthetic EEG signals were generated. A total of 20 classical features, including 10 time-domain and 10 frequency-domain features, were extracted from both real and synthetic EEG data. The extracted features were evaluated using a Random Forest classifier, and the effects of different synthetic data ratios (0%–400%) on classification performance were investigated. In the experiments, accuracy and macro F1-score metrics were used for binary, three-class, four-class, and five-class classification combinations. The results demonstrated that the effect of synthetic data generated by class-based GANs on classification performance varies depending on the augmentation ratio and the classification scenario. The proposed approach provides a simple and interpretable framework for analyzing the impact of class-specific GAN-based EEG data augmentation on epileptic EEG classification.
Keywords: EEG, Epileptic Seizure Detection, Generative Adversarial Network, Synthetic Data Generation, Data Augmentation, Random Forest

Özet
Elektroensefalografi (EEG) sinyallerinden epileptik nöbetlerin otomatik olarak tespit edilmesi, biyomedikal sinyal işleme ve makine öğrenmesi alanlarında önemli bir araştırma konusudur. Ancak EEG kayıtlarının elde edilmesinin maliyetli ve zaman alıcı olması, veri yetersizliği problemini ortaya çıkararak sınıflandırma performansını olumsuz etkileyebilmektedir. Son yıllarda üretici yapay zekâ yöntemleri, özellikle Çekişmeli Üretici Ağlar (Generative Adversarial Networks-GAN), sentetik biyomedikal veri üretimi için etkili bir yaklaşım olarak öne çıkmaktadır. Bununla birlikte, mevcut çalışmaların çoğu ham EEG sinyalleri veya derin öğrenme tabanlı özelliklere odaklanırken, sınıfa özgü GAN tabanlı veri artırmanın klasik EEG özellikleri ve geleneksel makine öğrenmesi yöntemleri üzerindeki etkisi yeterince incelenmemiştir. Bu çalışmada, Bonn Üniversitesi EEG veri seti kullanılarak her EEG sınıfı için bağımsız GAN modelleri eğitilmiş ve sınıfa özgü sentetik EEG sinyalleri üretilmiştir. Gerçek ve sentetik EEG verilerinden 10 adet zaman ve 10 adet frekans bölgesi özelliği olmak üzere toplam 20 klasik özellik çıkarılmış, elde edilen özellikler Rastgele Orman sınıflandırıcısı ile değerlendirilmiş ve farklı sentetik veri oranlarının (%0–%400) sınıflandırma performansına etkisi incelenmiştir. Deneylerde ikili, üçlü, dörtlü ve beşli sınıf kombinasyonları için doğruluk ve makro F1-skoru ölçütleri kullanılmıştır. Sonuçlar, sınıf bazlı GAN ile üretilen sentetik verilerin sınıflandırma performansına etkisinin veri artırma oranına ve sınıflandırma senaryosuna bağlı olarak değiştiğini göstermiştir. Önerilen yaklaşım, sınıfa özgü GAN tabanlı EEG veri artırmanın epileptik EEG sınıflandırması üzerindeki etkisini analiz eden basit ve yorumlanabilir bir çerçeve sunmaktadır.
Anahtar kelimeler: EEG, Epileptik Nöbet Tespiti, Çekişmeli Üretici Ağ, Sentetik Veri Üretimi, Veri Artırma, Rastgele Orman

HAVAYOLU SEKTÖRÜNDE YAŞANAN TEKNİK ARIZALARIN AKSAKLIĞA DÖNÜŞMESİ İHTİMALİNİN MAKİNE ÖĞRENMESİ YOLU İLE BELİRLENMESİ

DETERMINING THE PROBABILITY OF TECHNICAL FAILURES TURNING INTO OPERATIONAL DISRUPTIONS IN THE AIRLINE SECTOR USING MACHINE LEARNING

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Özet

Havacılık sektöründe teknik arızalar, uçuş operasyonlarının gecikmesine neden olan en önde gelen faktörlerden biridir. Ancak her teknik arıza operasyonel bir gecikmeye neden olmamaktadır; bazı arızalar kısa sürede giderilerek gecikme olmadan sefer icra edilebilmektedir. Havacılık sektöründe seferin, planlı kalkış saatinden 15 dakika ve üzeri geçtikten sonra icra edilmesi gecikme olarak adlandırılmaktadır. Eğer gecikme 2 saat ve üstünde gerçekleşiyorsa bu durum aksaklık olarak adlandırılmaktadır ve farklı Operasyonel önlemler alınmaktadır. Bu çalışmanın amacı, teknik arızaların hangilerinin aksaklığa dönüşeceğinin makine öğrenmesi algoritmalarını kullanarak tahmin etmektir. Araştırma için bir havayolu şirketinin 2023-2024 verileri kullanılmıştır. Veri seti üzerinde ön işleme ve özellik seçimi işlemleri gerçekleştirildikten sonra Rastgele Orman (Random Forest), Destek Vektör Makineleri (Support Vector Machines) ve Gradyan Artırma (Gradient Boosting) algoritmaları uygulanmıştır. Modellerin performansı tahminlerin doğruluğu olarak R2 ve gerçek verilere yakınlığı olarak MSE, RMSE, MEA ölçekleri ile değerlendirilmiştir. Elde edilen bulgular, belirli arıza türlerinde ve belirli operasyonel koşullar altında aksaklık riskinin anlamlı biçimde arttığını göstermektedir. Sonuç olarak, çalışma operasyon yönetiminde proaktif karar alma süreçlerini destekleyebilecek bir tahmin modeli önermektedir. Geliştirilen yaklaşımın, havayolu işletmelerinde maliyetlerin azaltılmasına, operasyonel verimliliğin artırılmasına ve uçuş sürekliliğinin iyileştirilmesine katkı sağlayabileceği değerlendirilmektedir.

Anahtar Kelimeler: Uçak Arızaları, Uçuş Gecikmeleri, Operasyonel Aksaklık, Makine Öğrenmesi, Random Forest, Support Vector Machine, Gradient Boosting havayolu operasyon yönetimi

Abstract

Technical failures are among the primary causes of delays in airline operations. However, not every technical failure leads to an operational delay, as some issues can be resolved promptly without affecting the scheduled departure time. In the aviation industry, a flight is generally considered delayed when it departs 15 minutes or more after its scheduled departure time. Delays exceeding two hours are typically classified as operational disruptions, requiring additional operational measures and resource allocation. The aim of this study is to predict which technical failures are likely to develop into operational disruptions by using machine learning algorithms. The research utilizes operational data obtained from an airline company covering the period from 2023 to 2024. Following data preprocessing and feature selection procedures, three machine learning algorithms—Random Forest, Support Vector Machines (SVM), and Gradient Boosting—were applied. Model performance was evaluated using the coefficient of determination (R^2) to measure predictive accuracy, while Mean Squared Error (MSE), Root Mean Squared Error (RMSE), and Mean Absolute Error (MAE) were employed to assess prediction errors and the closeness of estimates to actual values. The results indicate that the probability of operational disruption increases significantly under specific failure types and operational conditions. Based on these findings, the study proposes a predictive model capable of supporting proactive decision-making in airline operations management. The developed approach has the potential to reduce operational costs, enhance efficiency, and improve flight continuity by enabling earlier identification and management of disruption risks

Keywords: Aircraft Technical Failures, Flight Delays, Operational Disruptions, Machine Learning, Random Forest, Support Vector Machines, Gradient Boosting, Airline Operations Management

MAKİNE ÖĞRENMESİ YAKLAŞIMIYLA HAVACILIK SEKTÖRÜNDE EKİP KAYNAKLI GECİKMELERİN UÇUŞ AKSAKLIĞINA DÖNÜŞÜMÜNÜN TAHMİN EDİLMESİ

A MACHINE LEARNING APPROACH TO PREDICTING THE ESCALATION OF CREW-RELATED DELAYS INTO FLIGHT DISRUPTIONS IN THE AVIATION SECTOR

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Abstract
Maintaining operational continuity and on-time performance is a critical objective for airline operators in an increasingly complex aviation environment. Among the factors contributing to operational disruptions, crew-related delays represent a significant challenge that may escalate into broader flight irregularities under certain operational conditions. The purpose of this study is to predict the likelihood of crew-related delays evolving into flight disruptions through the application of machine learning techniques. The proposed framework incorporates variables such as crew duty time, crew replacement requirements, staffing shortages, shift workload, airport operational congestion, and historical delay records. Following data preprocessing procedures, predictive models were developed using Logistic Regression, Random Forest, and Gradient Boosting algorithms. Model performance was evaluated through accuracy, precision, recall, and F1-score metrics. The findings indicate that crew scheduling characteristics and workforce management variables play a substantial role in the occurrence of flight disruptions. Furthermore, the results demonstrate that machine learning models can effectively identify high-risk operational scenarios before disruptions materialize. The proposed approach offers practical implications for airline management by supporting proactive decision-making, improving resource allocation, and enhancing operational resilience. Consequently, the study contributes to the growing body of research on data-driven disruption management within airline operations.
Keywords: Aviation management, crew-related delays, flight disruption, machine learning, operational performance

Özet
Havacılık sektöründe uçuş operasyonlarının sürekliliği ve zamanında gerçekleştirilmesi, operasyonel verimlilik ile yolcu memnuniyetinin temel belirleyicileri arasında yer almaktadır. Uçuş gecikmelerinin önemli nedenlerinden biri olan ekip kaynaklı aksaklıklar, belirli koşullar altında daha büyük operasyonel problemlere dönüşerek uçuş iptalleri, bağlantılı uçuş kayıpları ve kaynak kullanımındaki verimsizliklere neden olabilmektedir. Bu çalışmanın amacı, ekip kaynaklı gecikmelerin uçuş aksaklığına dönüşme olasılığını makine öğrenmesi yöntemleri kullanılarak tahmin etmektir. Araştırmada ekip görev süresi, ekip değişimi, personel eksikliği, vardiya yoğunluğu, havaalanı operasyonel yoğunluğu ve geçmiş gecikme verileri gibi değişkenlerden yararlanılmıştır. Veri seti ön işleme aşamalarından geçirildikten sonra lojistik regresyon, rastgele orman ve gradyan artırma algoritmaları kullanılarak tahmin modelleri geliştirilmiştir. Modellerin performansı doğruluk, hassasiyet, geri çağırma ve F1 skoru ölçütleriyle değerlendirilmiştir. Bulgular, ekip planlaması ve personel yönetimine ilişkin değişkenlerin uçuş aksaklıklarının oluşumunda anlamlı etkiler taşıdığını göstermektedir. Çalışma sonucunda geliştirilen modelin, havayolu işletmelerine operasyonel riskleri önceden belirleme ve proaktif karar alma süreçlerinde destek sağlayabileceği değerlendirilmiştir.
Anahtar Kelimeler: Havacılık yönetimi, ekip kaynaklı gecikmeler, uçuş aksaklığı, makine öğrenmesi, operasyonel performans

KARBON ELYAF TAKVİYELİ POM KOMPOZİTLERDE MEKANİK PERFORMANS VE TRİBOLOJİK DAVRANIŞIN ARAŞTIRILMASI

MECHANICAL PERFORMANCE AND TRIBOLOGICAL BEHAVIOR OF CARBON FIBER REINFORCED POM COMPOSITES

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ÖZET

Bu çalışmada, karbon elyaf (KE) takviyesinin polioksimetilen (POM) kompozitlerin mekanik ve tribolojik performansı üzerindeki etkileri araştırılmıştır. POM polimeri ile ağırlıkça %10, %15 ve %20 KE içeren POM kompozitler ekstrüzyon ve enjeksiyon kalıplama yöntemleri kullanılarak standartlara uygun şekilde üretilmiştir. Mekanik özellikler çekme testleri ile, tribolojik davranış ise farklı yük ve kayma mesafelerinde sürtünme ve aşınma deneyleri ile değerlendirilmiştir. Çekme mukavemeti katkısız POM'da 75,17 MPa iken %20 KE katkısı ile 138,72 MPa'a ulaşarak yaklaşık %85 artış göstermiştir. Elastiklik modülü 3613 MPa'dan 18736 MPa'a yükselerek yaklaşık %419 artarken, kopma uzaması 8,61'den 2,79'a düşmüş ve artan rijitlik ile birlikte süneklik kaybı gözlenmiştir. Tribolojik sonuçlar, KE katkısının sürtünme katsayısını ve aşınma oranını azaltarak tribolojik performansını iyileştirdiğini göstermiştir. Katkısız POM'da sürtünme katsayısı 0,436–0,513 aralığında değişirken, %20 KE katkılı kompozitlerde bu değer 0,302–0,386 aralığına azalmıştır. Benzer şekilde minimum aşınma oranı katkısız POM'da $7{,}13\times10^{-14}$ mm³/Nm iken, %20 KE ilavesi ile $5{,}02\times10^{-14}$ mm³/Nm seviyesine azalmıştır. Elde edilen sonuçlar karbon elyaf takviyesinin yük taşıma kapasitesini artırarak ve temas yüzeyindeki deformasyonu sınırlandırarak POM kompozitlerin mekanik dayanımını ve tribolojik performansını önemli ölçüde geliştirdiğini göstermiştir.

Anahtar Kelimeler: Polioksimetilen (POM), Karbon elyaf, Tribolojik özellikler, Mekanik özellikler, Aşınma

ABSTRACT

This study investigates the influence of carbon fiber (CF) reinforcement on the mechanical and tribological performance of polyoxymethylene (POM) composites. Unfilled POM and POM composites containing 10, 15, and 20 wt.% CF were manufactured according to relevant standards using extrusion and injection molding processes. The results demonstrate that carbon fiber reinforcement significantly enhances the mechanical performance of the POM matrix. Tensile strength increased from 75.17 MPa for neat POM to 138.72 MPa at 20 wt.% CF loading, corresponding to an improvement of approximately 85%. Similarly, elastic modulus increased from 3613 MPa to 18,736 MPa, representing an enhancement of approximately 419%. However, elongation at break decreased from 8.61% to 2.79%, indicating reduced ductility associated with increased composite stiffness. Tribological evaluation revealed that CF reinforcement substantially improved tribological performance by reducing both friction coefficient and wear rate. The friction coefficient of unfilled POM varied between 0.436 and 0.513, whereas composites containing 20 wt.% CF exhibited lower values ranging from 0.302 to 0.386. Similarly, the minimum wear rate decreased from 7.13×10^{-14} mm³/Nm for unfilled POM to 5.02×10^{-14} mm³/Nm with 20 wt.% CF reinforcement. These improvements are primarily attributed to enhanced load transfer capability and reduced surface deformation provided by the carbon fiber network. The findings indicate that carbon fiber reinforcement provides an effective strategy for simultaneously improving the mechanical strength and tribological performance of POM-based engineering composites.

Keywords: Polyoxymethylene (POM), Carbon fiber, Tribological properties, Mechanical properties, Wear

THE PRICE OF BEING SMART: HOW AI THREATENS OUR PRIVACY

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Abstract
Artificial intelligence has become an essential part of daily life through search engines, recommendation systems, chatbots, virtual assistants, social media platforms, translation tools, navigation applications, and other personalized digital services. As these systems become smarter and more useful, they increasingly depend on the collection, processing, and analysis of user data. This situation creates an important privacy problem because the same data that makes artificial intelligence more accurate, personalized, and convenient may also expose users to risks such as tracking, profiling, third-party data sharing, long-term data storage, and unclear data practices. Therefore, the growing smartness of artificial intelligence raises the question of whether users gain technological convenience at the cost of losing control over their personal information.
The aim of this study is to examine users' perception of the threats posed by artificial intelligence systems to user privacy and data confidentiality, and to understand their awareness, concerns, and behaviors regarding data privacy in AI-based technologies. The study focuses especially on whether users know that AI systems collect personal data, whether they read privacy policies, whether they take privacy-protective measures, and how they feel about issues such as device tracking, location tracking, indefinite data storage, and third-party data sharing.
Data were collected through two main methods: an online survey and document analysis. The online survey was prepared using Google Forms and completed by 101 participants from different age groups, most of whom were young adults. The survey included questions about participants' frequency of AI use, awareness of AI data collection, privacy policy reading habits, privacy concerns, and protective behaviours such as using VPNs, ad blockers, or restricting application permissions. In addition to the survey, AI privacy-related documents were examined to evaluate how topics such as data collection, data use, storage duration, user consent, transparency, third-party sharing, and user control are presented to users. The survey data were analysed using descriptive statistics, while the document analysis was interpreted thematically.
The findings show that although most participants are aware that artificial intelligence technologies collect personal data, this awareness does not always lead to protective behaviour. A significant number

of participants rarely or never read privacy policies, and more than half do not take specific privacy-protective measures. However, participants still expressed strong concerns about device and location tracking, third-party data sharing, indefinite data storage, and lack of transparency. These findings reveal a clear gap between privacy awareness and actual user behaviour. The study concludes that AI privacy risks cannot be solved only by expecting users to protect themselves. Instead, AI companies should provide clearer privacy policies, collect only necessary data, improve transparency, and give users more practical control over their personal information. The study also highlights the need for stronger digital privacy education, especially for young users who frequently interact with AI technologies.

SOMUT MATERYAL VE GEOGEBRA AR PROGRAMI KULLANILARAK ÜÇ BOYUTLU CİSİMLERİN FARKLI YÖNLERDEN GÖRÜNÜMLERİNİN ÇİZİMİNDE ÖĞRENCİ DENEYİMLERİ

STUDENT EXPERIENCES IN DRAWING TWO-DIMENSIONAL VIEWS OF THREE-DIMENSIONAL OBJECTS FROM DIFFERENT PERSPECTIVES USING PHYSICAL MATERIALS AND GEOGEBRA AR

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Abstract
The aim of this research is to investigate students' experiences in drawing two-dimensional views of three-dimensional objects from various perspectives and constructing three-dimensional structures based on provided two-dimensional views employing physical materials and the GeoGebra AR. The study was conducted using a qualitative research framework as a case study. The participant group comprised seven seventh-grade students attending a middle school in Kayseri, Türkiye. Students were given tasks to complete using GeoGebra AR and physical materials during the data collection phase. Subsequently, semi-structured interviews were conducted with the participants. The data collected were analyzed in terms of students' performance and perspectives. The findings showed that students struggled to use physical materials, especially in recognizing right- and left-hand views, comparing views from multiple perspectives simultaneously, and building three-dimensional structures from provided views. Conversely, the GeoGebra AR activities showed an increase in the number of right answers. Specifically, in physical material activity, only two students correctly answered the third task, which required building a three-dimensional structure using top-view and right-side information, while all students correctly completed the augmented reality activity. In a similar vein, the number of students who correctly answered the fifth task—which required building a structure based on viewpoints from various angles—rose from two to six. The results of the interviews also showed that students thought GeoGebra AR was better at identifying directions, looking at structures from various perspectives, seeing two-dimensional projections clearly, and realizing their errors. Additionally, students reported that the application was interesting, clear, and helpful to their learning. Therefore, it can be said that the GeoGebra AR app helps students understand how three-dimensional objects appear from various perspectives and build structures based on these perspectives. As a result, augmented reality applications could be useful supplementary and alternative teaching resources for geometry.
Keywords: Mathematics education, three-dimensional objects, two-dimensional views, physical materials, augmented reality, GeoGebra AR.

Özet
Bu çalışmanın amacı, somut materyal ve GeoGebra AR programı kullanılarak öğrencilerin üç boyutlu cisimlerin farklı yönlerden iki boyutlu görünümlerini çizme ve verilen iki boyutlu görünümlerden hareketle üç boyutlu yapılar oluşturma sürecine ilişkin deneyimlerini incelemektir. Araştırma nitel araştırma yaklaşımı çerçevesinde durum çalışması deseninde yürütülmüştür. Çalışma grubunu, Kayseri ilindeki bir ortaokulda öğrenim gören yedi 7. sınıf öğrencisi oluşturmaktadır.

Veri toplama sürecinde öğrencilerden somut materyal ve GeoGebra AR kullanarak araştırmacılar tarafından hazırlanan etkinlikleri tamamlamaları istenmiş, uygulama sonrasında yarı yapılandırılmış görüşmeler gerçekleştirilmiştir. Elde edilen veriler öğrenci performansları ve görüşleri doğrultusunda analiz edilmiştir. Araştırma bulguları, öğrencilerin somut materyal kullanırken özellikle sağdan ve soldan görünüşleri belirleme, farklı yönlerden elde edilen görünümleri birlikte değerlendirme ve verilen görünümlerden hareketle üç boyutlu yapı oluşturma süreçlerinde güçlük yaşadıklarını göstermektedir. Diğer yandan, GeoGebra AR uygulamalarında öğrencilerin doğru cevap sayılarında artış olduğu belirlenmiştir. Özellikle sağdan ve üstten görünüm bilgileri kullanılarak üç boyutlu yapı oluşturulmasını gerektiren üçüncü soruda somut materyal uygulamasında iki öğrenci doğru cevap verirken, artırılmış gerçeklik uygulamasında tüm öğrenciler doğru sonuca ulaşmıştır. Benzer şekilde, farklı yönlerden verilen görünümlerden hareketle yapı oluşturmayı gerektiren beşinci soruda doğru cevap sayısı ikiden altıya yükselmiştir. Görüşme bulguları, öğrencilerin GeoGebra AR uygulamasını yönleri belirleme, farklı açılardan inceleme, iki boyutlu izdüşümlerini çok net görebilme ve hatalarını fark etme açısından daha kullanışlı bulduklarını ortaya koymuştur. Öğrenciler ayrıca uygulamanın dikkat çekici, anlaşılır ve öğrenme sürecini destekleyici olduğunu belirtmişlerdir. Sonuç olarak, GeoGebra AR uygulamasının öğrencilerin üç boyutlu cisimlerin farklı yönlerden görünümlerini yorumlama ve bu görünümlerden hareketle yapı oluşturma süreçlerini desteklediği söylenebilir. Bu doğrultuda artırılmış gerçeklik uygulamalarının geometri öğretiminde alternatif ve tamamlayıcı bir öğretim aracı olarak kullanılmasının yararlı olabileceği düşünülmektedir.

Anahtar Kelimeler : Matematik eğitimi, üç boyutlu cisimler, iki boyutlu görünümler, somut materyal, artırılmış gerçeklik, GeoGebra AR.

YAZILIM PROJELERİNDE TEKNİK BORCUN TEST SÜREÇLERİ VE TESLİM PERFORMANSI ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ

INVESTIGATING THE IMPACT OF TECHNICAL DEBT ON TESTING PROCESSES AND DELIVERY PERFORMANCE IN SOFTWARE PROJECTS

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Abstract
Technical debt refers to technical decisions made to achieve short-term gains during software development that may increase maintenance costs and negatively affect software quality in the long term. Existing studies have investigated technical debt from code, design, architecture, testing and requirements perspectives. However, most research has focused on static code analysis and code quality indicators while the relationship between technical debt, software testing processes and delivery performance has received limited attention.
This study aims to empirically investigate the relationship between technical debt indicators, testing metrics and software delivery performance. The research utilizes open-source software project datasets containing technical debt, testing and project management information. Technical debt levels are assessed using SonarQube-based static analysis results, code smells, maintainability indicators and refactoring data. Testing processes are evaluated through metrics such as test coverage, passed and failed test counts and test failure rates. Delivery performance is measured using issue resolution time, pull request merge duration and release frequency metrics.
The collected data is analyzed using correlation and regression techniques to identify the impact of technical debt on testing processes and delivery performance. The expected contribution of the study is to provide empirical evidence regarding the role of technical debt in software quality and project delivery outcomes while supporting decision-making mechanisms for early technical debt detection and improved project performance.
Keywords: Technical debt, Software testing, Test coverage, Software quality, Delivery performance

Özet
Teknik borç, yazılım geliştirme süreçlerinde kısa vadeli kazanımlar elde etmek amacıyla alınan teknik kararların uzun vadede bakım maliyetlerini artırması ve yazılım kalitesini olumsuz etkilemesi olarak tanımlanmaktadır. Literatürde teknik borç; kod, tasarım, mimari, test ve gereksinim boyutlarında incelenmiş olup çalışmaların büyük bölümü statik kod analizi ve kod kalitesi göstergelerine odaklanmıştır. Buna karşın teknik borç ile test süreçleri ve proje teslim performansı arasındaki ilişkinin birlikte değerlendirildiği çalışmaların sınırlı olduğu görülmektedir.
Bu çalışmanın amacı, teknik borç göstergeleri ile test süreçlerine ait metrikler ve yazılım teslim performansı arasındaki ilişkinin ampirik olarak incelenmesidir. Çalışmada açık kaynaklı yazılım projelerinden elde edilen teknik borç, test ve proje yönetim verileri birlikte değerlendirilecektir. Teknik borç seviyesinin belirlenmesinde SonarQube tabanlı statik analiz sonuçları, kod kokuları, bakım yapılabilirlik göstergeleri ve yeniden düzenleme verileri kullanılacaktır. Test süreçlerinin değerlendirilmesinde test kapsamı, başarılı ve başarısız test sayıları ile test başarısızlık oranları dikkate alınacaktır. Teslim performansının ölçülmesinde ise issue çözüm süresi, pull request birleştirme süresi ve sürüm yayın sıklığı gibi metriklerden yararlanılacaktır.
Araştırma kapsamında elde edilen veriler korelasyon ve regresyon analizleri ile incelenecek, teknik borcun test süreçleri ve teslim performansı üzerindeki etkisi nicel olarak değerlendirilecektir.

Çalışmanın, teknik borcun erken tespiti ve yazılım projelerinde teslim performansının iyileştirilmesine yönelik karar destek mekanizmalarına katkı sağlaması beklenmektedir.

Anahtar kelimeler: Teknik Borç, Yazılım Testi, Test Coverage, Yazılım Kalitesi, Teslim Performansı

DİJİTAL ÇAĞDA TOPLUMSAL GERİLEME: SOSYAL MEDYA ALGORİTMALARININ BENLİĞİN FARKLILAŞMASI ÜZERİNDEKİ ETKİLERİ

SOCIETAL REGRESSION IN THE DIGITAL AGE: THE EFFECTS OF SOCIAL MEDIA ALGORITHMS ON THE DIFFERENTIATION OF SELF

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Abstract
In Murray Bowen's Family Systems Theory, "differentiation of self" is the individual's ability to separate emotion and logic. According to Bowen, societies under increasing stress, just like families, lose their ability to think logically and begin to act entirely emotionally and reactively. Bowen defines this situation as "Societal Regression." This study aims to conceptually examine Bowen's theory in the context of today's social media algorithms. Today, social media algorithms create "filter bubbles" and echo chambers by bringing people together only with ideas similar to their own views. The constant bombardment of information and the feeling of being watched in the digital environment create chronic anxiety in society. In addition, because algorithms often reward anger and sudden reactions, people's capacity to approach events objectively (differentiation of self) is gradually weakening. Instead of thinking rationally, people act on their emotions and conform to "herd mentality." This picture, which Bowen explains as the loss of individuality and people becoming emotionally "fused" (fusion), is clearly seen on social media today. In conclusion, this review study reveals how social media algorithms accelerate societal regression by feeding instant emotional reactions and offers psychological counselors a new perspective to cope with the problems brought by the digital age.
Keywords: Bowen Family Systems Theory, Societal Regression, Differentiation of Self, Social Media, Filter Bubbles.

Özet
Murray Bowen'ın Aile Sistemleri Kuramı'nda "benliğin farklılaşması", bireyin duygu ve mantığını birbirinden ayırabilme becerisidir. Bowen'a göre artan stres altındaki toplumlar da tıpkı aileler gibi mantıklı düşünme yetilerini kaybederek tamamen duygusal ve tepkisel (reaktif) davranmaya başlarlar. Bowen bu durumu "Toplumsal Gerileme" olarak tanımlar. Bu çalışma, Bowen'ın kuramını günümüz sosyal medya algoritmaları bağlamında kavramsal olarak incelemeyi amaçlamaktadır. Günümüzde sosyal medya algoritmaları, insanları yalnızca kendi görüşlerine benzeyen fikirlerle bir araya getirerek "filtre balonları" ve yankı fanusları oluşturmaktadır. Dijital ortamdaki sürekli bilgi bombardımanı ve gözetlenme hissi, toplumda kronik bir kaygı yaratmaktadır. Ayrıca algoritmalar genellikle öfkeyi ve ani tepkileri ödüllendirdiği için, insanların olaylara objektif yaklaşma (benliğini farklılaştırma) kapasitesi giderek zayıflamaktadır. İnsanlar rasyonel düşünmek yerine duygularıyla hareket ederek "sürü psikolojisine" uymaktadır. Bowen'ın bireyselliğin kaybolması ve insanların duygusal olarak "iç içe geçmesi" (fusion) şeklinde açıkladığı bu tablo, günümüzde sosyal medyada açıkça görülmektedir. Sonuç olarak bu derleme çalışması, sosyal medya algoritmalarının anlık duygusal tepkileri besleyerek toplumsal gerilemeyi nasıl hızlandırdığını ortaya koymakta ve psikolojik danışmanlara dijital çağın getirdiği sorunlarla başa çıkmak için yeni bir bakış açısı sunmaktadır.
Anahtar kelimeler: Bowen Aile Sistemleri Kuramı, Toplumsal Gerileme, Benliğin Farklılaşması, Sosyal Medya, Filtre Balonları.

ÇİFT VE AİLE TERAPİLERİNDE SANAT UYGULAMALARI: SİSTEMATİK BİR DERLEME

ART-BASED PRACTICES IN COUPLE AND FAMILY THERAPY: A SYSTEMATIC REVIEW

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Abstract
Couple and family therapy, a widespread practice in today's world, can be conducted by integrating the therapeutic context of art with the family environment. This study aims to contribute to future research by systematically framing existing academic studies, interventions, and expert opinions from both national and international literature regarding art-based practices in the field of couple and family therapy within an evidence-based framework. Accordingly, the study was conducted in accordance with the PRISMA (2020) methodology. The study systematically reviewed (1) current literature published between 2021 and 2026, (2) focusing on art interventions and expert opinions within the context of couple and family therapy, also (3) studies in English and Turkish. Outdated studies, art therapy applications conducted solely on an individual basis outside the targeted sample, and non-intervention studies such as systematic reviews and book reviews were excluded. By examining various international and national databases, the study ultimately reached 15 studies. The current international literature indicates that art interventions within the family system, as well as in couple and dyadic relationships (parent-child), provide opportunities for both externalization and concretization by establishing a nonverbal channel of communication. It has been observed that art's reflective function creates a shared space within family system relationships, allowing unexpressed, unseen, or repressed emotions and thoughts to surface and find a safe place to be acknowledged. It has been found that art interventions establish a structure that contributes to the family's well-being and resilience. However, empirical studies in this area are quite limited in the national literature. These findings highlight the need to diversify research in the Turkish literature.
Keywords: Family Art Therapy, Art Therapy, Couple Therapy, Parent-Child Relationship, PRISMA

Özet
Günümüzde yaygın bir pratik olan çift ve aile terapileri, sanatın terapötik bağlamını aile ortamıyla buluşturarak icra edilebilmektedir. Bu çalışma, çift ve aile terapileri düzleminde yapılmış olan sanat temelli uygulamalara yönelik hem ulusal hem de uluslararası literatürdeki mevcut akademik çalışmaları, müdahaleleri ve uzman görüşlerini kanıta dayalı bir yapıda çerçevelendirerek gelecekteki araştırmalara katkıda bulunmayı hedeflemektedir. Bu doğrultuda çalışma, PRISMA (2020) metodolojisine uygun şekilde yürütülmüştür. Çalışmada; (1) 2021-2026 yılları arasında yayınlanmış güncel literatürdeki (2) çift ve aile terapilerini kapsayarak sanat müdahalelerini ve uzman görüşlerini konu edinmiş (3) İngilizce ve Türkçe çalışmalar sistematik olarak incelenmiştir. Güncel olmayan ve hedeflenen örneklem dışındaki salt birey bazında yapılmış sanat terapisi uygulamaları ile sistematik derlemeler, kitap incelemeleri gibi müdahale içermeyen çalışmalar dahil edilmemiştir. Çalışmada çeşitli uluslararası ve ulusal veri tabanları incelenerek nihai olarak *15* çalışmaya erişilmiştir. Güncel uluslararası literatür; aile sistemi, çift ve diyadik (ikili) ilişkiler (ebeveyn-çocuk) kapsamındaki sanat müdahalelerinin, sözel olmayan bir iletişim kanalı oluşturarak hem bir dışsallaştırma hem de somutlaştırma imkânı tanıdığını göstermektedir. Sanatın yansıtıcı işlevinin aile sistemindeki ilişkilerde ortak bir paylaşım alanı oluşturduğunu ve bu doğrultuda ifade edilemeyen, görülmeyen veya bastırılan duygu ve düşüncelerin yüzeye çıkarak güvenli bir zeminde kendilerine yer bulduğu görülmüştür. Temelde ailenin iyi oluşunu ve dayanıklılığını destekleyerek katkıda bulunan bir yapı ortaya koyduğu saptanmıştır. Ancak ulusal literatürde bu kapsamdaki ampirik çalışmalar oldukça sınırlıdır.

Bu bağlamdaki bulgular Türkiye literatüründeki çalışmaların çeşitlendirilmesi hususunu ortaya koymaktadır.

Anahtar Kelimeler: Aile Sanat Terapisi, Sanat Terapisi, Çift Terapisi, Ebeveyn-Çocuk İlişkisi, PRISMA

DEĞER NETLİĞİ ÖLÇEĞİ'NİN TÜRKÇEYE UYARLANMASI: GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

ADAPTATION OF THE VALUE CLARITY QUESTIONNAIRE INTO TURKISH: A VALIDITY AND RELIABILITY STUDY

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Abstract
Values are among the fundamental psychological constructs that guide individuals' lives, shape their behaviors, and provide meaning and direction. In recent years, particularly within the framework of Acceptance and Commitment Therapy (ACT), increasing attention has been given to the role of values in psychological well-being and values-based action. However, while numerous instruments assess value orientations and value-consistent behaviors, relatively few focus on the extent to which individuals can clearly identify and articulate their personal values. In this context, value clarity refers to individuals' awareness of the kind of person they wish to be and their ability to define their personal values in a clear and coherent manner. The present study aimed to adapt the Value Clarity Questionnaire (VCQ), developed by Lyons et al. (2023), into Turkish and to examine its psychometric properties. The study sample consisted of 253 adults aged 18 years and older. The adaptation process included translation, back-translation, expert review, panel evaluation, and pilot testing procedures. Construct validity was examined through Confirmatory Factor Analysis (CFA), and reliability was assessed using Cronbach's alpha coefficient. Criterion-related validity was evaluated using the Valuing Questionnaire and the Engaged Living Scale. During the data screening process, missing data and multivariate outliers were examined. Seven participants identified as multivariate outliers through Mahalanobis distance analysis were removed from the dataset, and the final analyses were conducted with 239 participants. CFA results supported the original one-factor structure of the scale in the Turkish sample. Model fit indices indicated an acceptable fit to the data ($\chi^2(14) = 12.63$, CFI = .971, TLI = .957, RMSEA = .085, SRMR = .034). Standardized factor loadings ranged from .636 to .848. The internal consistency coefficient of the scale was found to be .86. Criterion-related validity analyses revealed a strong positive correlation between the Value Clarity Questionnaire and the Valuing Questionnaire ($r = .829$, $p < .001$), and a moderate positive correlation between the Value Clarity Questionnaire and the Engaged Living Scale ($r = .526$, $p < .001$). The findings indicate that the Turkish version of the Value Clarity Questionnaire is a valid and reliable instrument for assessing value clarity among Turkish adults. The scale may serve as a useful tool for future research examining values, psychological flexibility, and values-based behavior.
Keywords: value clarity, values, scale adaptation, validity, reliability

Özet
Değerler, bireyin yaşamını yönlendiren, davranışlarına rehberlik eden ve yaşamına anlam kazandıran temel psikolojik yapılardan biridir. Son yıllarda özellikle Kabul ve Kararlılık Terapisi (Acceptance and Commitment Therapy; ACT) kapsamında değerlerin psikolojik iyi oluş ve değer temelli davranışlar üzerindeki rolü giderek daha fazla önem kazanmaktadır.

Bununla birlikte bireylerin sahip oldukları değerlerden ziyade, bu değerleri ne ölçüde açık ve net biçimde tanımlayabildiklerini değerlendiren ölçme araçlarının sınırlı olduğu görülmektedir. Bu bağlamda değer açıklığı, bireyin nasıl bir insan olmak istediğine ilişkin farkındalığını ve sahip olduğu değerleri net biçimde tanımlayabilme düzeyini ifade eden önemli bir yapı olarak değerlendirilmektedir. Bu araştırmanın amacı, Lyons ve arkadaşları (2023) tarafından geliştirilen Değer Netliği Ölçeği'nin (Value Clarity Questionnaire; VCQ) Türkçeye uyarlanması ve psikometrik özelliklerinin incelenmesidir. Araştırmanın çalışma grubunu 18 yaş ve üzerindeki 253 yetişkin oluşturmaktadır. Ölçeğin uyarlama sürecinde çeviri, geri çeviri, uzman görüşü, panel uygulaması ve pilot uygulama aşamaları gerçekleştirilmiştir. Yapı geçerliğini incelemek amacıyla Doğrulayıcı Faktör Analizi (DFA), güvenirliği belirlemek amacıyla Cronbach alfa iç tutarlılık katsayısı hesaplanmıştır. Ölçüt bağıntılı geçerlik kapsamında Değer Verme Ölçeği ve Değerlere Bağlı Yaşam Ölçeği kullanılmıştır. Veri temizleme sürecinde eksik veriler ve çok değişkenli uç değerler incelenmiş, Mahalanobis uzaklığı analizine göre belirlenen yedi katılımcı veri setinden çıkarılmış ve analizler 239 katılımcı üzerinden yürütülmüştür. DFA sonuçları ölçeğin tek faktörlü yapısının Türk örnekleminde doğrulandığını göstermiştir. Model uyum indeksleri $\chi^2(14)=12.63$, CFI=.971, TLI=.957, RMSEA=.085 ve SRMR=.034 olarak bulunmuştur. Standardize faktör yükleri .636 ile .848 arasında değişmektedir. Ölçeğin Cronbach alfa iç tutarlılık katsayısı .86 olarak hesaplanmıştır. Ölçüt bağıntılı geçerlik analizlerinde Değer Netliği Ölçeği ile Değer Verme Ölçeği arasında yüksek düzeyde pozitif ilişki ($r=.829$, $p<.001$), Değerlere Bağlı Yaşam Ölçeği arasında ise orta düzeyde pozitif ilişki ($r=.526$, $p<.001$) bulunmuştur. Elde edilen bulgular, Değer Netliği Ölçeği'nin Türkçe formunun geçerli ve güvenilir bir ölçme aracı olduğunu göstermektedir. Ölçeğin, değerler, psikolojik esneklik ve değer temelli davranışlarla ilgili gelecekte gerçekleştirilecek araştırmalarda kullanılabilecek işlevsel bir ölçme aracı olduğu düşünülmektedir.
Anahtar Kelimeler: değer açıklığı, değerler, ölçek uyarlama, geçerlik, güvenirlik

DİJİTAL BAĞIMLILIKTA AVERSİF ŞARTLANMA VE DAVRANIŞSAL SÖNÜMLENME

AVERSIVE CONDITIONING AND BEHAVIORAL EXTINCTION IN DIGITAL ADDICTION

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Abstract
The proliferation and uncontrollable progression of social media and digital games have become the greatest public health problem of our time. Although enormous amounts of time are unknowingly spent on these platforms, no permanent solution method has been developed. Currently, there are restrictive applications that limit screen time and block access to the app until the next day. Rather than being a solution, these methods merely keep the user away from the application for a temporary period. Due to this weakness of these methods in failing to create a permanent solution, the addiction persists.However, we aim for a permanent solution with the aversive conditioning and behavioral extinction we present in this study. The study will be designed essentially by taking the diphenoxylate-atropine and alcohol-disulfiram relationships used in medicine as role models, considering the combined use of pleasure-inducing elements with aversive factors. In our project, compared to current applications, we offer as a solution the user gaining the habit of exiting addictive applications by their own willpower. As a method, we anticipate breaking down the pleasure-inducing nature of addictive applications and exerting an effect through the dopaminergic reward cycle. Thanks to our application, which activates while using addictive applications, the goal is for the individual to voluntarily exit the addictive application and to prevent them from entering the app with their former pleasurable enthusiasm, through screen freezing and stuttering, network connection slowdowns, visual comfort deterioration and imbalance, and physical deterrent elements. The purpose of this study is to put an end to digital addiction, which poses a risk to public health, and to act as a role model by demonstrating the power of aversive conditioning and behavioral extinction to other disciplines.
Keywords: Addiction, Technology, Social Media, Screen Time, Aversive

Özet
Sosyal medya ve dijital oyunların yaygınlaşması ve kontrol edilemez ilerleyişi günümüzün en büyük halk sağlığı problemi olmuştur. Bu mecralarda farkında olunmaksızın muazzam süreler harcanmasına rağmen herhangi bir kalıcı çözüm yöntemi geliştirilememiştir. Güncel olarak ekran süresini kısıtlayan ve ertesi güne kadar uygulamayı girişi engelleyen yasaklayıcı uygulamalar mevcuttur. Bu yöntemler bir çözüm olmaktan çok geçici bir süreliğine uygulamadan uzaklaştırmaktadır. Yöntemlerin kalıcı çözüm oluşturmayan bu zaafiyeti nedeniyle bağımlılık halen devam etmektedir. Ancak bu çalışmada sunduğumuz aversif şartlanma ve davranışsal sönümleme ile kalıcı çözüm hedefliyoruz. Çalışmada esasen tıpta kullanılan difenoksilat-atropin ve alkol-disülfiram ilişkilerinden rol model alarak keyif vericilerin itici unsurlarla birlikte kullanımının etkileri göz önünde bulundurarak tasarlanacaktır. Projemizde güncel uygulamalara göre kullanıcının kendi iradesiyle bağımlılık yapan uygulamalardan çıkma alışkanlığı kazanmasını çözüm olarak sunuyoruz. Yöntem olarak bağımlılık yapan uygulamaların keyif verici bir unsur olmasını yıkıp dopaminerjik ödül döngüsü üzerinden etki göstermesi öngörüyoruz. Bağımlılık yapan uygulamaları kullanırken devreye giren uygulamamız sayesinde ekranda donma-takılma, ağ bağlantısında yavaşlama, görsel konforda bozulma-dengesizlik ve fiziksel caydırıcı unsurlarıyla bireyi bağımlılık yapıcı uygulamadan kendi iradesiyle çıkış yapması ve eski keyif verici hevesle uygulamaya girişi engellenmesi hedeflenmektedir. Bu çalışmanın amacı toplum sağlığı açısından risk oluşturan dijital bağımlılığa son vermek ve aversif şartlanma ve davranışsal sönümlemenin gücünü diğer disiplinlere göstererek rol model olmasını sağlamaktır.
Anahtar kelimeler: Bağımlılık, Teknoloji, Sosyal Medya, Ekran Süresi, Aversif

PATIENT AUTONOMY AND SELF-DETERMINATION

HASTA ÖZERKLİĞİ VE OTONOMİ

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Abstract
The right to life is the most fundamental right of human rights. It forms the basis of almost all human rights. Therefore, the fact that the right to life is respected is our most basic priority. Who can determine the value of a good life? We can reduce the value of our life by damaging it as much as we value it or by damaging our vital value with our actions. Dworkin, one contemporary thinker, emphasizes autonomy, the right to autonomy and human dignity within the framework of individual freedom in relation to the termination of life and says that it is necessary to deal with the autonomy of the patient, his interests, and finally the sanctity of his life, and how best to respect it. According to Dworkin, how life ends will depend on the person's character, personal interests and interests, lifestyle, and how they look at and evaluate life with their own sense of integrity.The feelings of conscious patients about their own life integrity and consistency also affect their views on whether it is in their interests to live. For some, living an unconscious life in the last stages of life is unbearable in the integrity of their own lives. Many people see living under these conditions as dishonourable. Others, on the other hand, want to continue living as long as they can read and understand what they read, no matter how bad their health conditions are. For some, staying alive is a requirement of their beliefs, even if they live unconsciously and in need of others.Everyone has different opinions about what a good life is. A good life is a life in which individuals can express their personal integrity by their own decisions. A good life includes a good death. Doesn't a good death indicate the time of death?State and state laws, with their social order and legal structure, force people to die in conflict with their own lives while trying to impose a uniform life and death, is an act of hateful violence. The ambivalent attitude of the social order in patient care is extremely hypocritical. It is extremely tragic that decisions to end life, especially in the sick and elderly, are left to relatives or relatives who are considered to know the best interests of the patient, citing the inadequacy of health services and resources.If a person finds it very bad to be tied to the machine for years and just stay biologically alive, if he prepares instructions and wills in advance to avoid it, is it not more respect for that person's life, more respect for his choices, that people try to carry out these decisions with respect?Decisions about one's own life should be one's own choice and responsibility. Autonomy is the right of a person to make the decisions that determine him/herself, his/her personality and life. These decisions should be made by one's own choice, rather than by society or law. The right to honour includes the right not to tolerate dishonour. Does not a person's insistence that a decision contrary to his dignity should not be allowed to be applied to him also reveal his own moral structure?
Keywords: Patient Autonomy, Right to Life, Autonomy, Good Life, Right to Dignity.

Özet
Yaşama hakkı, insan haklarının en temel hakkıdır. Neredeyse bütün insan haklarının temelini oluşturur. Bu nedenle yaşama hakkına saygı duyulması gerçeği, en temel önceliğimizdir. iyi bir yaşamın değerini kim belirleyebilir? Yaşamımıza, yaptıklarımızla biz değer kadar ya da yaşamsal değerimize zarar vererek, onun değerini azaltabiliriz. Çağdaş düşünürlerden Dworkin, yaşamın sona erdirilmesiyle ilgili olarak, bireysel özgürlük çerçevesinde özerklik, otonomi hakkı ve insan onurunu ön plana çıkartmakta ve hastanın özerkliğine, onun menfaatlerine, son olarak da onun yaşamının kutsallığına, en iyi nasıl

saygı gösterileceğiyle ilgilenmek gerektiğini söylemektedir. Dworkin'e göre, yaşamın ne şekilde sona erdirileceği, kişinin karakterine, kişisel ilgi ve çıkarlarına, yaşam biçimine, kendi bütünlük duygusuyla yaşama nasıl bakıp, nasıl değerlendiğine bağlı olacaktır.Bilinçleri açık hastaların, kendi yaşam bütünlüğü ve tutarlılığıyla ilgili hisleri, yaşamanın çıkarlarına uygun olup olmadığıyla ilgili görüşlerini de etkilemektedir. Kimileri için yaşamın son dönemlerinde bilinçsizce bir yaşam sürmek, kendi yaşamlarının bütünlüğü içinde katlanamaz bir durumdur. Pek çok kişi, bu koşullar altında yaşamayı, onursuzluk olarak görmektedir. Bazıları ise, sağlık koşulları ne kadar kötü olursa olsun, okuyabildikleri, okuduklarını anlayabildikleri sürece yaşamaya devam etmek istemektedirler. Kimileri içinde, bilinçsiz ve başkalarına muhtaç yaşasalar bile, canlı kalmak, inançlarının bir gereğidir. İyi bir yaşamın ne olduğu konusunda, herkesin farklı görüşleri vardır. İyi bir yaşam, bireylerin kişisel bütünlüklerini, kendi kararlarıyla ifade edebildikleri yaşamdır. İyi yaşam, iyi ölümü de kapsar. İyi bir ölüm, ölme zamanına da işaret etmez mi? Toplumsal düzen ve hukuksal yapısıyla devlet ve devlet yasaları, tek tip bir yaşam ve ölümü kabul ettirmeye çalışırken, insanı kendi yaşamıyla çatışır şekilde ölmeye zorlamak, nefret uyandırıcı bir şiddet eylemidir. Toplumsal düzenin, hasta bakımındaki ikircikli tavrı, son derece ikiyüzlüdür. Sağlık hizmetleri ve kaynakların yetersizliği gerekçe gösterilerek, özellikle hasta ve yaşlılarda, yaşamın sonlandırılması kararlarının, hastanın menfaatlerini en iyi bildiği kabul edilen akrabalara veya yakınlara bırakılarak, toplumca görmezden gelinmeye çalışılması, son derece trajiktir. Kişi, yıllarca makineye bağlanmayı ve sadece biyolojik olarak canlı kalmayı, çok kötü buluyorsa, bundan kaçınmak için, önceden talimatlar ve vasiyetler hazırlıyorsa, insanların da bu kararlara saygı duyarak yerine getirmeye çalışması, o kişinin yaşamına, seçimlerine daha fazla saygı duymak değil midir? Kişinin kendi yaşamıyla ilgili kararlar, kendi seçimi ve kendi sorumluluğu olmalıdır. Otonomi, kişinin kendisini, kişiliğini, yaşamını belirleyen kararları, kendisinin alma hakkıdır. Bu kararlar, toplum veya yasalar yerine, kişinin kendi seçimiyle yapılmalıdır. Onur hakkı, onursuzluğa katlanmama hakkını da içermektedir. Kişinin, onuruna aykırı bir kararın, kendisine uygulanmasına izin verilmemekte ısrar etmesi, kendi ahlaki yapısını da ortaya koymaz mı?

Anahtar Sözcükler: Hasta Özerkliği, Yaşama hakkı, Otonomi, İyi Yaşam, Onur Hakkı.

AN ESSAY ON THE INTRİNSİC VALUE OF HUMAN LİFE AND HUMAN DİGNİTY: WHO CAN DETERMİNE THE VALUE OF LİFE?

YAŞAMIN İÇKİN DEĞERİ VE İNSAN ONURU ÜZERİNE BİR DENEME: YAŞAMIN DEĞERİNİ KİM BELİRLEYEBİLİR?

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Abstract
The value of human life has long been one of the central issues in legal philosophy, ethics, and human rights theory. This study seeks to address the fundamental question: Who can determine the value of human life? Is human life merely an individual interest subject to personal autonomy, or does it constitute an objective value that should be protected as the shared moral heritage of humanity? The study examines this question through the concepts of the right to life, human dignity, and individual autonomy. Although modern legal systems generally recognize an individual's broad freedom to make decisions concerning their own body, they also acknowledge that this freedom is not absolute when it comes to the right to life. The legal and ethical controversies surrounding suicide, euthanasia, and other forms of life-ending interventions reveal the limits of individual authority over one's own life. This suggests that human life is not only an individual right but also a social and universal value deserving of legal protection. The study is primarily based on Ronald Dworkin's theory that human life possesses intrinsic value. According to Dworkin, the value of human life cannot be reduced to an individual's subjective preferences or choices; rather, it embodies an objective moral value that commands respect. Consequently, the deliberate termination of a human life represents not only an individual loss but also a diminution of the value that humanity collectively attributes to human life. The paper further argues that the traditional concept of the sanctity of life has evolved within secular legal systems into the modern principle of the inviolability of human life. From this perspective, the value of human life transcends individual will and emerges as a common legal and ethical value grounded in human dignity and the universal principles of human rights.
Keywords: Right to life; intrinsic value of life; human dignity; inviolability of life; individual autonomy.

Özet
İnsan yaşamının değeri, hukuk felsefesi, etik ve insan hakları kuramlarının en temel tartışma alanlarından birini oluşturur. Bu çalışma, "Yaşamın değerini kim belirleyebilir?" sorusuna cevap aramaktadır. İnsan yaşamı yalnızca bireyin kişisel tasarrufuna bırakılabilecek özel bir menfaat midir, yoksa toplumun ve insanlığın ortak ahlaki mirası olarak korunması gereken nesnel bir değer midir? Çalışmamız, bu soruları, yaşam hakkı, insan onuru ve bireysel özerklik kavramları çerçevesinde değerlendirilmeye odaklanmıştır. Modern hukuk sistemleri bireyin kendi bedeni üzerinde geniş ölçüde karar verme özgürlüğünü tanımakla birlikte, yaşam hakkının mutlak olmadığını kabul edebilmektedirler. İntiharın hukuki ve etik açıdan tartışmalı niteliği, ötanazi uygulamaları ve yaşamı sonlandırmaya yönelik müdahaleler, bireyin yaşamı üzerindeki tasarruf yetkisinin sınırlarını görünür kılmaktadır. Bu durum, yaşamın yalnızca bireysel bir hak değil, aynı zamanda toplumsal ve evrensel bir değer olarak kabul edildiğini de göstermektedir. Çalışmada özellikle Ronald Dworkin'in insan yaşamının **içkin** değer taşıdığına ilişkin yaklaşımı esas alınmaktadır. Dworkin'e göre insan yaşamı, yalnızca bireyin öznel tercihleriyle açıklanamayacak ölçüde nesnel ve ahlaki bir değere sahiptir.

Bu nedenle herhangi bir insan yaşamının kasıtlı olarak sona erdirilmesi yalnızca bireysel bir kayıp değil, insan yaşamına atfedilen ortak değerin de zedelenmesine yol açmaktadır. Çalışma, yaşamın kutsallığı anlayışının seküler hukuk düzenlerinde "yaşamın dokunulmazlığı" ilkesi biçiminde varlığını sürdürdüğünü ileri sürmektedir. Bu bağlamda insan yaşamının değeri bireysel iradenin ötesinde, insan onuru ve evrensel insan hakları ilkeleriyle temellendirilen ortak bir hukuki ve etik değer olarak ortaya çıkmaktadır.

Anahtar Kelimeler: Yaşam hakkı, yaşamın içkin değeri, insan onuru, yaşamın dokunulmazlığı, bireysel özerklik.

KAMU HİZMETİ VEREN SPOR KURUMLARINDA ÇALIŞAN PERSONELİN MEDYA OKURYAZARLIĞI DÜZEYLERİNİN DEMOGRAFİK DEĞİŞKENLERE GÖRE İNCELENMESİ

EXAMINATION OF MEDIA LITERACY LEVELS OF PERSONNEL WORKING IN PUBLIC SERVICE SPORTS INSTITUTIONS ACCORDING TO DEMOGRAPHIC VARIABLES

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Abstract
Media literacy has become one of the most important competencies for individuals in the digital age. The ability to access, analyze, evaluate and interpret media messages correctly contributes to the conscious use of digital environments. The purpose of this study is to examine the media literacy levels of personnel working in public service sports institutions according to demographic variables. The study was conducted using a quantitative research design. The sample consisted of 349 personnel employed in public service sports institutions located in Kars, Erzurum and Ağrı provinces. Data were collected through the Personal Information Form and the Media and Television Literacy Scale. Statistical analyses were carried out using the SPSS package program. Independent samples t-test and one-way ANOVA analyses were used to determine differences according to demographic variables. The findings revealed that media literacy levels varied according to some demographic characteristics. Considering the increasing importance of digital communication in sports institutions, improving media literacy skills may contribute to more effective communication and conscious media use among employees. It is recommended that public sports institutions organize educational activities to enhance media literacy competencies.
Keywords: Media literacy, sports institutions, public personnel, digital media, demographic variables.

Özet
Medya okuryazarlığı, bireylerin medya mesajlarına erişebilme, bu mesajları analiz edebilme, değerlendirebilme ve yorumlayabilme becerilerini kapsayan önemli bir yeterlilik alanıdır. Dijital iletişim araçlarının yaygınlaşmasıyla birlikte medya okuryazarlığı, kamu kurumlarında çalışan personel açısından da önem kazanmıştır. Bu araştırmanın amacı, kamu hizmeti veren spor kurumlarında çalışan personelin medya okuryazarlık düzeylerinin demografik değişkenlere göre incelenmesidir. Araştırma nicel araştırma yöntemi kullanılarak gerçekleştirilmiştir. Çalışmanın örneklemini Kars, Erzurum ve Ağrı il ve ilçelerinde kamu hizmeti veren spor kurumlarında görev yapan 349 personel oluşturmaktadır. Verilerin toplanmasında Kişisel Bilgi Formu ile Medya ve Televizyon Okuryazarlık Ölçeği kullanılmıştır. Elde edilen veriler SPSS paket programı aracılığıyla analiz edilmiştir. Analizlerde bağımsız örneklemler t-testi ve tek yönlü varyans analizi (ANOVA) kullanılmıştır. Bulgular, medya okuryazarlığı düzeylerinin bazı demografik değişkenlere göre farklılık gösterdiğini ortaya koymuştur. Spor kurumlarında görev yapan personelin medya içeriklerini eleştirel bakış açısıyla değerlendirebilmesi ve dijital ortamları bilinçli kullanabilmesi kurumsal iletişim süreçleri açısından önem taşımaktadır. Sonuç olarak, kamu hizmeti veren spor kurumlarında medya okuryazarlığı becerilerinin geliştirilmesine yönelik eğitim programlarının yaygınlaştırılması önerilmektedir.
Anahtar Kelimeler: Medya okuryazarlığı, spor kurumları, kamu personeli, dijital medya, demografik değişkenler.

* Bu çalışma doktora tezinden üretilmiştir.

KAMU HİZMETİ VEREN SPOR KURUMLARINDA ÇALIŞAN PERSONELİN İLETİŞİM BECERİLERİNİN SOSYAL MEDYA BAĞIMLILIĞI ÜZERİNE ETKİSİ

THE IMPACT OF COMMUNICATION SKILLS OF PERSONNEL WORKING IN PUBLIC SERVICE SPORTS INSTITUTIONS ON SOCIAL MEDIA ADDICTION

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Abstract
The widespread use of social media platforms has significantly affected individuals' communication processes and daily lives. The purpose of this study is to examine the effect of communication skills on social media addiction among personnel working in public service sports institutions. The study was conducted using a quantitative research method. The sample consisted of 349 personnel working in public service sports institutions located in Kars, Erzurum and Ağrı provinces. Data were collected using the Personal Information Form, Communication Skills Scale and Social Media Addiction Scale. Statistical analyses were performed through the SPSS package program. The findings revealed significant relationships between communication skills and social media addiction. In addition, communication skills were found to be a significant predictor of social media addiction. The results indicate that individuals with stronger communication skills tend to use social media more consciously and effectively. Consequently, improving communication skills through educational programs may contribute to reducing social media addiction among employees working in sports institutions.
Keywords: Communication skills, Social media addiction, Sports institutions, Public personnel, Sports management.

Özet
Sosyal medya platformlarının yaygınlaşması, bireylerin iletişim süreçlerini ve günlük yaşam alışkanlıklarını önemli ölçüde etkilemektedir. Bu araştırmanın amacı, kamu hizmeti veren spor kurumlarında çalışan personelin iletişim becerilerinin sosyal medya bağımlılığı üzerindeki etkisini incelemektir. Araştırma nicel araştırma yöntemi kullanılarak gerçekleştirilmiştir. Çalışmanın örneklemini Kars, Erzurum ve Ağrı il ve ilçelerinde kamu hizmeti veren spor kurumlarında görev yapan 349 personel oluşturmaktadır. Verilerin toplanmasında Kişisel Bilgi Formu, İletişim Becerileri Ölçeği ve Sosyal Medya Bağımlılığı Ölçeği kullanılmıştır. Veriler SPSS paket programı aracılığıyla analiz edilmiştir. Yapılan analizler sonucunda iletişim becerileri ile sosyal medya bağımlılığı arasında anlamlı ilişkiler bulunduğu belirlenmiştir. Ayrıca iletişim becerilerinin sosyal medya bağımlılığını anlamlı düzeyde yordadığı tespit edilmiştir. Elde edilen bulgular, iletişim becerileri düzeyi arttıkça sosyal medya kullanımının daha bilinçli ve kontrollü hale geldiğini göstermektedir. Sonuç olarak, spor kurumlarında çalışan personelin iletişim becerilerinin geliştirilmesine yönelik eğitim programlarının yaygınlaştırılması sosyal medya bağımlılığının azaltılmasına katkı sağlayabilir.
Anahtar Kelimeler: İletişim becerileri, sosyal medya bağımlılığı, spor kurumları, kamu personeli, spor yönetimi.

*Bu çalışma doktora tezinden üretilmiştir.

BİREYLERİN REKREATİF ETKİNLİKLERE BİLİNÇLİ KATILIMLARININ FARKLI PARAMETRELERLE İNCELENMESİ

EXAMINATION OF INDIVIDUALS' CONSCIOUS PARTICIPATION IN RECREATIONAL ACTIVITIES WITH DIFFERENT PARAMETERS

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Abstract
Recreational activities contribute to individuals' physical, psychological, and social well-being through the effective use of leisure time. Conscious participation in such activities may increase the benefits obtained from recreation. The aim of this study was to examine the conscious participation of students studying in sports-related departments in recreational activities according to different parameters. The study was conducted using a quantitative survey model. A total of 520 questionnaires were distributed, and data from 500 valid questionnaires were included in the analysis. The data collection tool consisted of socio-demographic questions, questions related to recreational activities, and the 15-item Mindful Attention Awareness Scale. Descriptive statistics, Independent Samples t-test, and One-Way ANOVA were used for data analysis. The findings indicated that mindfulness levels did not differ significantly according to gender, department, parental education level, or place of residence. However, participants who planned recreational activities, believed that recreational activities were beneficial and contributed to academic success, had hobbies, possessed knowledge about recreational activities, and practiced time management demonstrated significantly higher mindfulness levels. The results suggest that higher mindfulness positively affects participation in recreational activities and supports the effective evaluation of leisure time.
Keywords: Recreation, Recreational Activities, Mindfulness, Leisure Time, Sports Sciences Students.

ÖZET
Rekreatif etkinlikler bireylerin boş zamanlarını etkili değerlendirmelerine katkı sağlayan önemli faaliyetlerdir. Bu çalışmanın amacı spor bölümlerinde öğrenim gören öğrencilerin rekreatif etkinliklere bilinçli katılımlarının farklı parametreler açısından incelenmesidir. Araştırma nicel araştırma yöntemlerinden tarama modeline göre gerçekleştirilmiştir. Araştırma kapsamında 520 öğrenciye anket uygulanmış, eksik ve hatalı formlar çıkarıldıktan sonra 500 katılımcının verileri analiz edilmiştir. Veri toplama aracı olarak sosyo-demografik bilgi formu, rekreatif etkinliklere ilişkin sorular ve 15 maddelik Bilinçli Farkındalık Ölçeği kullanılmıştır. Verilerin analizinde tanımlayıcı istatistikler, bağımsız örneklem t-testi ve tek yönlü varyans analizi (ANOVA) uygulanmıştır. Bulgular, bilinçli farkındalık düzeyinin cinsiyet, bölüm, anne-baba eğitim durumu ve yaşanılan yere göre farklılaşmadığını göstermiştir. Buna karşın rekreatif etkinlikler için plan yapan, bu etkinliklerin faydalı olduğunu düşünen, ders başarısına katkı sağladığını belirten, hobi sahibi olan, zaman planlaması yapan ve rekreatif etkinlikler hakkında bilgi sahibi olan bireylerin bilinçli farkındalık düzeylerinin daha yüksek olduğu belirlenmiştir. Sonuç olarak bilinçli farkındalık düzeyinin artmasının rekreatif etkinliklere katılımı olumlu etkilediği ve boş zamanların daha verimli değerlendirilmesine katkı sağladığı söylenebilir.
Anahtar Kelimeler: Rekreasyon, Rekreatif Etkinlikler, Bilinçli Farkındalık, Boş Zaman, Spor Bilimleri Öğrencileri.

* Bu çalışma yüksek lisans tezinden üretilmiştir.

INTEGRATION OF CHEMICAL ENGINEERING AND SUSTAINABILITY: MATHEMATICAL MODELLING IN EMISSION CONTROL

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ABSTRACT
Industrial atmospheric emissions containing particulate matter pose a significant environmental and public health challenge, demanding increasingly efficient technologies for pollution control. In this context, mathematical modelling and Computational Fluid Dynamics (CFD) have become essential tools for the analysis and optimisation of emission control equipment, such as Venturi scrubbers and bag filters. However, the complexity associated with multiphase turbulent flows, pressure variations, and fluid-particle interactions still limit the development of highly efficient and energy-optimised systems. This study aims to investigate the application of mathematical modelling and CFD simulations in the analysis and optimisation of atmospheric pollutant control systems employed in chemical engineering. The adopted methodology is bibliographical, exploratory, and computational in nature, encompassing the formulation and numerical solution of the incompressible Navier-Stokes equations, coupled with the conservation equations for mass and momentum. Computational simulations are being developed in MATLAB/Python to evaluate operational parameters such as gas velocity, pressure drop, particle diameter, and liquid-to-gas ratio in Venturi scrubbers and bag filters. The study also incorporates structured mesh generation techniques and CFD modelling to analyse flow behaviour and particle collection efficiency under varying operating conditions. Preliminary results indicate that computational modelling enables the prediction of fluid dynamic behaviour, optimisation of collection efficiency, and reduction of energy consumption in emission control systems. Thus, the research contributes to the advancement of sustainable technologies for atmospheric pollution control and reinforces the integration of chemical engineering, mathematical modelling, and environmental sustainability.
Keywords: Matlab, Venturi, Emissions, CFD, Control.

PREPARATION OF AN FE/KAOLIN CATALYTIC SUPPORT AND ITS APPLICATION IN THE HETEROGENEOUS PHOTO-FENTON PROCESS FOR METHYLENE BLUE DEGRADATION

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Abstract
Water pollution caused by synthetic dyes has become a major environmental concern due to their persistence, toxicity, and resistance to conventional treatment methods. Among these pollutants, methylene blue is widely used in various industrial sectors and is frequently detected in wastewater. The present study focuses on the preparation of an iron-impregnated kaolin catalyst (Fe/Kaolin) and its application in the heterogeneous photo-Fenton degradation of methylene blue in aqueous solution.
Natural kaolin was collected, purified, sodified, acid-activated, and subsequently impregnated with iron ions to enhance its catalytic properties. The prepared material was characterized by Fourier Transform Infrared Spectroscopy (FTIR) to evaluate the structural modifications resulting from the treatment processes. The catalytic performance of the Fe/Kaolin material was investigated through photo-Fenton oxidation experiments under UV irradiation.
The effects of several operational parameters, including catalyst dosage, solution pH, and initial methylene blue concentration, were examined. The results showed that the degradation efficiency increased with increasing catalyst dosage and decreased with increasing dye concentration. The highest degradation efficiency was achieved under acidic conditions, confirming the significant role of pH in the photo-Fenton process. Kinetic analysis indicated that the degradation of methylene blue followed a pseudo-first-order model.
The obtained results demonstrate that Fe/Kaolin is an effective and low-cost heterogeneous catalyst for the removal of methylene blue from aqueous solutions. This study highlights the potential of modified kaolin as a promising material for environmental remediation and wastewater treatment applications.
Keywords: Kaolin, Iron impregnation, Fe/Kaolin catalyst, Heterogeneous photo-Fenton, Methylene blue, Wastewater treatment, Photocatalytic degradation.

DYNAMICAL ANALYSIS OF MALARIA–TUBERCULOSIS CO-INFECTION TRANSMISSION UNDER MULTIPLE CONTROL MEASURES

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Abstract:
Malaria–tuberculosis (TB) co-infection remains a significant public health challenge, particularly in regions with inadequate healthcare facilities. In this study, a deterministic compartmental model for the transmission dynamics of malaria–TB co-infection is developed, incorporating multiple intervention strategies such as treatment and vaccination. The model is rigorously analyzed to establish key qualitative properties, including the positivity and boundedness of solutions. The basic reproduction number is derived using the next-generation matrix method, and its role in determining disease dynamics is examined. The disease-free equilibrium is shown to be locally and asymptotically stable when the reproduction number is less than unity, and unstable otherwise. Further analysis, including sensitivity analysis, revealed that increasing treatment rates, enhancing vaccination coverage, and reducing effective contact rates significantly lower disease transmission. The model also exhibits backward bifurcation, indicating that reducing the reproduction number below one may not be sufficient for disease eradication. Numerical simulations are performed to support the analytical results. The findings showed the importance of combined intervention strategies in controlling malaria–TB co-infection. It is therefore recommended that public health policies prioritize integrated approaches, including improved access to treatment, expanded vaccination programs, and measures to reduce transmission rates, particularly in resource-limited settings.
Keywords: Malaria–TB co-infection, Basic reproduction number, Stability analysis, Sensitivity analysis, Backward bifurcation analysis

A MATHEMATICAL MODEL FOR THE COEXISTENCE OF VECTOR AND NON-VECTOR TRANSMISSION PATHWAYS IN MALARIA DYNAMICS

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Abstract
Malaria is a mosquito-borne infectious disease caused by Plasmodium parasites and transmitted to humans through the bites of infected female Anopheles mosquitoes. It remains a major global public health concern, particularly in tropical and subtropical regions, where it causes significant illness and death, especially among young children and other vulnerable groups. In this study, a compartmental mathematical model is developed to investigate the transmission dynamics and control of malaria. The model incorporates both vector-borne and non-vector transmission pathways to reflect realistic disease dynamics. Key analytical properties are established, including the positivity and boundedness of solutions, confirming that the model is biologically meaningful and mathematically well-posed. The basic reproduction number is derived using the next-generation matrix approach. The disease-free equilibrium is shown to be locally asymptotically stable when the reproduction number is less than one and unstable when it exceeds one, indicating a clear threshold for disease elimination. Sensitivity analysis and numerical simulations are performed to evaluate the relative influence of key epidemiological and control parameters on malaria transmission dynamics. The analysis identified the most sensitive parameters that drive disease spread and highlights how changes in intervention-related variables affect the basic reproduction number. The simulation results revealed that interventions targeting the mosquito population and human hosts substantially reduce transmission. In particular, the consistent use of treated mosquito nets and effective indoor residual spraying lower human–mosquito contact rates, while mosquito sterilization strategies reduce vector population fertility and long-term survival. In addition, vaccination of susceptible children decreases the pool of individuals at risk of infection, and timely diagnosis followed by effective treatment shortened the infectious period in humans. These interventions act synergistically to suppress malaria transmission and reduce disease prevalence in the population.

Based on these findings, it is recommended that public health authorities adopt an integrated control strategy combining vector control, personal protection measures, immunization programs, and early case detection and treatment. Strengthening community awareness and ensuring consistent implementation of these interventions are also essential for reducing malaria burden and moving toward long-term eradication.

Keywords: Compartmental model, Basic reproduction number, Sensitivity analysis, Numerical simulations, Vector control

NONLINEAR RADIATION EFFECTS ON MHD ETHYLENE GLYCOL NANOFLUID FLOW OVER A VERTICAL PERMEABLE CYLINDER FOR THERMAL ENERGY SYSTEM APPLICATIONS

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Abstract
This study examines the steady, laminar magnetohydrodynamic (MHD) stagnation-point flow of an ethylene glycol-based nanofluid over a vertical permeable circular cylinder. The model incorporates nonlinear thermal radiation to capture high-temperature effects, along with spatially and temperature-dependent internal heat generation to represent realistic thermal environments. The governing nonlinear partial differential equations are transformed into a coupled system of ordinary differential equations using similarity transformations and solved numerically via a stable computational approach. The influences of key parameters, including magnetic field strength, curvature, temperature ratio, and non-uniform heat generation, are analyzed in detail. The results show that these parameters significantly modify the velocity and thermal boundary layers, thereby controlling the heat transfer performance of the system. The study provides improved insight into nonlinear thermal transport phenomena with relevance to high-temperature cooling systems, energy conversion processes, and industrial thermal management applications.
Keywords: Nonlinear Radiation; Ethylene Glycol Nanofluid; Vertical Permeable Cylinder; Thermal Energy System; Non-uniform heat source

HEAT TRANSMISSION AND ENTROPY OPTIMIZATION OF MHD MICROPOLAR FLUID FLOW OVER AN EXTENDING SHEET

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Abstract
This study presents a comprehensive numerical investigation into the heat transmission characteristics and entropy generation optimization of a magnetohydrodynamic (MHD) micropolar fluid flow over an extending (stretching) sheet. Motivated by applications in polymer extrusion, metallurgical processing, and advanced thermal management systems, the mathematical model incorporates the coupled effects of micro-rotational inertia, viscous dissipation, and heat source. The governing nonlinear partial differential equations for mass, momentum, angular momentum, and energy conservation are reduced to a system of coupled ordinary differential equations via appropriate similarity transformations. The resulting boundary value problem is solved utilizing a robust numerical scheme. Parametric analysis reveals that the applied transverse magnetic field induces a Lorentz drag force that significantly decelerates the primary fluid velocity while concurrently enhancing the thermal boundary layer thickness. Furthermore, the micropolar material parameter is shown to reduce the surface skin friction coefficient compared to classical Newtonian fluids, highlighting the lubricating effect of micro-structure. Entropy generation analysis, grounded in the second law of thermodynamics, demonstrates that thermal irreversibility and fluid friction are the primary contributors to system inefficiency. The Bejan number is evaluated to quantify the relative dominance of these irreversibility mechanisms
Keywords: MHD flow; Micropolar fluid; Heat transmission; Entropy generation minimization; Bejan number; Thermodynamic optimization.

GEOMETRICALLY NONLINEAR VIBRATION OF A CRACKED CLAMPED–CLAMPED EULER–BERNOULLI BEAM UNDER DISTRIBUTED DYNAMIC LOADING: A GALERKIN-BASED REDUCED-ORDER APPROACH FUTURE SCENARIOS TO COME FROM GLOBALIZATION TO FREE TRADE

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Abstract
The nonlinear dynamic behaviour of cracked beam-like structures remains a critical concern in structural integrity assessment, particularly under realistic service conditions involving large deflections and external excitations. While previous studies have extensively addressed free vibration characteristics of cracked Euler–Bernoulli beams, the combined influence of geometric nonlinearity and spatially distributed dynamic loading has received comparatively limited attention. This study proposes an extended analytical framework to investigate the geometrically nonlinear vibration of a clamped–clamped Euler–Bernoulli beam containing an open transverse crack, explicitly incorporating the effect of a uniformly distributed dynamic load.
The crack is represented through an equivalent rotational flexibility derived from fracture mechanics, while geometric nonlinearity is introduced via mid-plane stretching. A key feature of the approach is the construction of crack-sensitive eigenfunctions using a segmented formulation, which are subsequently embedded in a Galerkin-based reduced-order model. This leads to a nonlinear, amplitude-dependent eigenvalue problem that captures the coupled effects of damage and external excitation.
The analysis reveals that crack depth and vibration amplitude markedly amplify the non-dimensional bending stress, with pronounced localization near the clamped boundaries. Importantly, introducing a uniform dynamic load alters both the stress distribution and the nonlinear dynamic response, highlighting interaction mechanisms that are not captured in conventional free-vibration analyses. The proposed formulation offers a unified, computationally efficient framework for assessing the dynamics of damaged beams under realistic loading conditions, providing new insights into structural health monitoring and the design of resilient engineering systems.
Keywords: Nonlinear vibration; Cracked beam; Euler–Bernoulli beam; Geometric nonlinearity; Rotational flexibility; Fracture mechanics; Distributed dynamic load; Galerkin method

CIRCULAR ECONOMY PATHWAYS FOR MINE TAILINGS AND METALLURGICAL WASTE IN SUSTAINABLE CONSTRUCTION MATERIALS

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Abstract
Mine tailings and metallurgical wastes represent some of the most persistent environmental challenges associated with mineral extraction and processing. Large volumes of waste materials are commonly stored in tailings facilities, slag heaps, and disposal areas, creating risks related to land occupation, dust generation, water contamination, geotechnical instability, and long-term liability. At the same time, many of these materials contain mineralogical and chemical properties that may enable beneficial reuse in construction materials. This conceptual review examines circular economy pathways for transforming mine tailings, slag, and other metallurgical residues into sustainable construction products such as cementitious binders, geopolymer materials, bricks, aggregates, road base layers, and mine backfill systems. The paper highlights the technical, environmental, and regulatory considerations that must guide such reuse, including material characterization, leaching behavior, mechanical performance, durability, carbon footprint, and compliance with construction standards. It also emphasizes that circular utilization should not be presented as waste disposal by another name; rather, it must be supported by risk assessment, quality control, and lifecycle thinking. The contribution of this paper is the development of an integrated circular economy perspective that connects mining waste management with construction material innovation. The paper concludes that responsible valorization of mining residues can reduce environmental burdens, conserve natural resources, support industrial symbiosis, and create new sustainability pathways for both mining and construction sectors.
Keywords: Mine tailings; Circular economy; Metallurgical waste; Sustainable construction materials; Geopolymers; Waste valorization.

TERRITORIAL PLANNING AND THE SUSTAINABILITY OF TERRITORIES: TOWARD AN INTEGRATED GOVERNANCE APPROACH

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ABSTRACT
Territorial planning plays a central role in promoting sustainable development, particularly in contexts marked by rapid urbanization, environmental pressure, socio-economic inequalities, and growing vulnerability to climate change. This communication aims to examine how territorial planning can contribute to strengthening the sustainability of territories through an integrated governance approach. The study highlights the importance of coordinating public policies, local actors, spatial development strategies, and environmental considerations in order to build more resilient and inclusive territories.
The paper argues that sustainability cannot be achieved through sectoral planning alone. Instead, it requires a territorial vision based on the articulation between economic development, social equity, environmental protection, and institutional coordination. Territorial planning is therefore analyzed not only as a technical instrument for land-use organization, but also as a strategic tool for collective decision-making, resource management, and long-term territorial resilience.
Particular attention is given to the role of local governance, stakeholder participation, and the adaptation of planning instruments to territorial specificities. The communication also emphasizes the need to move from a fragmented model of territorial intervention toward an integrated and participatory planning framework capable of responding to contemporary challenges such as water scarcity, land degradation, urban expansion, and regional disparities.
By focusing on the relationship between planning and sustainability, this paper contributes to the debate on how territories can design development pathways that are both economically viable, socially inclusive, and environmentally responsible. The expected contribution is to provide a conceptual framework for understanding territorial planning as a key lever for sustainable territorial transformation.
Keywords: Territorial planning, sustainability, territorial governance, sustainable development, resilience, local development.

THEORETICAL ANALYSIS OF GLUTAMIC ACID AS ECO-FRIENDLY CORROSION INHIBITOR FOR ALUMINUM IN HCL SOLUTION

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ABSTRACT
The corrosion of aluminium in acidic milieus, such as hydrochloric acid (HCl), stances significant challenges in various industrial applications. This study investigates the potential use of glutamic acid as a green corrosion inhibitor for aluminum in hydrochloric solution through theoretical and computational approaches. Using Spartan software, the 3D structures of glutamic acid, aluminum, and HCl were constructed, and the geometry optimization was performed using the DFT method. Subsequent adsorption studies focused on the interactions between aluminum and the molecules, with both length calculations used to assess interaction strengths. Also, the energy ban gap (E-Gap) between the HOMO and LUMO of the adsorption complexes was evaluated to determine the stability and reactivity of the inhibitor. The results indicates that glutamic acid forms a more stable adsorption complex with aluminum, characterized by a smaller energy ban gap of 11.36eV and stronger chemisorption compared to hydrochloric solution with the ban gap of 13.88eV. These findings suggest that glutamic acid exhibits a higher affinity for the aluminum surface, providing an effective barrier against corrosion. This study offers valuable insights into the potential application of glutamic acid as an eco-friendly corrosion inhibitor in acidic environments, contributing to sustainable corrosion management strategies.
Keywords: Aluminum**;** chemisorption; glutamic acid; corrosion inhibitor; computation

POVERTY, INSECURITY, AND ENVIRONMENTAL DEGRADATION IN NIGER STATE, NIGERIA: PATHWAYS TO SUSTAINABLE DEVELOPMENT

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Abstract
This study investigates the interconnections between poverty, insecurity, and environmental degradation in Niger State, North-Central Nigeria, and their collective implications for sustainable development. Grounded in the Sustainable Livelihoods Framework, Environmental Security Theory, and Poverty Trap Theory, the study adopts a mixed-methods research design that integrates quantitative survey data with qualitative insights from key informant interviews and field observations. Primary data were collected from a target population of approximately 84,000 rural households distributed across the three senatorial zones of Niger State Zones A, B, and C covering nine purposively selected Local Government Areas (LGAs). Using the Taro Yamane formula and a multi-stage sampling procedure, a representative sample of 400 households was drawn: 134 from Zone A, 148 from Zone B, and 118 from Zone C. An additional 13 key informants comprising community leaders, agricultural extension officers, and security personnel were purposively selected, bringing the total number of participants to 413.
Structured questionnaires were used to capture data on household income levels, frequency and severity of environmental hazards (flooding, soil erosion, and deforestation), and perceptions of insecurity (banditry, kidnapping, and communal conflicts). The findings reveal that 62% of respondents were primarily engaged in farming, 68% had experienced flooding within the preceding five years, and 57% reported high levels of perceived insecurity. Multiple regression analysis indicates that environmental degradation ($\beta = 0.42$, $p < .001$) and insecurity ($\beta = 0.37$, $p = .001$) each exert a statistically significant positive effect on poverty levels. Critically, their interaction effect ($\beta = 0.29$, $p = .007$) confirms that the co-occurrence of these two stressors amplifies poverty beyond the sum of their individual impacts, explaining 64% of the variance in poverty outcomes ($R^2 = .64$). Qualitative data from key informant interviews corroborate these findings, revealing that insecurity forces farmers to abandon cultivated fields, market disruptions reduce household incomes, and recurring floods permanently degrade productive farmland. The study concludes that poverty, insecurity, and environmental degradation are mutually reinforcing and form a self-perpetuating cycle that undermines sustainable development in Niger State. It recommends an integrated, multi-sectoral policy framework that simultaneously targets poverty alleviation, environmental sustainability through flood control and climate-smart agriculture, and community-level security enhancement. The findings have implications for SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 13 (Climate Action), and SDG 16 (Peace, Justice, and Strong Institutions).
Keywords: poverty, insecurity, environmental degradation, sustainable development, Niger State, Nigeria

DIGITAL MARKETING FATIGUE IN THE AGE OF CONTINUOUS ONLINE ADVERTISING: EXPLORING ITS IMPACT ON CONSUMER WELL-BEING

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ABSTRACT
The rapid expansion of digital technologies has fundamentally transformed the way organizations communicate with consumers. Through social media platforms, search engines, mobile applications, and video-sharing websites, individuals are exposed to a growing volume of online advertising messages on a daily basis. While digital marketing enables highly personalized and targeted communication, excessive advertising exposure may generate negative psychological consequences. In this context, the concept of digital marketing fatigue has emerged to describe feelings of exhaustion, irritation, disengagement, and reduced responsiveness resulting from repeated exposure to promotional content in digital environments. Despite the increasing prevalence of this phenomenon, limited research has examined its implications for consumer well-being. Therefore, this study aims to explore the relationship between continuous online advertising and consumer well-being by identifying the factors contributing to digital marketing fatigue and examining how consumers react to such experiences. To achieve this objective, a qualitative exploratory approach is proposed. Semi-structured interviews will be conducted with active users of digital platforms, and the collected data will be analyzed using thematic analysis supported by NVivo software. The study is expected to identify several dimensions of digital marketing fatigue, including advertising intrusiveness, information overload, cognitive burden, and emotional exhaustion. Furthermore, the findings are anticipated to reveal how excessive advertising exposure influences consumer attitudes, online behaviors, and perceptions of well-being. By contributing to the emerging literature on consumer well-being in digital environments, this research seeks to provide theoretical insights and practical recommendations for developing more ethical, consumer-centered, and sustainable digital marketing strategies.
Keywords: Digital Marketing Fatigue; Consumer Well-Being; Online Advertising; Advertising Intrusiveness; Information Overload; Digital Marketing; Qualitative Research.

UNDERSTANDING CUSTOMER PREFERENCES IN SHOE SOLE DESIGN: A COMPREHENSIVE STUDY ON MATERIAL, COMFORT, AND MARKET TRENDS

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Abstract
Shoe sole design plays a critical role in shaping consumer satisfaction by influencing comfort, durability, aesthetics, and functional performance. This paper examines the key determinants of customer preferences in shoe sole design, with a focus on cushioning properties, material performance, wear resistance, and environmental sustainability. Evidence from existing studies indicates that comfort and durability consistently rank as the most influential purchase drivers, while growing environmental awareness is shifting consumer demand toward eco-friendly and recyclable materials. The study further highlights emerging trends, including increased interest in customized soles, integration of smart technologies for performance monitoring, and the rising popularity of minimalist footwear designs. Advanced materials, particularly graphene-based and Enset fiber-reinforced composites, demonstrate significant potential in enhancing mechanical strength, flexibility, and sustainability compared to conventional sole materials. Reported findings suggest that such hybrid materials can improve wear resistance and cushioning efficiency while reducing environmental impact. In addition, the study explores demographic and regional variations in preferences, revealing that factors such as age, gender, lifestyle, and climatic conditions strongly influence material selection and design priorities. Urban consumers tend to prioritize style and innovation, whereas rural users often emphasize durability and cost-effectiveness. These advancements, critical research gaps persist, particularly in localized consumer behavior studies, long-term performance evaluation, and consumer awareness of advanced material technologies. Addressing these gaps through context-specific and interdisciplinary research will be essential for developing shoe soles that balance functionality, aesthetics, and sustainability to meet evolving global market demands.
Keywords: Shoe sole, Customer preference, Comfort, Material, Durability, Sustainability, Footwear industry

DIGITAL PUBLIC RELATIONS STRATEGY IN INDONESIAN HIGHER EDUCATION INSTITUTIONS FOR STRENGTHENING PUBLIC TRUST AND EDUCATIONAL COMMUNICATION IN THE DIGITAL ERA

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ABSTRACT
The rapid expansion of digital media has transformed communication practices in higher education institutions, requiring universities to adopt more strategic approaches to stakeholder engagement and public trust building. In Indonesia, higher education institutions increasingly utilize digital platforms to enhance institutional visibility, communication effectiveness, and public engagement. However, the implementation of digital public relations (PR) strategies remains uneven due to differences in organizational capacity, communication governance, and digital maturity. This study examines how digital public relations strategies are implemented in Indonesian higher education institutions and how they contribute to strengthening public trust and educational communication in the digital era. This research employs a qualitative approach using a single-case study design. Data were collected through document analysis, including institutional reports, communication materials, government policy documents, official websites, and social media content. The data were analyzed using thematic analysis to identify patterns related to digital PR practices, stakeholder engagement, and institutional trust. The findings reveal that digital public relations practices in Indonesian higher education institutions remain predominantly information-oriented rather than dialogic and participatory. Although digital platforms provide opportunities for broader outreach and engagement, communication fragmentation, inconsistent messaging, and limited institutional capacity continue to constrain effectiveness. The study also finds that communication consistency, transparency, and responsiveness influence institutional trust. Furthermore, a hybrid communication model combining traditional and digital communication practices remains prevalent across institutions. This study contributes to understanding digital public relations as a multidimensional process involving communication strategy, digital media utilization, and stakeholder relationship management within higher education institutions.
Keywords: Digital Public Relations; Higher Education Communication; Public Trust; Stakeholder Engagement; Digital Media Communication

IMPACT OF BANK CHARACTERISTICS ON FINANCIAL PERFORMANCE OF SELECTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract
Since the banking industry is the primary conduit for savings and their distribution to different economic sectors, its importance in an economy can be justified. This study looks at how the financial performance of deposit money deposit banks in Nigeria is affected by bank attributes such as capital, loans and advances, and liquidity. Therefore, it is believed that without these factors, the banking industry, particularly Nigeria's deposit money institutions, cannot operate profitably. The study uses secondary source data from the chosen banks' financial statements and an ex post facto research design. The data was analyzed using regression analysis. The study's conclusions indicate that loans and advances have a major influence on financial performance, but bank capital and liquidity had no such effect during the study period. The study suggests that Nigerian banks' regulatory bodies should concentrate on and keep regulating banks' capital as needed in order to increase the profitability of deposit money banks in Nigeria. Additionally, the management of deposit money banks should create credit policies that are consistent with the CBN's credit policies, and the CBN should review the liquidity requirements in order to invest idle liquidity to boost earnings.
Keywords: bank characteristics, financial performance, deposit money bank

AN APPRAISAL OF PASSIVE FIRE PROTECTION DEFECTS IN PUBLIC OFFICE BUILDINGS OF ABUJA, NIGERIA

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Abstract
Background: Fire in public buildings can cause a lot of damage which includes: loss of life, disruption of daily activities and property damage (National Fire Protection Association, 2020). Public office buildings in particular require effective passive fire protection due to the presence of large number of occupants, sensitive equipment, and valuable data (Liu *et al*., 2020).
Objective: The aims of the study is to evaluate the integration of passive fire protection with other fire safety measures and propose a design utilizing effective passive fire protection strategies in a public office building in Abuja.
Methods: This study adopts a mixed-methods design, integrating quantitative and qualitative data to comprehensively address the objectives. A mixed-method approach is well-suited to fire-safety research, as it allows analyzing of evidence from multiple sources. The study will combine a structured survey questionnaire with secondary data reviewed to capture both statistical pattern and contextual insights.
Results: In spite of the importance of passive fire protection (PFP) strategies in public office buildings within Abuja, Nigeria. Passive fire protection measures should be implemented and maintained in public office buildings, with particular attention to their building characteristics, structural fire safety features, visual and physical fire indicators, integration with active fire systems, and occupant awareness.
Conclusion: Passive fire protection (PFA) strategies are crucial part of a building, these passive fire protection strategies aim at avoiding the occurrence of fire or slow the spread when it occurs through the use of fire-resistant construction materials, design elements, and construction methods. The assessment of these passive fire protection strategies in public offices is important to ensure that office buildings are designed and constructed to provide safety for occupants.
Keywords: Passive Fire Protection (PFP) Features *(Structural Fire Resistance Elements, Fire Compartmentalization, Fire Exit/Egress, Fire Doors, Fire resistance finishes)*

THERMAL PERFORMANCE OF A CLIMATE-RESPONSIVE DATA CENTRE IN ABUJA, NIGERIA

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Abstract
Nigeria's growing digital economy is accelerating data centre construction, yet designing these facilities within Abuja's tropical savannah climate (Köppen Aw) remains under-researched. Conventional cooling approaches developed for temperate climates impose 30–40% greater cooling loads in tropical contexts, increasing energy costs and carbon emissions. This paper investigates how climate-responsive architectural strategies can be integrated into data centre design for Abuja to reduce cooling energy without compromising IT equipment performance. A mixed-methods framework combining a systematic literature review, a comparative analysis of five data centres across comparable climates, and EnergyPlus building energy simulations using Abuja hourly weather data was employed. Results show that integrating north-south orientation, cool roofs, high-performance insulation, indirect evaporative pre-cooling, night ventilation of support spaces, and a dry-season air-side economiser achieves a 45.1% reduction in annual cooling energy, lowering Power Usage Effectiveness from a baseline of 2.12 to 1.48. The findings confirm that context-specific, climate-responsive design significantly reduces data centre energy demand in Nigerian tropical conditions and offers a replicable framework for West Africa's emerging data centre sector.
Keywords: climate-responsive design, data centre, energy efficiency, passive cooling, tropical savanna,

DESIGN STRATEGIES FOR EQUESTRIAN COMPLEXES BASED ON TOURISM DEVELOPMENT

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Abstract
The design of equestrian complexes, as a vital instrument for tourism development, necessitates an interdisciplinary approach that integrates cultural, economic, and environmental elements. This research investigates design strategies for equestrian complexes based on tourism development to bridge the gap between theory and practice and establish a foundation for sustainable development. Utilizing field studies, scientific literature analysis, and the examination of successful international case studies, this study elucidates design frameworks and proposes innovative models. The findings indicate that prioritizing indigenous characteristics, employing successful international patterns, and adapting them to the climatic and cultural contexts of each region play a crucial role in attracting both domestic and international tourists. Furthermore, the integration of modern technologies alongside the preservation of cultural and historical authenticity fosters the enhancement of design quality and management within these complexes. Ultimately, this article offers recommendations for improving the design of equestrian complexes, serving as an effective guide for designers, tourism managers, and policymakers to create dynamic and efficient facilities aligned with sustainable tourism development.
Keywords: : design, Interdisciplinary Approach, Design Strategies, Equestrian Complexes, Tourism Development

DAMIYAH: FROM ADAM'S DESCENT TO THE HUMAN JOURNEY

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Abstract
This research paper explores the hypothesis of the civilizational trajectory of *Homo sapiens* across Jordan, positioning the Damiya region in the Central Jordan Valley as a geographic and doctrinal focal point for the dawn of human settlement. The study adopts a methodology centered on tracing human "technological memory" in transforming natural resources across interconnected geographic stations, culminating in the archaeological site of Ain Ghazal.
Also the study addresses the site of Damiya in Jordan as one of the places where Jordanians believe Adam (peace be upon him) descended, marking the beginning of Homo sapiens' life on Earth before expanding across various countries."
The Foundational Station (Damiya): A geomorphological analysis of the Damiya bottleneck, framing it as a unique landing point characterized by specific topography. It examines the use of Marl as a primary material, reflecting the earliest human engineering responses in shaping their environment.
Migration and Ascent Dynamics: An investigation of the migration route through the Zarqa River and the vicinity of Jerash, where these valleys provided natural shelters and high-quality flint resources, facilitating the advancement of lithic technology (blade technology).
Archaeological Interaction and Faunal Replacement: A discussion on the interaction between *Homo sapiens* and the territories inhabited by *Homo erectus* in the Zarqa Valley (Al-Sukhna and Al-Jariya sites). The paper provides a scientific explanation for the "archaeological gap" based on geological transformations and catastrophic flooding events.
Engineering and Chemical Empowerment (Ain Ghazal): An examination of the technological leap at Ain Ghazal, where humans transitioned from using raw, soft clay in the Jordan Valley to innovating "burnt lime plaster" through controlled thermal kilns. This represents a continuity in inherited visual identity and aesthetic standards.
Conclusion: The study concludes that this geographic path constitutes a unified whole, bridging "foundational instinct" and material innovation. The chemical manipulation of limestone at Ain Ghazal to recreate a stark white aesthetic serves as an embodiment of inherited scientific consciousness, confirming that settlement at Ain Ghazal was the product of cumulative knowledge rather than environmental spontaneity. The study aims to provide an interpretive framework that integrates archaeological evidence with the deep historical context of early human migration paths in the Southern Levant.
Keywords: Ain Ghazal, Damiya, Zarqa Valley, Human Settlement, Stone Age, Ancient Chemical Technology, Environmental Adaptation

3D INFORMATION PRODUCTION AND VISUALIZATION TECHNOLOGIES FOR INSTIGATING CITIZENS' READING AND WRITING AND DIGITAL EDUCATION PROCESSES

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ABSTRACT
One of the challenges of contemporary education is how to instigating, establishing and sustaining balanced individuals' reading and writing trajectories encompassing enhancements in cognitive and technical skills for dealing with analogue and emerging digital technologies. Wolf's investigation (2019) has proposed that one way of reducing such problem, it is to provide opportunities for citizens learning to think, read and write through conventional print process. Plus, in a parallel mood, a key for decreasing the mentioned situation, it is ones to developing digital education based abilities related to creating graphical arts and codifying. The objectives of this work are to present examples and examine how such propose can and has been achievable within situated teaching and learning actions at K-12 education levels and beyond. This study methodology has been connected with a mix of concepts such as situated learning (Illeris, 2008), dialogic education action (Freire, 2016), mind plasticity and learning (Rotta et al., 2018) and Computational Action (2026). It includes, a process of qualitative literature research for identifying use cases and emerging information production and visualization technologies (IPVT) applied on subjects' education trajectories (Franco, 2026a). Results of this study have been achieving accessible, low cost, however, high quality ways of applying emerging IPVT for instigating research, read and write multimodal texts (Ribeiro, 2021), through using analogue and digital technologies. It includes inspiring and sustaining individuals' engagement in collaborative and co(creative) three-dimensional (3D) virtual environments processes based on applying transdisciplinary knowledge (Franco, 2023). These have meant opportunities for promoting ordinary citizens' incremental access to acquiring and applying knowledge referent to the digital twins concept and its practices (İlbas et al. 2026) across reading and writing computer programming language source code and visualizing its 3D symbolic representation (Franco, 2026, b), contributing for engaging individuals in media literacy and digital education trajectories, empowering citizens (Unesco, 1984; Unesco, 2026 a, b).

PROMOTING CULTURAL VALUES OF AN XUAN VILLAGE, HUE CITY, IN ASSOCIATION WITH SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION

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Abstract
An Xuan Village in Hue City represents a unique "living heritage," preserving indigenous cultural practices and traditional values that are increasingly challenged by the dynamics of globalization. This study examines the contemporary state of An Xuan Village's cultural assets, emphasizing the necessity of integrating these values into sustainable development frameworks. Through an analytical approach, the research identifies the opportunities and threats posed by globalization to traditional identity. The paper proposes strategic models for sustainable exploitation, aiming to strike a balance between preserving the authenticity of the village's heritage and fostering modern socio-economic development. Drawing on comparative insights, the study highlights how local cultural ecosystems can adapt to global pressures while reinforcing their resilience. The findings offer practical implications for local policymakers and community stakeholders in Hue, providing a roadmap for leveraging cultural heritage as a pillar for long-term sustainable growth.
Keywords: Living heritage, An Xuan Village, sustainable development, globalization, Hue City, cultural preservation.

BIOPHILIC DESIGN FORMS IN THE STAGE PRODUCTION OF FEMI OSOFISAN'S *FOREST OF PROMISED HARM*

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Abstract
Conventional set and costume designs often relie on fabricated or imported elements with a few numbers of theatre designers integrating locally sourced, biodegradable, and repurposed materials to construct immersive environments that reflect thematic concerns and cosmo-spatia architectural traditions of Africa landscape
This study examines the emergence and application of organic set and costume designs within biophilic philosophy in stage production of Femi Osofisan's *Forest of Promised Harm*. The study focuses on how indigenous materials, sustainable practices, and culturally rooted aesthetics reflect the folkloric tradition of story telling in Africa. Through content analysis and participant observation methods this paper adopts Edward O. Wilson (1984)'s Biophilia Theory, to identify key organic strategies of biophilic design principles that blur boundaries between interior sets (Olówóaiyé's compound, and external landscape (Anthill, Grandmother, Anjonu Iberu and Olubode's locale) in the production.
Findings reveal that despite the usual culture of modern approach of set and costume designs, the selected production employ use of environmental elements that pronounced the over artistic interpretation of the play with visual aesthetics. For instance, Baba Onirungbon Yeuke, Arun-Diseases, Anjonu Iberu's costumes made with biodegradable materials with leaves, depict their gravitational status towards their environment; Forest Beings, while the forest locales have different shapes and shades of forest (greenish, brownish and sand) elements to project the production. In a way, this approach reduces environmental pollution that comes with the conventional design practice as the used elements can be repurposed for theatrical or non-theatrical activity.
The study concludes that organic set and costume design functions as a decolonising aesthetic practice, challenging imported painted-scenery and fabric-reliant, offering a replicable model with true Africanness in design practice. By bridging traditional craftsmanship of natural and created organic creative space, these innovations position theatre as a vital site of creative and ecological resistance and a platform for realizing SGD goal 2030.
Keywords: Design, Biophilia, Set, Organic, Innovations

GLİKO ALTIN NANOPARTİKÜL VE GLİKONANOTEKNOLOJİ UYGULAMALARI İÇİN YENİ 2-TİP TİYO-GLUKOZ SENTEZİ VE KARAKTERİZASYONLARI

SYNTHESIS AND CHARACTERIZATION OF TWO NOVEL THIO-GLUCOSE DERIVATIVES FOR GOLD GLYCONANOPARTICLE AND GLYCONANOTECHNOLOGY APPLICATIONS

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Abstract
Nanostructures play a crucial role within the realms of science and technology. Especially within the realm of pharmacology, their employment as drug carrier systems is highly prevalent, with their functional properties subject to ongoing optimization. Driven by the rapid development of nanotechnology, research has increasingly focused on the synthesis of various nanostructures. Gold nanoparticles represent one of the most prominent nanostructures yielded by these investigations. Due to their robust fluorescence properties, gold nanoparticles exhibit successful and improvable therapeutic effects as bioimaging agents, as well as in photothermal and photodynamic therapy applications. In addition, nanoparticles and hybrid organic/gold nanoparticles hold significant promise for applications in biodiagnostics and site-specific targeted therapy. Nevertheless, AuNPs alone are unstable under diverse physiological conditions. Additionally, their translocation through specific biological membranes and cell surfaces remains highly difficult. In addition, their efficacy in target cell recognition is insufficient. To seamlessly exploit the extraordinary properties of gold nanostructures, their outer surfaces must be recognized by living tissues, capable of crossing membrane barriers, and able to bind to specific receptors. To achieve this, gold nanostructures must be conjugated with amino acids, proteins, and carbohydrates. To overcome these limitations, current research has increasingly focused on the design and synthesis of novel glyconanoparticulate structures. In particular, surface modifications of gold nanoparticles with mono- and oligosaccharides not only impart colloidal stability to the nanostructures but also render them highly suitable for drug delivery and transport applications by encapsulating therapeutic agents such as drugs or genes. Within the scope of this study, two novel thiol-functionalized carbohydrate derivatives incorporating various spacer arms were synthesized for subsequent conjugation onto gold nanoparticles. For this purpose, diacetone-D-glucose was initially synthesized, followed by the conjugation of alkyl chains with 4- and 6-carbon lengths bearing thiol functional groups. Consequently, candidate compounds with appropriate potential were obtained to yield gold nanoparticles masked with carbohydrate moieties via these thiol functional groups.
Keywords: Gold nanoparticles (AuNPs), Glyconanoparticles (GNPs), Gold glyconanoparticles

Özet
Nano yapılar bilim ve teknoloji alanında oldukça önemli bir yere sahiptir. Özellikle farmakoloji alanında ilaç taşıyıcı sistem olarak kullanılmı yaygın ve kullanım özellikleri sürekli olarak geliştirilmektedir. Nanoteknolojinin hızlı gelişimi ile çeşitli nano yapıların sentezi çalışmalarına da yönelim artmıştır. Bu çalışmalar ile elde edilen nano yapılar arasında önemli olanlardan biriside altın nanopartiküllerdir. Altın nanopartiküller; güçlü floresans özellikleri sayesinde, biyo görüntüleme ajanı, fototermal ve fotodinamik tedavi yöntemlerinde, başarılı ve geliştirilebilir olumlu etkilere sahiptir. Ayrıca nanopartiküller ve hibrit organik/altın nanopartiküller biyoteşhis ve hedeflenmiş bölgede terapi alanında büyük önem taşımaktadır. Fakat AuNP'ler tek başlarına, çeşitli fizyolojik şartlarda stabil değildir. Ayrıca bazı biyolojik membran ve zar yüzeylerine girişimleride oldukça zordur.

Bunlara ek olarak hedef hücre tanımasında etkinliği yetersizdir. Altın nanopartikül yapıların sahip olduğu olağanüstü özelliklerin sorunsuz olarak kullanılabilmesi için, altın nanopartikül yapının dış yüzeyinin canlı doku tarafından tanınabilmesi, yapının membran yüzeyden geçebilmesi, reseptörlere tutunabilmesi gerekmektedir. Bunun için altın nanopartikül yapıların, amino asitler, proteinler ve karbohidrat yapılar ile bağlanması gerekmektedir. Bu sorunların üstesinden gelebilmek amacıyla günümüzde birçok yeni glikonanopartiküler yapının tasarlanıp sentezlenmesi çalışmalarına yönelim gerçekleşmiştir. Özellikle gold nanopartiküllerin mono ve oligosakkaritlerle yapılan yüzey modifikasyonları, gold nanopartikül yapılarına hem kolloidal bir kararlılık sağlar, hem de ilaç veya genler gibi terapötik ajanların yüzeylerinin kaplanmasıyla ilaç dağılımı ve taşınması uygulamaları için kullanışlı olmalarını sağlamaktadır. Çalışma kapsamında, çeşitli aralayıcı gruplar üzerinden tiyol grubu barındıran ve altın nanapartiküllere bağlanabilecek iki yeni karbohidrat bileşiği sentezlenmiştir. Bu amaçla önce Diaseton-D-Glukoz sentezlenmiş, sonrasında bu bileşiğe 4 ve 6 karbon sayılı ucu tiyol fonksiyonel grubu içeren alkil zincirleri bağlanmıştır. Böylece tiyol fonksiyonel grupları üzerinden karbohidrat bileşikleriyle maskelenmiş altın nanopartikül bileşikleri elde etmek için uygun potansiyelli bileşikler elde edilmiştir.

Anahtar kelimeler: Altın nanopartikül, Gliko nanopartikül, Gliko altın nanopartikül

HACİMLİ BİR SCHİFF BAZI LİGANDININ ELEKTRONİK, REAKTİF VE SPEKTROSKOPİK ÖZELLİKLERİNİN YOĞUNLUK FONKSİYONELİ TEORİSİ (DFT) İLE İNCELENMESİ

THEORETICAL INVESTIGATION OF THE ELECTRONIC, REACTIVE, AND SPECTROSCOPIC PROPERTIES OF A BULKY SCHIFF BASE LIGAND VIA DENSITY FUNCTIONAL THEORY (DFT)

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Abstract
In this study, the structural and electronic properties of a highly sterically hindered 3,5-dichloro substituted Schiff base ligand ($C_{17}H_{14}Cl_4N_2O_2$) were theoretically investigated using Density Functional Theory (DFT). Quantum chemical calculations were performed in the gas phase using the ORCA software package at the B3LYP/def2-SVP level of theory, incorporating the D3BJ dispersion correction to obtain the most thermodynamically stable 3D geometry. To evaluate the chemical reactivity and stability of the synthesized molecule, the Frontier Molecular Orbitals (FMO), namely HOMO and LUMO energy levels, were calculated as -6.3067 eV and -1.7974 eV, respectively. The resulting large energy band gap (ΔE = 4.5093 eV) and high chemical hardness (η = 2.2547$ eV) strongly indicate that the molecule possesses exceptional kinetic and chemical stability, which is in perfect agreement with the experimental thermal analysis (TGA) results of the framework. Furthermore, the calculated total dipole moment of 3.4686 Debye confirms the asymmetric electron-withdrawing effect of the halogen substituents. These findings demonstrate that the highly sterically hindered ligand provides an ideal and exceptionally robust theoretical foundation for future metal coordination strategies and 1D supramolecular architectures.
Keywords: Schiff Base, Density Functional Theory (DFT), HOMO-LUMO, ORCA, Chemical Stability.

Özet
Bu çalışmada, potansiyel biyolojik ve katalitik uygulamalarıyla dikkat çeken, aşırı sterik engelli 3,5-dikloro sübstitüye bir Schiff bazı ligandının ($C_{17}H_{14}Cl_4N_2O_2$) yapısal ve elektronik özellikleri Yoğunluk Fonksiyon Teorisi (DFT) kullanılarak teorik olarak incelenmiştir. Kuantum kimyasal hesaplamalar, ORCA paket programı kullanılarak gaz fazında B3LYP/def2-SVP teori seviyesinde ve D3BJ dispersiyon düzeltmesi dahil edilerek gerçekleştirilmiş, molekülün en kararlı üç boyutlu geometrisi elde edilmiştir. Sentezlenen molekülün kimyasal reaktivitesini ve kararlılığını değerlendirmek amacıyla Sınır Moleküler Orbitaller (FMO) olan HOMO ve LUMO enerji seviyeleri sırasıyla -6.3067 eV ve -1.7974 eV olarak hesaplanmıştır. Aralarındaki enerji boşluğu (band gap, ΔE) 4.5093 eV olarak belirlenmiştir. Elde edilen bu geniş enerji boşluğu ve 2.2547 eV değerindeki yüksek kimyasal sertlik (η), molekülün kimyasal ve kinetik kararlılığının oldukça yüksek olduğunu göstermektedir; bu durum hücresel ağ yapısındaki deneysel termal analiz (TGA) sonuçlarıyla mükemmel bir uyum içindedir. Ayrıca, 3.4686 Debye olarak hesaplanan toplam dipol momenti, halojen sübstitüentlerinin asimetrik elektron çekici etkisini doğrulamaktadır. Bu bulgular, aşırı sterik engelli ligandın gelecekteki metal koordinasyon stratejileri ve 1-boyutlu supramoleküler mimariler için ideal ve son derece sağlam bir teorik temel sunduğunu kanıtlamaktadır.
Anahtar Kelimeler: Schiff Bazı, Yoğunluk Fonksiyoneli Teorisi (DFT), HOMO-LUMO, ORCA, Kimyasal Kararlılık.

STERİK ENGELLİ BİR SCHIFF BAZI LİGANDI VE NİKEL(II) KOMPLEKSİNİN KATI HAL SUPRAMOLEKÜLER ETKİLEŞİMLERİNİN KARŞILAŞTIRMALI HIRSHFELD YÜZEY ANALİZİ

COMPARATIVE HIRSHFELD SURFACE ANALYSIS OF THE SOLID-STATE SUPRAMOLECULAR INTERACTIONS OF A STERICALLY HINDERED SCHIFF BASE LIGAND AND ITS NICKEL(II) COMPLEX

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Abstract
In this study, the solid-state intermolecular interactions of a highly sterically hindered 3,5-dichloro substituted Schiff base ligand and its corresponding anhydrous Nickel(II) complex were quantitatively compared using Hirshfeld Surface Analysis. To map the spatial effects of the bulky halogen groups, which hinder the growth of suitable single crystals, on the packing geometry, the crystallographic information files (CIF) obtained from powder X-ray diffraction (PXRD) data were imported into the CrystalExplorer software. The 3D Hirshfeld surfaces of the monoclinic ($P2_1/c$) ligand and the triclinic ($P\bar{1}$) complex were generated using d_{norm} (normalized contact distance), visualizing the steric repulsions (red regions) within the supramolecular network. Furthermore, using 2D fingerprint plots, the percentage (%) contributions of the interactions (e.g., H...H, Cl...Cl, C...H) holding the crystal lattices together were calculated. The comparative analysis results quantitatively corroborate that the alteration in halogen-halogen (Cl...Cl) interactions following metal coordination is the primary factor driving the molecule into a lower-symmetry triclinic phase. This study demonstrates the success of integrating powder X-ray diffraction and Hirshfeld surface analysis in elucidating the supramolecular architecture of coordination compounds where single crystal growth is unfeasible.
Keywords: Schiff Base, Nickel(II) Complex, Hirshfeld Surface Analysis, Supramolecular Chemistry, Fingerprint Plots.

Özet
Bu çalışmada, aşırı sterik engelli 3,5-dikloro sübstitüye bir Schiff bazı ligandının ve bu liganddan sentezlenen susuz Nikel(II) kompleksinin katı hal moleküller arası etkileşimleri Hirshfeld Yüzey Analizi yöntemiyle nicel olarak karşılaştırılmıştır. Uygun boyutta tek kristal elde etmeyi zorlaştıran hacimli halojen gruplarının paketlenme üzerindeki uzaysal etkilerini haritalandırmak amacıyla, toz X-ışını kırınımı (PXRD) verilerinden elde edilen yapısal bilgi dosyaları (CIF) CrystalExplorer yazılımına aktarılmıştır. Monoklinik ($P2_1/c$) ligand ile Triklinik ($P\bar{1}$) kompleksin 3 boyutlu Hirshfeld yüzeyleri d_{norm} (normalize edilmiş temas mesafesi) kullanılarak oluşturulmuş ve supramoleküler ağdaki sterik itişmeler (kırmızı bölgeler) görselleştirilmiştir. Ayrıca, 2 boyutlu parmak izi (fingerprint) grafikleri yardımıyla kristal örgüleri bir arada tutan etkileşimlerin (H...H, Cl...Cl, C...H vb.) tüm yüzeye yüzde (%) katkıları hesaplanmıştır. Karşılaştırmalı analiz sonuçları, metal koordinasyonu sonrasında halojen-halojen (Cl...Cl) etkileşimlerindeki değişimin, molekülü daha düşük simetrili bir triklinik faza zorlayan temel faktör olduğunu nicel olarak doğrulamaktadır. Bu çalışma, X-ışını toz kırınımı ve Hirshfeld yüzey analizinin entegre kullanımının, tek kristali büyütülemeyen koordinasyon bileşiklerinin supramoleküler mimarisini aydınlatmadaki başarısını ortaya koymaktadır.
Anahtar Kelimeler: Schiff Bazı, Nikel(II) Kompleksi, Hirshfeld Yüzey Analizi, Supramoleküler Kimya, Parmak İzi (Fingerprint) Grafikleri.

OLEİK ASİT KAPLI MANYETİK NANO-KATALİZÖRÜ KULLANILARAK SODYUM BOROHİDRİT METANOLİZİNDEN YÜKSEK VERİMLİ HİDROJEN ÜRETİMİ

HIGH-YIELD HYDROGEN PRODUCTION BY SODIUM BOROHYDRIDE METHANOLYSIS USING OLEIC ACID-COATED MAGNETIC NANO-CATALYST

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ÖZET
Fosil yakıtların çevresel etkileri ve tükenme riski, yenilenebilir alternatif enerji kaynaklarının geliştirilmesini zorunlu kılmıştır. Temiz bir enerji kaynağı olan hidrojen, gelecekte enerji üretimini karbonsuzlaştırma ve fosil yakıtlara olan bağımlılığı ortadan kaldırma potansiyeline sahiptir. Bu çalışmada, $NaBH_4$ metanoliziyle hidrojen üretiminde kullanılmak üzere, ekonomik ve yüksek performanslı oleik asit kaplı manyetik nano-katalizörü birlikte çökeltme yöntemiyle başarılı bir şekilde sentezlenmiştir. Oleik asit kaplı manyetik nano-katalizörünün $NaBH_4$ metanoliziyle hidrojen üretimi, oda sıcaklığında 25 mg nano-katalizör, 200 mg $NaBH_4$ ve 10 mL metanol kullanılarak araştırıldı. Belirlenen optimum koşullardaki hidrojen üretim hızı (HGR) 17933 mL H_2/(dk·gkat) olarak hesaplanmıştır. Oleik asit kaplı manyetik nano-katalizörünün yüksek katalitik aktiviteye, ekonomik ve kolay hazırlanabilme gibi avantajlara sahip olmasıyla gelecek vaat eden bir nano-katalizör olduğunu gösterir. Ayrıca, bu manyetik nano-katalizör pahalı soy metallere alternatif olarak, sürdürülebilir ve yüksek performanslı bir çözüm sunmaktadır.
Anahtar Kelime: Manyetik nano-katalizörler, Hidrojen üretimi, Metanoliz, $NaBH_4$

ABSTRACT
The environmental impacts and depletion risk of fossil fuels have made the development of renewable alternative energy sources imperative. Hydrogen, a clean energy source, has the potential to decarbonize energy production in the future and eliminate dependence on fossil fuels. In this study, an economical and high-performance oleic acid-coated magnetic nano-catalyst was successfully synthesized by co-precipitation for use in hydrogen production by $NaBH_4$ methanollysis. Hydrogen production by $NaBH_4$ methanollysis using an oleic acid-coated magnetic nanocatalyst was investigated at room temperature using 25 mg of nano-catalyst, 200 mg of $NaBH_4$, and 10 mL of methanol. The hydrogen production rate (HGR) under the determined optimum conditions was calculated as 17933 mL H_2/(min·gcat). The high catalytic activity, economic efficiency, and ease of preparation of the oleic acid-coated magnetic nano-catalyst demonstrate its promising potential as a nano-catalyst. Furthermore, this magnetic nano-catalyst offers a sustainable and high-performance solution as an alternative to expensive precious metals.
Keywords: Magnetic nano-catalysts, Hydrogen production, Methanollysis, $NaBH_4$

THEORETICAL INSIGHTS INTO THE ELECTRONIC AND SPECTROSCOPIC PROPERTIES OF CLOTHIANIDIN

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Abstract
With the development of modern society, neonicotinoids type chemicals become indispensable with their efficiency, cost-effectiveness and systemic properties [1]. However, particularly in the last years they are classified as environmental contaminants because, these chemical and their metabolites are harmful to human health [2]. Clothianidin (CL) (1-(2-Chloro-1,3-thiazol-5-ylmethyl)-3-methyl-2-nitroguanidine) is one of the representatives of neonicotinoids with a chlorothiazole ring structure [3]. CL has been detected in the surface water with concentration higher than 38 µg/L [4]. Its long half-live and high resistance to decay make the analysis of its electronic and spectroscopic properties particularly important [4].
In the present study, electronic and spectroscopic properties of CL molecule was analyzed with the help of Density Functional Theory (DFT), and Time Dependent-Density Functional Theory (TD-DFT). Through DFT calculation M062X/6-31g(d) basis set was used. The aquatic media effects were considered using the Conductor-like Polarizable Continuum Model (C-PCM) approximation. The spectroscopic, and reactivity properties of the CL were investigated. Moreover, the aquatic media effect on the reactivity of the molecule was evaluated. DFT calculations revealed that the calculated IR, UV, and NMR spectra were in line between the experimental studies. This work provides insights into the electronic nature of CL to develop new technologies for sensing, and degradation process from environment.
Keywords: clothianidin, Density Functional Theory, neonicotinoids, reactivity

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SEED COATING WITH BACTERIA-INOCULATED BIOCHAR

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Abstract
Plant Growth-Promoting Bacteria (PGPB) plays a crucial role in sustainable agriculture, stimulating plant growth, suppressing plant pathogens, and providing an environmentally friendly alternative to chemical fertilizers. A short shelf life is one of the main challenges in the use of PGPB for seed coating. On the other hand, biochar can be regarded as an effective and environmentally sustainable carrier in seed coating with PGPB. In our study, we examined the effect of PGPB-inoculated biochar on seedling emergence and seedling growth of chili pepper seeds. The *Bacillus amybliquefaciens* TA13 and *Pseudomonas kilonensis* TA08 were used as PGPB. Two different types of biochars, which were obtained by dry- and wet-carbonization, were used as microbial carriers. For comparison purposes, chitosan was also used as a commercial carrier. Application of different coating materials were statistically significantly influenced on emergence rate and mean emergence time. It was interesting that the highest seed emergence obtained from uncoated seeds. The fact that seed coating application reduced the emergence rate could be due to inhibition of microbial strain produced some crosstalk hormonal metabolites during germination. Even though the different coating materials are not displayed statistically differences on examined seedling traits, PGPB and coating materials combination improved seedling height, root length, seedling length, stem diameter, root and stem fresh weight, and number of leaves values. Among the coating materials dry carbonization biochar treatment showed better main seedling growth observations.
Keywords: Seed coating, biochar, PGPB

AİLE İŞLETMELERİNDE DİJİTAL DÖNÜŞÜMÜN KARANLIK YÜZÜ: DİJİTALLEŞME BASKISININ DİJİTAL TÜKENMİŞLİK ÜZERİNDEKİ ETKİSİNDE KUŞAKLAR ARASI ÇATIŞMANIN ARACILIK ROLÜ

THE DARK SIDE OF DIGITAL TRANSFORMATION IN FAMILY BUSINESSES: THE MEDIATING ROLE OF INTERGENERATIONAL CONFLICT IN THE EFFECT OF DIGITALIZATION PRESSURE ON DIGITAL BURNOUT

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Özet

Küresel ekonomide giderek artan rekabet baskısı, teknolojik gelişmelerin hız kazanması ve dijital platformların iş süreçlerine entegrasyonu, işletmeleri kısa sürede köklü bir dönüşüme zorlamaktadır. Bu dönüşüm, pek çok işletme için kaçınılmaz bir zorunluluk haline gelmiş ve bununla birlikte örgütsel, psikolojik ve kültürel baskılar giderek daha fazla oluşmaya başlamıştır. Bu durum aile işletmelerinde sadece teknolojik bir dönüşüm değil, köklü gelenekleri, kuşaklar arası güç dengelerini ve örgütsel kimliği tehdit eden karmaşık bir süreç olmaktadır. Bu çalışma, aile işletmelerinde dijitalleşme baskısının dijital tükenmişlik üzerindeki etkisinde kuşaklar arası çatışmanın aracılık rolünü incelemeyi amaçlamaktadır. Dijital dönüşüm süreçleri aile işletmeleri açısından hem bir fırsat hem de örgütsel dinamikleri tehdit eden karanlık bir yüz olmaktadır. Birden fazla kuşağın aynı anda yönetim kademelerinde yer aldığı bu işletmelerde, farklı kuşakların dijital teknolojilere yönelik tutum, değer ve beklentileri arasındaki derin uçurumlar, örgütsel çatışmayı güçlendirmekte ve çalışanları dijital tükenmişliğe itmektedir. Araştırmada nicel analiz yöntemi kullanılmış ve çalışmanın örneklemini, Gaziantep ilinde faaliyet gösteren aile işletmelerinden 1. kuşak kurucu/yöneticiler (45), 2. kuşak yöneticiler (62), profesyoneller (71) ve yönetim kurulu üyeleri (25) olmak üzere toplam 203 kişi oluşturmaktadır. Elde edilen veriler doğrulayıcı faktör analizi (DFA), yapısal model ise AMOS 26.0 yazılımı kullanılarak yapısal eşitlik modellemesi (YEM) ile test edilmiştir. Aracılık etkisinin sınanmasında ise Bootstrap yöntemi uygulanmıştır. Çalışmada dijitalleşme baskısının dijital tükenmişliği hem doğrudan hem de kuşaklar arası çatışma üzerinden dolaylı olarak anlamlı biçimde etkilediği sonucuna varılmıştır. Ayrıca kuşaklararası çatışmanın aracılık etkisinin 1. kuşak yöneticilerde anlamlı ölçüde daha güçlü olduğu görülmüştür.

Anahtar Kelimeler: Dijital Tükenmişlik, Dijitalleşme Baskısı, Kuşaklar Arası Çatışma, Aile İşletmeleri, Dijital Dönüşüm

Abstract

The intensifying competitive pressure in the global economy, the accelerating pace of technological advancements, and the integration of digital platforms into business processes are compelling organizations to undergo radical transformation within a short period of time. This transformation has become an inevitable necessity for many businesses, giving rise to growing organizational, psychological, and cultural pressures. In the context of family businesses, this process represents not merely a technological shift but a complex transition that threatens deeply rooted traditions, intergenerational power balances, and organizational identity. This study aims to examine the mediating role of intergenerational conflict in the effect of digitalization pressure on digital burnout in family businesses. Digital transformation processes constitute both an opportunity and a dark side that threatens organizational dynamics for family firms. In these enterprises, where multiple generations simultaneously occupy management positions, the profound divergences in attitudes, values, and expectations toward digital technologies among different generations reinforce organizational conflict and push employees toward digital burnout. A quantitative research method was employed in the study, and the sample consists of 203 individuals from family businesses operating in the province of Gaziantep, comprising first-generation founders/executives (45), second-generation managers (62), professionals (71), and board members (25). The data obtained were tested through confirmatory factor analysis (CFA), while the structural model was analyzed using structural equation modeling (SEM) with AMOS 26.0 software. The Bootstrap method was applied to test the mediation effect.

The study concludes that digitalization pressure significantly affects digital burnout both directly and indirectly through intergenerational conflict. Furthermore, the mediating effect of intergenerational conflict was found to be significantly stronger among first-generation executives.
Keywords: Digital Burnout, Digitalization Pressure, Intergenerational Conflict, Family Businesses, Digital Transformation

ACTUAL PROBLEMS OF SMALL AND MEDIUM-SIZED BUSINESSES IN THE CONTEXT OF GLOBALIZATION

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ABSRACT
The development of the world economy at the modern stage is characterized by a high pace of globalization. The process of globalization implies the internationalization of social, economic, political and cultural processes. Globalization of the world economy leads to a change in the nature of the production process. Currently, globalization is characterized by the following features: intensive development of the technical and economic potential of countries; deepening of the international division of Labor; change in quality indicators in the financial market; high pace of development of transnational corporations; development of telecommunication facilities. In the global economy, small and medium-sized enterprises (SMEs) play one of the key roles in ensuring sustainable economic growth and increasing employment. SMEs contribute to the innovation and commercialization of new technologies, actively participate in the development of socially significant sectors of the economy. However, despite their significant contribution, small and medium-sized businesses face a number of serious problems, such as limited financial resources, a high tax burden and a complex regulatory and legal environment. In many countries, various measures of state support are being introduced aimed at strengthening the positions of SMEs, including preferential lending, tax benefits and export support. Considerable attention is paid to the development of this sector in the Republic of Azerbaijan, which contributes to the gradual strengthening of its role in the economy through the application of international experience and active state support in our country. Continuing to explore the mechanisms of adaptation of small and medium-sized businesses to changing market conditions in order to increase their competitiveness in the international arena is one of the extremely important issues. The article analyzes the role of small and medium-sized businesses in the economic development of countries, challenges and opportunities for SMEs in the context of globalization, strategies for adapting SMEs to the conditions of the global economy.
Keywords: Small and medium-sized enterprises, Globalization, Global economy, The number of micro, small and medium-sized enterprises in operation, the number of newly registered micro, small and medium-sized enterprises, the number of liquidated micro, small and medium-sized enterprises, the main macroeconomic indicators of micro, small and medium-sized enterprises.

HOMO ECONOMİCUS'UN ARKEOLOJİSİ: İNSANIN KÖKENİ

THE ARCHAEOLOGY OF HOMO ECONOMICUS: THE ORIGINS OF HUMANITY

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Özet

Bu bildiri, modern iktisadi düşüncenin merkezinde yer alan ve insan doğasının evrensel bir gerçeği olarak sunulan *Homo economicus* (ekonomik insan) kavramının felsefi ve tarihsel kökenlerini kazılamayı amaçlamaktadır. "Homo Economicus'un Arkeolojisi: İnsanın Kökeni" başlığını taşıyan bu çalışma; rasyonel, bencil ve sürekli fayda maksimizasyonu peşinde koşan sınırsız insan modelinin ontolojik bir veri olmadığını, aksine Erken Modern dönemde inşa edilmiş ideolojik bir kurgu olduğunu ileri sürmektedir.

Çalışma, Aristotelesyen *oikonomia* geleneği ile Orta Çağ Skolastik düşüncesindeki "sınırlandırılmış ahlaki fail" (Demo Varlık) tasavvurundan, modern piyasa rasyonalitesine geçişte yaşanan ontolojik kırılmayı analiz etmektedir. İnsanın fiziksel sınırları (balçık) ile doyumsuz arzuları (ruh) arasındaki dengeyi sağlayan "akıl", bu tarihsel süreçte ahlaki işlevini yitirerek salt çıkar hesaplayan araçsal bir mekanizmaya indirgenmiştir. Locke'un mülkiyet teorisinde paraya atfettiği çürümezlik üzerinden sınır tanımaz servet birikimine felsefi onay vermesi; Mandeville ve Adam Smith hattında insanın doyumsuz "tutkularının" meşrulaştırılarak rasyonel "çıkarlara" dönüştürülmesi ve ahlaki sorumluluğun *Görünmez El*'e devredilmesi, bu arkeolojik kazının temel duraklarını oluşturmaktadır.

Bildiride, kullanım değerinin yerini salt değişim değerinin, kendine yeterlilik (*autarkeia*) ilkesinin yerini ise sınırsız sermaye birikimi (*chrematistike*) mantığının almasıyla insanın kendi teleolojisinden ve yaşam alanından (*demo habitat*) nasıl koparıldığı tartışılmaktadır. Sonuç olarak bu araştırma, *Homo economicus*'un insanın ontolojik veya tarihsel kökeni olmadığını; ahlaktan, toplumsal aidiyetten ve ekolojik kısıtlardan bütünüyle yalıtılmış bir metalaşma projesinin nihai ürünü olduğunu ortaya koymaktadır. İnsanın gerçek kökenine inmek, fiktif bir sonsuzluk illüzyonuna karşı "Demo Varlık" gerçekliğini ve sınır bilincini yeniden hatırlamayı zorunlu kılmaktadır.

Anahtar Kelimeler: Homo Economicus, Demo Varlık, Adam Smith, Ontolojik Kırılma, Chrematistike.

Abstract

This paper aims to excavate the philosophical and historical roots of the concept of *Homo economicus* (economic man), which lies at the center of modern economic thought and is presented as a universal truth of human nature. Entitled "The Archaeology of Homo Economicus: The Origins of Humanity," this study argues that the limitless human model—rational, selfish, and constantly in pursuit of utility maximization—is not an ontological given, but rather an ideological construct forged during the Early Modern period.

The paper analyzes the ontological rupture experienced during the transition from the Aristotelian *oikonomia* tradition and the medieval Scholastic vision of the "bounded moral agent" (Demo Being) to modern market rationality. "Reason," which once provided the balance between the physical limits of the human (clay) and their insatiable desires (soul), lost its moral function during this historical process, being reduced to an instrumental mechanism that merely calculates self-interest. The main milestones of this archaeological excavation include Locke's philosophical endorsement of limitless wealth accumulation through the incorruptibility he attributed to money in his property theory; the legitimation and transformation of human's insatiable "passions" into rational "interests" along the Mandeville-Adam Smith trajectory; and the final delegation of moral responsibility to the *Invisible Hand*.

The paper discusses how humanity was severed from its own teleology and living space (*demo habitat*) as use value was replaced by pure exchange value, and the principle of self-sufficiency (*autarkeia*) was substituted by the logic of limitless capital accumulation (*chrematistike*). Ultimately, this research reveals that *Homo economicus* is neither the ontological nor the historical origin of humanity; rather, it is the final product of a commodification project utterly isolated from morality, social belonging, and ecological constraints. Descending to the true origins of humanity necessitates recalling the reality of the "Demo Being" and the consciousness of limits against a fictitious illusion of infinity.

Keywords: Homo Economicus, Demo Being, Adam Smith, Ontological Rupture, Chrematistike.

ERGAN DAĞI KIŞ SPORLARI VE DOĞA TURİZM MERKEZİ'NİN TÜRKİYE KIŞ TURİZMİNDEKİ YERİ VE DÖRT MEVSİM TURİZM POTANSİYELİNİN DEĞERLENDİRİLMESİ

ASSESSING THE ROLE OF THE ERGAN MOUNTAIN WINTER SPORTS AND NATURE TOURISM CENTER IN TURKEY'S WINTER TOURISM AND ITS POTENTIAL FOR YEAR-ROUND TOURISM DEVELOPMENT

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Abstract
Winter sports tourism is one of the special-interest tourism sectors that generates substantial economic value and contributes significantly to regional development. Globally, ski tourism reached its highest visitor volume in history during the 2024–2025 season, recording approximately 399 million skier-days worldwide (Vanat, 2025). Although Türkiye possesses considerable potential for winter tourism owing to its mountainous topography, prolonged snow cover, and favorable climatic conditions, a significant number of its ski resorts continue to operate below their full capacity (Türkdoğdu, 2010; Demiroğlu, 2019). This study evaluates the geographical, climatic, infrastructural, and institutional characteristics of the Ergan Mountain Winter Sports and Nature Tourism Center, located at an altitude of approximately 3,278 meters on the Munzur Mountain Range within the borders of Erzincan Province, and examines its contribution to Turkey's winter tourism sector. A qualitative research approach was adopted, drawing upon literature review, official institutional reports, field surveys, drone-assisted observations, and direct on-site observations. Within this framework, the destination's physical geographical features, ski slopes, transportation facilities, recreational areas, and tourism infrastructure were examined in detail, and the findings were comparatively assessed with other prominent ski destinations in Türkiye. The findings reveal that Ergan Mountain has emerged as one of Türkiye's rapidly developing ski destinations, characterized by nearly 50 kilometers of ski slopes, high-capacity cable car and chairlift systems, and wide, safe skiing areas. The destination gained international recognition by hosting international ski mountaineering competitions in 2013 and 2016, as well as the Ski Mountaineering World Cup organized by the International Ski Mountaineering Federation (ISMF) in 2017. Furthermore, hosting the World Downhill Skateboarding Championship (WDSC) 2026, held between 5 and 7 June 2026, demonstrates that Ergan Mountain has become an internationally recognized destination not only for winter sports but also for extreme sports and summer recreational activities. In addition, national skiing competitions, snowboarding events, and various sports organizations organized in recent years have further strengthened the region's sports tourism identity. The destination's ability to attract approximately 1.9 million visitors during the 2024–2025 season highlights its growing significance within Turkey's winter tourism industry. Beyond its winter tourism function, Ergan Mountain possesses substantial potential to evolve into a year-round tourism destination. During the summer season, activities such as trekking, mountain biking, paragliding, camping and caravanning, nature photography, botanical observation, plateau tourism, rock climbing, orienteering, trail running, zipline activities, and adventure parks present significant opportunities for tourism diversification. Moreover, the establishment of integrated tourism corridors connecting Ergan Mountain with nearby attractions, including the Karasu Basin, renowned for rafting activities, Girlevik Waterfall, Ekşisu Recreation Area, and the Kemaliye Dark Canyon, could significantly enhance the overall attractiveness of the region. Such an integrated tourism strategy would contribute to distributing visitor demand throughout the year and increasing tourism revenues in a sustainable manner. In conclusion, Ergan Mountain possesses considerable potential to become one of the leading tourism destinations in Eastern Anatolia due to its natural resources, sports infrastructure, and accessibility advantages. In addition to hosting international ski events, organizing summer sports events such as the WDSC 2026 World Downhill Skateboarding Championship further reinforces its identity as a four-season tourism destination. However, in order to fully realize this potential, it is essential to increase accommodation capacity, strengthen international marketing and promotional activities, adopt sustainable destination management practices, and develop effective climate change

adaptation policies. Investments in these areas are expected to enhance the competitiveness of Ergan Mountain while contributing to regional development and the long-term sustainable growth of Turkey's winter tourism sector.

Keywords: Winter Tourism, Ski Resorts, Ergan Mountain, Erzincan, Sustainable Tourism, Four-Season Tourism, Sports Tourism.

Özet

Kış sporları turizmi, yüksek ekonomik katma değer üreten ve destinasyonların bölgesel kalkınmasına önemli katkılar sağlayan özel ilgi turizmi türlerinden biridir. Küresel ölçekte kayak turizmi, 2024–2025 sezonunda yaklaşık 399 milyon kayakçı-gün ile tarihinin en yüksek ziyaretçi sayısına ulaşmıştır (Vanat, 2025). Türkiye ise sahip olduğu yüksek dağlık alanlar, uzun süreli kar örtüsü ve uygun iklim koşulları sayesinde kış turizmi açısından önemli bir potansiyele sahip olmakla birlikte, mevcut kayak merkezlerinin önemli bir bölümü kapasitesinin altında faaliyet göstermektedir (Türkdoğdu, 2010; Demiroğlu, 2019). Bu çalışmada, Erzincan ili sınırları içerisinde Munzur Sıradağları üzerinde yaklaşık 3.278 metre yükseltide konumlanan Ergan Dağı Kış Sporları ve Doğa Turizm Merkezi'nin kış sporları turizmi kapsamındaki coğrafi, iklimsel, altyapısal ve kurumsal özellikleri değerlendirilmiş, Türkiye kayak turizmine sağladığı katkılar analiz edilmiştir. Araştırmada nitel araştırma yöntemi benimsenmiş; literatür incelemesi, resmi kurum raporları, arazi çalışmaları, drone destekli gözlemler ve sahada gerçekleştirilen doğrudan gözlem yöntemlerinden yararlanılmıştır. Bu kapsamda merkezin fiziksel coğrafya özellikleri, pist yapısı, ulaşım olanakları, rekreasyon alanları ve turizm altyapısı yerinde incelenmiş; elde edilen bulgular Türkiye'nin önde gelen kayak merkezleriyle karşılaştırmalı olarak değerlendirilmiştir. Araştırma bulguları, Ergan Dağı'nın yaklaşık 50 kilometreyi bulan pist uzunluğu, yüksek taşıma kapasiteli teleferik ve telesiyej sistemleri, geniş ve güvenli pist yapısı ile Türkiye'nin yükselen kayak destinasyonlarından biri olduğunu göstermektedir. Merkez, 2013 ve 2016 yıllarında uluslararası dağ kayağı yarışmalarına, 2017 yılında ise Uluslararası Dağ Kayağı Federasyonu (ISMF) tarafından düzenlenen Dağ Kayağı Dünya Kupası organizasyonuna ev sahipliği yaparak uluslararası ölçekte tanınırlık kazanmıştır. Bunun yanı sıra 5–7 Haziran 2026 tarihlerinde gerçekleştirilen WDSC 2026 Dünya Kaykay İniş Şampiyonası'na ev sahipliği yapması, Ergan Dağı'nın yalnızca kış sporları açısından değil, ekstrem sporlar ve yaz dönemi rekreasyon faaliyetleri bakımından da uluslararası düzeyde tercih edilen bir destinasyon hâline geldiğini ortaya koymaktadır. Son yıllarda düzenlenen ulusal kayak yarışları, snowboard etkinlikleri ve farklı spor organizasyonları da bölgenin spor turizmi kimliğini güçlendirmektedir. 2024–2025 sezonunda yaklaşık 1,9 milyon ziyaretçiyi ağırlamış olması, merkezin Türkiye kış turizmi içerisindeki öneminin giderek arttığını göstermektedir.

Bununla birlikte Ergan Dağı'nın yalnızca kış sezonuna bağlı bir destinasyon olmaktan çıkarılarak dört mevsim turizm merkezi hâline dönüştürülmesi mümkündür. Yaz döneminde trekking, dağ bisikleti, yamaç paraşütü, kamp-karavan turizmi, doğa fotoğrafçılığı, botanik gözlemciliği, yayla turizmi, kaya tırmanışı, oryantiring, trail running (dağ koşusu), zipline ve macera parkurları gibi faaliyetlerin geliştirilmesi önemli fırsatlar sunmaktadır. Ayrıca Erzincan'ın rafting potansiyeliyle öne çıkan Karasu Havzası, Girlevik Şelalesi, Ekşisu Mesire Alanı ve Kemaliye Karanlık Kanyon destinasyonlarıyla bütünleşik turizm koridorlarının oluşturulması, bölgenin turistik çekiciliğini artırabilecek stratejik uygulamalar arasında yer almaktadır. Bu yaklaşım, ziyaretçi hareketliliğinin yıl geneline yayılmasına ve turizm gelirlerinin sürdürülebilir şekilde artırılmasına katkı sağlayacaktır.

Sonuç olarak Ergan Dağı, sahip olduğu doğal kaynaklar, spor altyapısı ve ulaşım avantajlarıyla Doğu Anadolu Bölgesi'nin önemli turizm merkezlerinden biri olma potansiyeline sahiptir. Uluslararası kayak organizasyonlarının yanı sıra WDSC 2026 Dünya Kaykay İniş Şampiyonası gibi yaz dönemi spor etkinliklerine ev sahipliği yapması, merkezin dört mevsim turizm destinasyonu kimliğini güçlendirmektedir. Ancak bu potansiyelin etkin şekilde değerlendirilebilmesi için konaklama kapasitesinin artırılması, uluslararası tanıtım ve pazarlama faaliyetlerinin güçlendirilmesi, sürdürülebilir destinasyon yönetimi anlayışının benimsenmesi ve iklim değişikliğine uyum politikalarının geliştirilmesi gerekmektedir. Bu doğrultuda gerçekleştirilecek yatırımların Ergan Dağı'nın rekabet gücünü artırarak bölgesel kalkınmaya ve Türkiye kış turizmine uzun vadeli katkılar sağlayacağı değerlendirilmektedir.

Anahtar kelimeler: Kış Turizmi, Kayak Merkezleri, Ergan Dağı, Erzincan, Sürdürülebilir Turizm, Dört Mevsim Turizm, Spor Turizmi.

MÜŞTERİ İLİŞKİLERİ YÖNETİMİ SÜREÇLERİNİN DEĞERLENDİRİLMESİ: TELEKOMÜNİKASYON SEKTÖRÜNDE BİR ARAŞTIRMA

EVALUATION OF CUSTOMER RELATIONSHIP MANAGEMENT PROCESSES: A STUDY IN THE TELECOMMUNICATIONS INDUSTRY

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Abstract
Digital transformation and increasing competitive pressures have made the effectiveness of Customer Relationship Management (CRM) processes a strategic priority in the telecommunications industry. Call centers, in particular, represent one of the primary touchpoints shaping customer experience, and performance indicators such as First Contact Resolution (FCR), escalation management, and resolution time play a critical role in service quality. This study aims to evaluate the effectiveness of CRM processes in the call center operations of a telecommunications company using statistical methods. The research analyzes a dataset consisting of 2,500 call records collected between January and March 2026. Service category, call duration, initially assigned department, and daily call volume were considered as independent variables, while First Contact Resolution (FCR) rate, escalation status, and resolution time were examined as dependent variables. Chi-square analysis, logistic regression, and analysis of variance (ANOVA) were applied to test six main hypotheses. The findings indicate that service category has a significant effect on the FCR rate, while longer call durations reduce the likelihood of resolving customer issues at the first contact. In addition, statistically significant differences were identified among departments in terms of both FCR rates and resolution times. However, daily call volume was found to have no significant effect on either call duration or escalation rates. The results suggest that strengthening CRM data infrastructure, implementing department-specific training programs, and developing dynamic escalation mechanisms can contribute to improvements in customer experience and operational performance.
Keywords: Customer Relationship Management, CRM, Call Center, Telecommunications Industry.

Özet
Dijital dönüşüm ve artan rekabet koşulları, telekomünikasyon sektöründe müşteri ilişkileri yönetimi (MİY) süreçlerinin etkinliğini stratejik bir öncelik haline getirmiştir. Özellikle çağrı merkezleri, müşteri deneyiminin şekillendiği temel temas noktalarından biri olup İlk Temasta Çözüm (İTÇ) oranı, eskalasyon yönetimi ve çözüm süresi gibi performans göstergeleri hizmet kalitesi açısından kritik önem taşımaktadır. Bu çalışma, telekomünikasyon sektöründe faaliyet gösteren bir işletmenin çağrı merkezi operasyonlarında MİY süreçlerinin etkinliğini istatistiksel yöntemlerle değerlendirmeyi amaçlamaktadır. Araştırma kapsamında, Ocak–Mart 2026 dönemine ait 2.500 çağrı kaydından oluşan veri seti analiz edilmiştir. Hizmet kategorisi, çağrı süresi, ilk atanan birim ve günlük çağrı yoğunluğu bağımsız değişkenler olarak ele alınırken; İlk Temasta Çözüm (İTÇ) oranı, eskalasyon durumu ve çözüm süresi bağımlı değişkenler olarak incelenmiştir. Veriler üzerinde, Ki-kare analizi, lojistik regresyon ve varyans analizi (ANOVA) yöntemleri uygulanarak altı temel hipotez test edilmiştir. Analiz sonuçları, hizmet kategorisinin İTÇ oranı üzerinde anlamlı bir etkiye sahip olduğunu, çağrı süresinin artmasının ise ilk temasta çözüm olasılığını azalttığını göstermektedir. Ayrıca farklı birimler arasında hem İTÇ oranları hem de çözüm süreleri bakımından istatistiksel olarak anlamlı farklılıklar tespit edilmiştir. Buna karşılık günlük çağrı yoğunluğunun çağrı süresi ve eskalasyon oranı üzerinde anlamlı bir etkisi bulunmamıştır.

Elde edilen bulgular, CRM veri altyapısının güçlendirilmesi, birim bazlı eğitim programlarının geliştirilmesi ve dinamik eskalasyon mekanizmalarının uygulanması yoluyla müşteri deneyimi ve operasyonel performansın iyileştirilebileceğini ortaya koymaktadır.
Anahtar kelimeler: Müşteri İlişkileri Yönetimi, CRM, Çağrı Merkezi, Telekomünikasyon Sektörü.

PYTHAGOREAN FUZZY WEIGHTED AVERAGING OF CHURN DISCOURSE: HESITANCY-AWARE RETENTION-CRITERIA WEIGHTS FROM CUSTOMER X POSTS IN TÜRKİYE

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Abstract
Mobile-operator markets in Türkiye are saturated and intensely competitive, so understanding which factors drive customers to stay or switch is central to retention strategy. Existing churn research weights such determinants through surveys or internal billing models, both of which are costly and lag behind fast-moving customer sentiment. This study introduces a novel, reproducible framework that derives fuzzy linguistic criteria weights for retention directly from public, traceable customer discourse on the platform X. A corpus of 111 public posts, retrieved with thirty-eight Turkish and English search expressions, was thematically coded into nine churn-retention criteria. Because customer voice is polarised, complaint versus willingness to stay, and many engagement metrics are only partly visible, each criterion's importance is modelled as a Pythagorean fuzzy number whose membership encodes positive salience, whose non-membership encodes relative weakness and whose hesitancy captures metric invisibility and ambivalence. Three salience signals, posting volume, engagement and reach, are normalised, mapped onto a seven-term Pythagorean fuzzy linguistic scale, aggregated with the Pythagorean fuzzy weighted averaging operator, scored and normalised into a crisp weight vector. Customer service and complaint resolution receives the largest weight (0.211), followed by billing accuracy and disputes (0.188), network coverage (0.161) and number-portability friction (0.122), whereas forced upselling and loyalty unfairness rank lowest by attention even though they recur as switching triggers. The contribution is threefold: to the best of our knowledge it is the first application of this pipeline to Turkish mobile-operator retention discourse; it gives hesitancy an operational, data-driven meaning; and it offers a transparent, continuously updatable alternative to survey-based weighting.
Keywords: Pythagorean fuzzy sets; customer churn; criteria weighting; social-media analytics; mobile telecommunications; retention

TRIANGULAR FUZZY LINGUISTIC AGGREGATION OF LITERATURE EVIDENCE: WEIGHTING HIGH-SCHOOL SELECTION CRITERIA FROM THE SCHOOL-CHOICE LITERATURE FOR TÜRKİYE'S LGS

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Abstract
Choosing a high school after Türkiye's centralised entrance examination (Liselere Geçiş Sınavı, LGS) is a multi-criteria decision, and the weights attached to competing criteria shape the outcome. Conventional multi-criteria decision-making weights criteria through expert pairwise comparison or surveys; both are subjective, costly and panel-dependent, and parents struggle to introspect the weights they actually apply. This study proposes and demonstrates a framework that derives criteria weights from the accumulated empirical school-choice literature rather than from an expert panel. From a corpus of twenty empirical studies of parental school-choice determinants, nine criteria were identified, and for each criterion three literature-salience signals were computed: coverage (how many studies report it), prominence (whether it is reported as a primary determinant) and citation-weighted influence. The signals were normalised, mapped onto a seven-term linguistic scale, encoded as triangular fuzzy numbers, aggregated through an importance-weighted fuzzy mean, defuzzified by the centroid method and normalised into a crisp weight vector. The literature assigns the greatest weight to academic quality and school performance (0.328) and to school reputation, type and prestige (0.214), followed by proximity (0.131), cost (0.101) and value-based considerations (0.097); teacher quality, facilities, safety and curriculum receive less aggregate emphasis. The ranking is robust to the normalisation rule and the signal weights, with an invariant top three and a Spearman rank correlation of 0.933. The contribution is an evidence-synthesis route to fuzzy criteria weights that is reproducible and free of expert elicitation and, to the best of our knowledge, the first such application to high-school selection under Türkiye's LGS.
Keywords: fuzzy multi-criteria decision-making; triangular fuzzy numbers; criteria weighting; evidence synthesis; literature review; school choice; LGS

CLIMATE-RESILIENT MINE WATER MANAGEMENT: INTEGRATING RISK GOVERNANCE, REUSE, AND ENVIRONMENTAL PROTECTION

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Abstract
Water management is one of the most critical sustainability challenges facing the mining sector, particularly under conditions of climate variability, increasing water scarcity, extreme rainfall, and stricter environmental regulation. Mines interact with water across multiple operational stages, including dewatering, mineral processing, dust suppression, tailings management, acid mine drainage control, and post-closure rehabilitation. Climate change intensifies these challenges by altering rainfall patterns, increasing flood risks, reducing water availability, and placing greater pressure on communities and ecosystems that depend on shared water resources. This conceptual paper develops a climate-resilient mine water management framework that integrates risk governance, water reuse, monitoring, treatment, and environmental protection. The framework emphasizes the need to move from reactive compliance-based water management toward adaptive, anticipatory, and systems-oriented planning. It discusses practical strategies such as closed-loop water circulation, real-time water quality monitoring, nature-based treatment systems, risk-based tailings water control, and stakeholder-informed watershed governance. The paper also highlights the importance of aligning engineering decisions with social and ecological responsibilities, especially in water-stressed regions. Its main contribution is to provide a structured perspective for linking mine water management with climate resilience and sustainable resource governance. The paper concludes that future mining operations must treat water not only as an operational input, but also as a strategic environmental asset requiring protection, accountability, and long-term stewardship.
Keywords: Mine water management; Climate resilience; Water reuse; Acid mine drainage; Environmental protection; Risk governance.

SYNTHESIS AND BIOLOGICAL EVALUATION OF HEMOCOMPATIBLE 6-AZAINDOLE PYRIDINIUM SALTS

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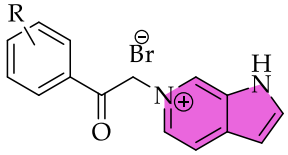
ABSTRACT
The growing impact of antimicrobial resistance and cancer-related mortality highlights the urgent need for new molecular scaffolds with improved biological activity and favorable pharmacological profiles [1,2]. In this context, nitrogen-containing fused heterocycles, represent valuable structures in medicinal chemistry due to their broad spectrum of biological activities, favourable pharmacokinetic properties, and ability to interact selectively with diverse biological targets [3].
Among nitrogen-containing fused heterocycles, azaindoles have attracted considerable interest due to their privileged scaffold and their close bioisosteric relationship with indole [4]. Despite their considerable potential, azaindoles have been less explored than their indole counterparts, largely due to synthetic challenges associated with the construction and functionalization of the azaindole scaffold. Despite the growing interest in azaindole-containing compounds, 6-azaindole has received relatively limited attention, particularly in the form of pyridinium derivatives. Given the well-known biological relevance of cationic N-heterocycles, the synthesis and biological evaluation of new 6-azaindole-derived quaternary salts represent a promising strategy for the development of structurally distinct compounds with potential therapeutic value, particularly in the fields of cancer and infectious diseases.



In this context, herein, we report the synthesis, structural characterization (NMR, IR) and biological evaluation (*in silico* ADMET and *in vitro* antimicrobial and anticancer) of a new series of 6-azaindole based pyridinium salts derivatives.
Keywords: 6-azaindole pyridinium salts, antimicrobial, anticancer, ADMET.

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BIMETALLIC FE-CO CO-DOPED ZNO NANOCATALYSTS: SYNTHESIS, CHARACTERIZATION, AND ENHANCED PHOTOCATALYTIC DEGRADATION OF METHYL ORANGE

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Abstract
In this study, bimetallic (Fe, Co) co-doped ZnO (Fe-Co/ZnO) nanocatalyst was successfully synthesized via co-precipitation method, targeting to enhance the photocatalytic degradation of methyl orange (MO) under visible light irradiation. The structural, morphological, and optical properties of the prepared catalysts were comprehensively characterized using X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Spectroscopy (EDX), Fourier Transform Infra-red spectroscopy (FTIR), UV-Visible spectroscopy, BET, and PL. The XRD analysis confirmed the synthesis of a hexagonal wurtzite structure with significant crystalline changes due to the successful integration of Fe and Co ions into the ZnO lattice. UV-Vis results demonstrated a significant reduction in the band gap of ZnO from its pure form, increasing visible light harvesting efficiency due to Fe/Co co-doping, which inhibits the electron-hole recombination rate. Photocatalytic evaluations revealed that Fe-Co/ZnO showed superior degradation efficiencies compared to pure ZnO, with an optimized doping concentration achieving up to **96%** degradation of methyl orange within a short time under visible light. The superior performance is attributed to the synergistic effect of Fe and Co ions, which act as effective electron traps, thereby enhancing photo-induced charge separation. These findings indicate that Fe-Co/ZnO nanostructures act as high-efficiency, stable catalysts for wastewater remediation.
Keywords: Fe-Co co-doped ZnO, Photocatalysis, Methyl orange, Co-precipitation, Visible light, dye degradation.

ARTIFICIAL INTELLIGENCE IN MODERN SOFTWARE DEVELOPMENT FOR INDUSTRIAL APPLICATIONS

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Abstract
The advent of Artificial Intelligence (AI) has significantly influenced modern software development through advanced and adaptive intelligent software systems aimed at improving industries' efficiency and innovations. The application of AI in software development entails the shift from conventional rule-based programming to learning-based and prediction-focused paradigms. The following paper will examine the role played by AI in software development in modern times by specifically analyzing how it has been used in the industrial environment, particularly in manufacturing, predictive maintenance, quality assurance, logistics, and decision-making software. Machine learning, deep learning, natural language processing, and computer vision are among the common AI algorithms currently incorporated into software systems to achieve enhanced performance, cost-efficiency, and better decision-making abilities. In industry settings, AI-based software systems have made possible predictive analysis of equipment breakdowns, intelligent monitoring of processes and production lines, and process optimization to achieve greater productivity and lesser downtimes. The paper further considers the combination of AI with emerging technology trends such as cloud computing, IoT, and edge computing in industrial software development. Some of the key challenges associated with integrating AI in software include quality of data, system integration, security and cybersecurity issues, and lack of skilled workforce. Moving forward, developments will be centered around explainable AI, scalable architecture, and domain-specific intelligent software systems. In general, the development of software using AI is a key factor behind Industry 4.0.
Keywords: Artificial Intelligence; Software Development; Industrial Applications; Machine Learning; Industry 4.0; Predictive Maintenance; Intelligent Systems; Automation; Deep Learning; Decision Support Systems

HYBRID BIOMASS-SOLAR SYSTEMS WITH ENERGY STORAGE: A SYSTEMATIC REVIEW OF TECHNOLOGIES, CONTROL STRATEGIES, AND SUSTAINABILITY OUTCOMES

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Abstract
The massive integration of intermittent renewable energies into power grids creates critical challenges for stability and supply continuity. Hybrid biomass-solar systems coupled with energy storage offer a compelling solution by combining a steady, dispatchable resource (biomass) with an abundant but variable one (solar). This paper delivers a systematic literature review of 50 Scopus-indexed conference papers published between 2024 and 2026, exploring energy storage integration within these hybrid configurations. The analysis investigates three core dimensions: (i) deployed storage technologies (lithium-ion batteries, hydrogen, compressed air, flywheels, and hybrid systems), (ii) control and energy management strategies (model predictive control, reinforcement learning, MILP, and metaheuristics), and (iii) multi-dimensional sustainability impacts (economic, social, environmental, and technological). Findings show that Battery Energy Storage Systems (BESS) dominate the corpus (45%), followed by hybrid battery-supercapacitor systems (20%) and hydrogen storage (15%). Disciplinary mapping reveals a heavily technical landscape, with energy (30.2%), engineering (27.6%), mathematics (17.0%), and computer science (14.0%) representing nearly 89% of the literature, leaving social (1.7%) and environmental (1.2%) sciences largely overlooked. Finally, we highlight major bottlenecks—such as high capital expenditures, complex sizing optimization, battery aging modeling, and a severe lack of field validation (under 10% of studies). To address these gaps, this review introduces a comprehensive conceptual framework designed to guide future research toward resilient, cost-effective, and sustainable off-grid electrification in developing areas.
Keywords: Hybrid biomass-solar systems; Energy storage; Lithium-ion batteries; Hydrogen storage; Energy management systems; Control strategies; Optimization algorithms; Grid stability; Sustainability; Systematic literature review

THE TOPSIS MULTICRITERIA METHOD FOR THE ANALYSIS OF INDUSTRIAL SYSTEM FAILURES

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Abstract
Industrial maintenance is a strategic factor in the overall performance of industrial systems; it plays a vital role in ensuring the safe operation of production equipment, thereby reducing unplanned downtime and, as a result, optimising maintenance costs.
Our work is based on multi-criteria analysis as a decision-making tool. The aim is to consider several criteria simultaneously (safety, reliability, cost, criticality,....) in order to prioritise maintenance requirements according to their importance, particularly in an environment where resources are limited and constraints are numerous.
The study focused on prioritising maintenance activities on a 15-MJ04-GT gas turbine, thereby ensuring better management of potential failures. The system in question is installed in a liquefied natural gas (LNG) production plant. We have, in fact, undertaken an in-depth analysis of the faults affecting the system, using a TOPSIS multi-criteria approach combined with quantitative analysis methods.
In this context, we can mention the Ishikawa method, which is used to establish a clear hierarchy of the most critical failures. The ABC method has also been used; it aims to identify the failures that represent a priority based on their impact on the availability and performance of the system under study. The criteria considered in the study are: risk, consequences, cost and system downtime. Once the data matrix had been established, along with the standardised and weighted attribute matrix, a calculation was carried out to determine the most favourable and least favourable outcomes.
The guidelines in question focus both on maximising safety through risk management and the mitigation of the consequences of potential failures, and on minimising downtime and the cost of gas turbine maintenance. This calculation made it possible to assess how far each possible alternative deviates from the optimal solution.
Keywords : multi-criteria analysis, decision support, reliability, TOPSIS, gas turbine.

DIVERSITY OF WILD BEES IN MOROCCO: A FOCUS ON THE MARRAKECH–SAFI REGION

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Abstract
Although Morocco is a biodiversity hotspot for wild bees, much of its bee fauna remains un-derexplored. This study aims to enhance knowledge on the regional diversity of Moroccanbees by monitoring wild bee species across nine regions during the 2022–2024 period. A to-tal of 245 bee species—representing 34 genera and 6 families—are documented, accountingfor ~25% of the country's bee species, including 74 species newly recorded at the regionallevel. We recorded 42 species as new for the Marrakech-Safi region, bringing the total to597 species and confirming this region as a biodiversity hotspot. New records were also ob-served in the southern and desert regions, such as Laayoune-Boujdour-Sakia El Hamra andGuelmim-Oued Noun (12 species for each), as well as Dakhla-Oued Ed-Dahab (7 species),highlighting the need for further exploration in these under-sampled areas. The generaAndrena, Lasioglossum, and Eucera were the most diverse, collectively representing 61% the newly recorded species documented in this study. This research provides valuable in-sights into the diversity and distribution of Morocco's bee fauna and calls for standardizedmonitoring, conservation efforts, and expanded research—particularly in underexploredareas such as the southern regions—to preserve Morocco's vital bee populations and ensurethe sustainability of its agroecosystems.
Keywords: bee distribution; Moroccan bee fauna; new records; wild bees; solitary bees

NARAYANGANJ'DA SU KİRLİLİĞİNİN JEO-MEKÂNSAL ANALİZİ VE ÇEVRESEL SONUÇLARI

GEOSPATIAL ANALYSIS OF WATER POLLUTION AND ITS ENVIRONMENTAL CONSEQUENCES IN NARAYANGANJ

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Abstract
Narayanganj is one of the major industrial cities of Bangladesh, where the dense interaction among rivers, canals, industries, residential settlements, and inland waterways has gradually increased the risk of water pollution. In particular, the riverine areas along the Shitalakhya, Buriganga, and Dhaleshwari rivers are being severely affected by untreated industrial effluents, domestic waste, drainage outfalls, oil and waste from water vessels, and pressure from rapid urbanization. The objective of this study is to identify the spatial distribution of water pollution in Narayanganj and analyze its environmental consequences. Water samples will be collected from selected locations near Siddhirganj, Fatullah, Kanchpur, Pagla, river routes adjacent to Demra, and other industrially concentrated areas. A handheld GPS will be used to record the exact locations of sampling points. At the field level, parameters such as pH, temperature, electrical conductivity, total dissolved solids, dissolved oxygen, and turbidity will be measured using a multiparameter water quality meter and turbidimeter. In the laboratory, biochemical oxygen demand, chemical oxygen demand, nitrate, phosphate, and possible heavy metals such as chromium, lead, cadmium, and iron will be analyzed. In addition, Landsat 8/9 OLI-TIRS, Sentinel-2 MSI imagery, SRTM DEM, river and drainage networks, land use/land cover data, industrial location data, and field survey information will be used. ArcGIS and QGIS software will be applied for land use classification, NDWI analysis, buffer analysis, and IDW/Kriging interpolation to map pollution concentration and identify high-risk zones. Water Quality Index and Pollution Load Index will be used to compare pollution levels across different locations.

The study is expected to reveal higher pollution levels near industrial outfalls, densely populated areas, and river ports, marked by low dissolved oxygen, high BOD-COD, excessive TDS, and the presence of heavy metals. These conditions may have long-term impacts on aquatic habitats, fish reproduction, agricultural irrigation, soil quality, river-based livelihoods, and public health. This study will provide spatial evidence to support water pollution control, industrial waste management, river restoration, and environmentally informed urban planning in Narayanganj.
Keywords: Water Pollution, Geospatial Analysis, Narayanganj, Water Quality Index, Shitalakhya River, GIS.

Özet

Narayanganj, Bangladeş'in başlıca sanayi şehirlerinden biridir. Nehirler, kanallar, sanayi tesisleri, yerleşim alanları ve iç su yolları arasındaki yoğun etkileşim, bölgede su kirliliği riskini giderek artırmıştır. Özellikle Shitalakhya, Buriganga ve Dhaleshwari nehirleri boyunca uzanan nehir kıyısı alanları; arıtılmamış endüstriyel atık sular, evsel atıklar, drenaj çıkışları, su taşıtlarından kaynaklanan petrol ve atıklar ile hızlı kentleşme baskısından ciddi şekilde etkilenmektedir. Bu çalışmanın amacı, Narayanganj'daki su kirliliğinin mekânsal dağılımını belirlemek ve çevresel sonuçlarını analiz etmektir. Su örnekleri Siddhirganj, Fatullah, Kanchpur, Pagla, Demra'ya komşu nehir güzergâhları ve sanayinin yoğunlaştığı diğer seçili alanlardan toplanacaktır. Örnekleme noktalarının kesin konumlarını kaydetmek için el tipi GPS kullanılacaktır. Saha düzeyinde pH, sıcaklık, elektriksel iletkenlik, toplam çözünmüş katı madde, çözünmüş oksijen ve bulanıklık gibi parametreler çok parametreli su kalitesi ölçüm cihazı ve türbidimetre kullanılarak ölçülecektir. Laboratuvar ortamında ise biyokimyasal oksijen ihtiyacı, kimyasal oksijen ihtiyacı, nitrat, fosfat ve krom, kurşun, kadmiyum ve demir gibi olası ağır metaller analiz edilecektir. Buna ek olarak Landsat 8/9 OLI-TIRS, Sentinel-2 MSI görüntüleri, SRTM DEM, nehir ve drenaj ağları, arazi kullanımı/arazi örtüsü verileri, sanayi tesisi konum verileri ve saha araştırması bilgileri kullanılacaktır. ArcGIS ve QGIS yazılımları; arazi kullanımı sınıflandırması, NDWI analizi, tampon bölge analizi ve kirlilik yoğunluğunu haritalamak ile yüksek riskli bölgeleri belirlemek amacıyla IDW/Kriging enterpolasyonu için uygulanacaktır. Farklı konumlardaki kirlilik seviyelerini karşılaştırmak için Su Kalitesi İndeksi ve Kirlilik Yükü İndeksi kullanılacaktır. Çalışmanın, sanayi deşarj noktaları, yoğun nüfuslu alanlar ve nehir limanları yakınında daha yüksek kirlilik düzeylerini ortaya koyması beklenmektedir. Bu alanların düşük çözünmüş oksijen, yüksek BOD-COD, aşırı TDS ve ağır metal varlığı ile karakterize edilmesi muhtemeldir. Bu koşullar; sucul habitatlar, balık üremesi, tarımsal sulama, toprak kalitesi, nehir temelli geçim kaynakları ve halk sağlığı üzerinde uzun vadeli etkilere yol açabilir. Bu çalışma, Narayanganj'da su kirliliği kontrolü, endüstriyel atık yönetimi, nehir restorasyonu ve çevresel açıdan bilinçli kentsel planlamayı desteklemek için mekânsal kanıt sağlayacaktır.
Anahtar Kelimeler: Su Kirliliği, Jeo-mekânsal Analiz, Narayanganj, Su Kalitesi İndeksi, Shitalakhya Nehri, CBS.

A COMPARATIVE STUDY OF FINANCIAL PERFORMANCE OF MULTINATIONAL AND INDIGENOUS INDUSTRIAL GOODS FIRMS IN NIGERIA

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Abstract
This study investigated the comparative financial performance of multinational and indigenous industrial goods firms in Nigeria between 2015 and 2024. An ex post facto research design was adopted, relying on audited financial statements from ten purposively selected firms. Descriptive statistics showed that the average Return on Assets (ROA) was 7.253%, Return on Equity (ROE) was 12.842%, and Tobin's Q averaged 1.421, with variations across firm types. Independent t-tests revealed that multinational firms significantly outperformed indigenous firms in ROA (8.152% vs. 6.354%; $t = 2.144$, $p = 0.035$) and Tobin's Q (1.672 vs. 1.174; $t = 3.289$, $p = 0.001$), while no significant difference was found for ROE (12.103% vs. 13.579%; $t = 1.009$, $p = 0.316$). Panel regression results further showed that multinationality positively influenced ROA ($\beta = 1.820$, $p = 0.016$) and Tobin's Q ($\beta = 0.442$, $p = 0.004$), but had no significant effect on ROE ($\beta = 0.910$, $p = 0.492$). Control variables indicated that firm size and liquidity enhanced financial performance, whereas leverage had a negative effect across models. Post-estimation diagnostics confirmed model validity, with fixed effects appropriate for ROA and ROE, and random effects suitable for Tobin's Q. The study concluded that multinationality improves certain dimensions of financial performance, but internal structural factors remain critical. It was recommended that indigenous firms strengthen financial management and capital structures to improve their competitiveness in the industrial goods sector.
Keywords: Multinational firms, Indigenous firms, Industrial goods, Financial performance, Nigeria, Panel regression.

PROFIT SHIFTING MECHANISMS AND THE EVOLUTION OF GLOBAL TAX TRANSPARENCY

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ABSTRACT

Introduction and Purpose: Structural loopholes within international tax systems have long allowed multinational corporations to engage in aggressive tax minimization, undermining global revenue integrity. We hypothesized that specific corporate structures, such as the "Double Irish with a Dutch Sandwich," served as primary catalysts for reshaping global tax governance. Therefore, the objective of the present study was to assess how Google utilized these legal gaps for tax planning and evaluate the effectiveness of subsequent international tax reforms in curbing aggressive profit shifting.

Materials and Methods: This study employed a descriptive qualitative method with a case study approach focused on Google. Data collection involved an extensive document analysis of international taxation sources, legal frameworks, and corporate financial reports. The analysis categorized the evolution of tax avoidance schemes and mapped them against major policy shifts, specifically the OECD's Base Erosion and Profit Shifting (BEPS) project and the Global Minimum Tax initiative.

Results: The reliance on legal loopholes for profit shifting was found to be highest prior to 2020, causing substantial losses in global tax revenues and raising severe ethical concerns. The comparison across regulatory timelines revealed that traditional structures effectively disappeared following the 2020 policy enforcement, though corporations immediately began adjusting their strategies to fit the evolving legal landscape.

Discussion and Conclusion: The current study has demonstrated that while recent global initiatives successfully enhanced tax transparency and mandated economic substance, the cat-and-mouse game of international taxation remains an ongoing challenge. The formal termination of Google's scheme in 2020 was found to be effective in shifting global standards toward stricter governance, proving that sustained multilateral cooperation is vital to countering adaptive corporate tax strategies.

Keywords: Tax Avoidance; Transfer Pricing; BEPS; Double Irish with a Dutch Sandwich; International Taxation; Google Case Study.

THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND TAX AVOIDANCE

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ABSTRACT

Introduction and Purpose: This study investigates the multi-faceted relationship between corporate governance structures and corporate tax avoidance strategies, a critical tension point between corporate wealth maximization and state fiscal responsibility. While traditional agency theory suggests that robust governance aligns managerial actions with shareholder wealth, tax avoidance introduces a complex duality: it increases short-term cash flows but exposes the firm to severe reputational damage, regulatory penalties, and heightened audit risks. The purpose of this research is to explore how different internal and external governance mechanisms such as board composition, institutional ownership, executive compensation alignment, and audit committee independence discourage or facilitate aggressive tax planning. By examining these dynamics, the study aims to clarify whether strong corporate governance acts as a constraint against opportunistic tax non-compliance or as a driver for aggressive fiscal engineering.

Materials and Methods: To capture the nuanced behaviors and underlying motivations driving these corporate decisions, this study adopts a qualitative research approach. The primary methodology consists of a thematic analysis of secondary qualitative data, including corporate governance code frameworks, regulatory compliance reports, judicial tax case records, and executive board statements from public filings. This is supplemented by a comprehensive systematic literature review of peer reviewed accounting, legal, and economic journals published globally. Data analysis was executed using a multi-step coding process to identify recurring themes, behavioral patterns, and systemic governance failures that consistently correlate with aggressive tax postures. This qualitative paradigm allows for a deeper exploration of the institutional contexts, ethical boundaries, and strategic rationales that quantitative financial metrics alone cannot fully capture.

Discussion and Conclusion: The findings indicate that the relationship between corporate governance and tax avoidance is highly contextual and non-linear, often depending on the specific mechanism in place. Strong, independent boards and robust audit committees generally act as effective mitigators against extreme tax avoidance, viewing it as an operational risk that threatens long-term corporate sustainability and stakeholder trust. Conversely, high concentrations of institutional ownership or executive compensation packages heavily tied to short-term, after-tax financial performance frequently create incentives for aggressive tax minimization schemes. In conclusion, corporate governance does not universally restrict tax avoidance; rather, its efficacy relies on the alignment of ethical corporate culture with regulatory oversight. Ultimately, effective governance structures must treat tax compliance not merely as a legal obligation, but as a core component of corporate social responsibility (CSR) and sustainable enterprise risk management.

Keywords: Corporate Governance; Tax Avoidance; Agency Theory; Board Independence; Qualitative Thematic Analysis; Executive Compensation; Stakeholder Capitalism; Risk Management.

THE ECONOMIC CONSEQUENCES OF INDONESIA WITHOUT THE TAXATION SECTOR

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ABSTRACT

Introduction and Purpose: Taxation constitutes a fundamental pillar of fiscal sustainability and national development in Indonesia. In addition to serving as the primary source of government revenue, taxation supports public service provision, infrastructure development, income redistribution, and macroeconomic stability. Nevertheless, taxes are often perceived as a financial burden that reduces household purchasing power and business profitability. Therefore, this study aims to analyze the potential economic consequences of Indonesia operating without a taxation sector.

Materials and Methods: This study employed a qualitative literature review and descriptive-hypothetical approach. Secondary data were collected from academic journal articles, government publications, and reports from reputable institutions concerning taxation, fiscal policy, public finance, economic growth, and social welfare. The collected literature was analyzed descriptively to examine the potential implications of tax elimination on fiscal sustainability, public service provision, macroeconomic stability, social welfare, and long-term economic development in Indonesia.

Results: The findings indicate that although the elimination of taxation may generate short-term economic benefits through increased disposable income and reduced business operating costs, these advantages are outweighed by substantial systemic risks. The absence of tax revenue would create a significant funding gap in the State Budget (APBN), increase dependence on government borrowing, reduce fiscal flexibility, weaken public service delivery, and constrain infrastructure development. Furthermore, the removal of taxation's redistributive function would likely increase income inequality and negatively affect lower-income households that rely on publicly funded social protection programs.

Discussion and Conclusion: The study demonstrates that taxation remains essential for maintaining fiscal sustainability, supporting economic stability, financing public goods, and promoting social welfare. While a taxation-free system may appear economically attractive in the short term, its long-term consequences could undermine sustainable development and national competitiveness. Therefore, rather than eliminating taxation, policymakers should focus on improving tax efficiency, fairness, transparency, and taxpayer compliance to ensure sustainable economic development in Indonesia.

Key Words: Fiscal Policy; Taxation; APBN; Public Goods; Indonesian Economy.

THE ROLE OF TAXES IN INDONESIA'S NATIONAL DEVELOPMENT IN FACING GLOBAL ECONOMIC UNCERTAINTY IN 2026

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Abstract

Introduction : Taxes are the main source of Indonesia's government revenue and play a strategic role in supporting national development, especially through the financing of infrastructure, education, healthcare, social protection, and other public services. In facing global economic uncertainty in 2026, such as geopolitical tensions, climate change, digital economic transformation, and labor market changes, tax revenue becomes increasingly important to maintain economic stability and public welfare. Major taxes such as Income Tax, VAT and LGST, and Excise Tax contribute significantly to state revenue because they are collected from individual and corporate income, public consumption, and certain regulated goods. Therefore, strengthening tax revenue and tax compliance is essential for Indonesia to support sustainable, equitable, and resilient national development.

Research Method : This article uses a qualitative research approach to examine the role of taxation in Indonesia's national development during global economic uncertainty in 2026. The study relies on secondary data from scholarly journals, scientific articles, government publications, and official reports collected through a literature review. Relevant sources were selected based on their credibility, reliability, and connection to taxation, economic growth, national development, and global uncertainty. The data were then analyzed using a descriptive qualitative method by comparing, interpreting, and synthesizing findings to explain how taxation supports economic stability and sustainable development in Indonesia.

Discussion : In the 2025 State Budget, Indonesia's largest tax revenue sources are Income Tax, VAT and LGST, and Excise Tax, showing that state revenue strongly depends on business activities, domestic consumption, and excisable industries. These taxes play an important role in financing national development because they support government spending on education, healthcare, infrastructure, social protection, food security, and regional development through the APBN. In facing global economic uncertainty in 2026, caused by climate change, artificial intelligence development, and geopolitical tensions, these taxes help maintain fiscal stability, protect public welfare, and strengthen Indonesia's economic resilience. However, Indonesia still faces challenges such as low tax compliance, tax avoidance, the informal sector, digital taxation issues, declining purchasing power, and illegal excisable goods. Therefore, tax reform, digital tax administration, tax base expansion, and public awareness are needed to ensure sustainable and resilient national development.

Conclusion : Based on the findings, Indonesia needs to strengthen its tax system by improving digital tax administration, expanding the tax base, reducing tax avoidance and evasion, and increasing public awareness of tax compliance. Tax policies should also become more adaptive to current challenges, such as the digital economy, climate risks, and global market instability. In addition, tax revenue must be allocated effectively to priority sectors like education, healthcare, infrastructure, food security, and social protection so that society can directly benefit from taxation.

Future research is also needed to measure the impact of major tax sources on economic growth, welfare, and fiscal resilience, as well as to compare Indonesia's tax strategies with other developing countries. Overall, a fair, strong, and adaptive taxation system is essential for achieving sustainable, inclusive, and equitable national development.

Keywords : Taxes, Tax revenue, National development, Cooperation, Equitable, Global economic

THE TRANSFORMATION OF THE LABOR MARKET IN THE AGE OF ARTIFICIAL INTELLIGENCE: ECONOMIC IMPACTS AND FUTURE PERSPECTIVES

YAPAY ZEKÂ ÇAĞINDA İŞGÜCÜ PİYASASININ DÖNÜŞÜMÜ: EKONOMİK ETKİLER VE GELECEK PERSPEKTİFİ

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ÖZET

Yapay zekâ teknolojilerinin son yıllarda hızla gelişmesi ekonomik sistemlerde köklü değişimlerin ortaya çıkmasına neden olmuştur. Özellikle dijitalleşme sürecinin hız kazanmasıyla birlikte üretim süreçleri, hizmet sektörleri ve çalışma ilişkileri yeniden şekillenmeye başlamıştır. İşletmelerin verimlilik artışı, maliyet azaltımı ve rekabet avantajı sağlama amacıyla yapay zekâ destekli sistemleri yaygın biçimde kullanması işgücü piyasasında yapısal dönüşümlere yol açmaktadır. Bu dönüşüm yalnızca bazı mesleklerin ortadan kalkmasına neden olmamakta; aynı zamanda yeni iş alanlarının oluşmasını, çalışma biçimlerinin değişmesini ve çalışanlardan beklenen becerilerin farklılaşmasını da beraberinde getirmektedir.

Bu çalışmanın amacı yapay zekâ teknolojilerinin işgücü piyasası üzerindeki ekonomik etkilerini incelemek ve dijital dönüşüm sürecinin istihdam yapısında meydana getirdiği değişimleri değerlendirmektir. Çalışmada literatür taraması yöntemi kullanılmış; uluslararası kuruluşların raporları, akademik çalışmalar ve güncel ekonomik veriler analiz edilmiştir. Araştırma kapsamında yapay zekânın üretim süreçleri üzerindeki etkileri, istihdam yapısındaki değişimler, gelir dağılımına etkileri, çalışma ilişkilerindeki dönüşüm ve geleceğin işgücü piyasasına yönelik beklentiler ele alınmıştır.

Çalışma sonucunda yapay zekâ teknolojilerinin kısa vadede özellikle rutin ve düşük beceri gerektiren işlerde çalışan bireyler açısından istihdam risklerini artırdığı ancak uzun vadede yeni meslek alanları oluşturarak ekonomik verimlilik artışına katkı sağlayabileceği sonucuna ulaşılmıştır. Ayrıca eğitim sistemlerinin dijital dönüşüm sürecine uyum sağlayacak şekilde yeniden yapılandırılmasının ve yaşam boyu öğrenme politikalarının güçlendirilmesinin büyük önem taşıdığı belirlenmiştir. Yapay zekâ çağında sürdürülebilir ekonomik büyümenin sağlanabilmesi için teknoloji yatırımları, eğitim politikaları ve sosyal koruma mekanizmalarının birlikte değerlendirilmesi gerektiği sonucuna ulaşılmıştır.

Anahtar Sözcükler: Yapay zekâ, işgücü piyasası, dijital dönüşüm

ABSTRACT

The rapid development of artificial intelligence technologies in recent years has led to fundamental changes in economic systems. Particularly with the acceleration of the digitalization process, production processes, service sectors, and labor relations have begun to reshape. The widespread use of AI-supported systems by businesses to increase productivity, reduce costs, and gain a competitive advantage is leading to structural transformations in the labor market. This transformation is not only causing the disappearance of some professions; it is also leading to the creation of new job areas, changes in working methods, and differentiation in the skills expected of employees.

The aim of this study is to examine the economic effects of artificial intelligence technologies on the labor market and to evaluate the changes in the employment structure caused by the digital transformation process. The study used a literature review method; reports from international organizations, academic studies, and current economic data were analyzed. The research addresses the effects of artificial intelligence on production processes, changes in the employment structure, effects on income distribution, transformations in labor relations, and expectations for the future of the labor market. The study concludes that artificial intelligence technologies increase employment risks in the short term, particularly for individuals working in routine and low-skill jobs, but in the long term, they can contribute to increased economic productivity by creating new professional fields. Furthermore, it was determined that restructuring education systems to adapt to the digital transformation process and strengthening lifelong learning policies are of great importance. The study concludes that achieving sustainable economic growth in the age of artificial intelligence requires a combined approach to technology investments, education policies, and social protection mechanisms.

Keywords: Artificial intelligence, labor market, digital transformation

THE IMPACT OF GLOBAL FOOD CRISES ON AGRICULTURAL TRADE

KÜRESEL GIDA KRİZLERİNİN TARIM TİCARETİ ÜZERİNDEKİ ETKİLERİ

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ÖZET

Küresel gıda krizleri son yıllarda dünya ekonomisi ve uluslararası ticaret sistemi üzerinde önemli etkiler yaratan çok boyutlu sorunlardan biri hâline gelmiştir. Özellikle iklim değişikliği, COVID-19 pandemisi, enerji fiyatlarındaki artış, lojistik sorunlar ve Rusya-Ukrayna savaşı gibi gelişmeler küresel gıda arz zincirlerinde ciddi kırılmalara neden olmuştur. Bu süreçte tarım ürünleri fiyatlarında yaşanan hızlı artışlar birçok ülkenin gıda güvenliği konusunda risklerle karşı karşıya kalmasına yol açmıştır. Tarım ticaretinin küresel ölçekte karşılıklı bağımlılık temelinde şekillenmesi krizlerin etkilerinin yalnızca üretici ülkelerle sınırlı kalmamasına neden olmuş; ithalata bağımlı ülkelerde ekonomik kırılganlıkları artırmıştır. Özellikle gelişmekte olan ülkelerde artan gıda fiyatları enflasyon, yoksulluk ve sosyal refah kayıpları gibi sorunları derinleştirmiştir.

Bu çalışmanın amacı; küresel gıda krizlerinin ortaya çıkış nedenlerini incelemek ve söz konusu krizlerin tarım ticareti üzerindeki etkilerini değerlendirmektir. Çalışmada literatür taraması yöntemi kullanılmış; FAO, Dünya Bankası (WB), Dünya Ticaret Örgütü (WTO) ve Türkiye İstatistik Kurumu (TÜİK) tarafından yayımlanan güncel raporlar ve verilerden yararlanılmıştır. Araştırmada küresel gıda krizlerinin tarım ürünleri fiyatlarında dalgalanmalara yol açtığı, uluslararası ticaret dengelerini değiştirdiği ve ülkelerin alternatif tedarik kaynaklarına yönelmesine neden olduğu sonucuna ulaşılmıştır. Ayrıca Türkiye açısından değerlendirildiğinde tarımsal üretimde sürdürülebilirliğin sağlanmasının, dışa bağımlılığın azaltılmasının ve gıda arz güvenliğine yönelik politikaların güçlendirilmesinin büyük önem taşıdığı belirlenmiştir. Çalışma küresel gıda krizlerinin ekonomik etkilerini tarım ticareti perspektifinden ele alarak literatüre katkı sunmayı amaçlamaktadır.

Anahtar Kelimeler: Küresel gıda krizi, tarım ticareti, gıda güvenliği

ABSTRACT

Global food crises have become one of the multifaceted problems that have had significant impacts on the world economy and the international trade system in recent years. In particular, developments such as climate change, the COVID-19 pandemic, rising energy prices, logistical problems, and the Russia-Ukraine war have caused serious disruptions in global food supply chains. The rapid increases in agricultural product prices during this process have led many countries to face risks regarding food security. The fact that agricultural trade is shaped on a global scale based on interdependence has meant that the effects of crises are not limited only to producing countries; it has increased economic vulnerabilities in import-dependent countries. In particular, rising food prices in developing countries have deepened problems such as inflation, poverty, and social welfare losses. The aim of this study is to examine the causes of global food crises and to evaluate the effects of these crises on agricultural trade. The study uses a literature review method; current reports and data published by FAO, the World Bank (WB), the World Trade Organization (WTO), and the Turkish Statistical Institute (TÜİK) have been utilized. The study concludes that global food crises lead to fluctuations in agricultural product prices, alter international trade balances, and cause countries to turn to alternative supply sources. Furthermore, when evaluated from Turkey's perspective, it is determined that ensuring sustainability in agricultural production, reducing external dependence, and strengthening policies aimed at food supply security are of great importance. This study aims to contribute to the literature by examining the economic impacts of global food crises from the perspective of agricultural trade.

Keywords: Global food crisis, agricultural trade, food security

GOLD MARKET ANOMALIES FROM A BEHAVIORAL FINANCE PERSPECTIVE: A SYSTEMATIC REVIEW OF THE IMPACT OF INVESTOR PSYCHOLOGY ON PRICING DURING CRISIS PERIODS

DAVRANIŞSAL FİNANS PERSPEKTİFİNDEN ALTIN PİYASASI ANOMALİLERİ: KRİZ DÖNEMLERİNDE YATIRIMCI PSİKOLOJİSİNİN FİYATLAMALARA ETKİSİ ÜZERİNE SİSTEMATİK BİR DERLEME

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Abstract
The Homo Economicus model, a fundamental assumption of traditional finance, characterizes investors as perfectly rational, information-driven actors; within this framework, gold is positioned as a universal safe haven that shows a negative correlation with macroeconomic fundamentals during times of crisis. However, Prospect Theory fundamentally undermines this assumption; real investors operate under the asymmetric logic of loss aversion, where the psychological pain of losses outweighs the pleasure of equivalent gains. During crises, this cognitive asymmetry replaces rational analysis with emotionally and herd-psychologically driven behavior. This research aims to systematically examine the structural anomalies created in the gold market by the COVID-19 pandemic and subsequent global geopolitical shocks from a behavioral finance perspective, specifically for the period 2016-2026, through three theoretical layers, centering on this theoretical tension. In the first theoretical layer, the fundamental distinction is used to differentiate gold's functions as a hedge and a safe haven. In the second layer, the viral contagion dynamics of dominant market narratives are analyzed through the framework of narrative economics. The dominant narrative governing gold pricing undergoes a predictable mutation during times of crisis. When geopolitical risks increase, cases rise, and media-driven panic combine, prices can become highly dependent on mass investor psychology and speculative narratives rather than macroeconomic fundamentals. In the third layer, reflection theory is applied to algorithmic trading systems. The simultaneous triggering of pre-coded algorithms with traditional safe-haven heuristic methods creates a self-fulfilling feedback loop during market uncertainty, fueling structural volatility. A systematic literature review reveals that the safe-haven function of gold during crises is not a fixed, mechanical rule, but rather sensitive to the systemic dimension of liquidity needs, the framework of the dominant narrative in circulation, inter-market volatility, and investor herd mentality. This operational framework necessitates a redesign of static hedging models for portfolio managers, employing dynamic and psychology-sensitive strategies.
Keywords: Behavioral Finance, Gold Prices, Price Anomalies, Investor Psychology

Özet
Geleneksel finansın temel varsayımı olan Homo Economicus modeli, yatırımcıları mükemmel derecede rasyonel, bilgi odaklı aktörler olarak nitelendirir; bu çerçevede altın, kriz dönemlerinde makroekonomik temellerle negatif korelasyon gösteren evrensel bir güvenli liman olarak konumlandırılır. Bununla birlikte, Beklenti Teorisi bu varsayımı temelden sarsar; gerçek yatırımcılar, kayıpların psikolojik acısının eşdeğer kazançların zevkinden daha ağır bastığı, kayıp kaçınmasının asimetrik mantığı altında hareket ederler. Krizler sırasında bu bilişsel asimetri, rasyonel analizi duygusal ve sürü psikolojisiyle yönlendirilen davranışlarla değiştirir. Bu araştırma, bu teorik gerilimi merkezine alarak, COVID-19 pandemisi ve ardından gelen küresel jeopolitik şokların altın piyasasında yarattığı yapısal anomallikleri, davranışsal finans perspektifinden, 2016-2026 dönemi özelinde üç teorik katman üzerinden sistematik bir şekilde incelemeyi amaçlamaktadır. İlk teorik katmanda, altının bir korunma aracı ve güvenli liman olarak işlevlerini ayırmak için temel ayrım kullanılır.

İkinci katmanda, baskın piyasa anlatılarının viral bulaşma dinamikleri, anlatısal ekonomi çerçevesi aracılığıyla analiz edilir. Altın fiyatlandırmasını yöneten baskın anlatı, kriz dönemlerinde öngörülebilir bir mutasyona uğrar. Jeopolitik risk artışları, yükselen vakalar ve medya kaynaklı panikle birleştiğinde, fiyatlar makroekonomik temellerden ziyade kitlesel yatırımcı psikolojisine ve spekülatif anlatılara son derece bağımlı hale gelebilir. Üçüncü katmanda, yansıma teorisi algoritmik işlem sistemlerine uygulanır. Geleneksel güvenli liman sezgisel yöntemleriyle önceden kodlanmış algoritmaların eş zamanlı olarak tetiklenmesi, piyasa belirsizliği sırasında kendi kendini gerçekleştiren bir geri bildirim döngüsü oluşturarak yapısal oynaklığı körükler. Sistematik literatür derlemesi sonucunda; krizler sırasında altının güvenli liman işlevinin sabit, mekanik bir kural olmadığını, aksine likidite ihtiyaçlarının sistemik boyutuna, dolaşımdaki baskın anlatının çerçevesine, piyasalar arası oynaklığa ve yatırımcı sürü psikolojisine duyarlı olduğunu ortaya koymaktadır. Bu operasyonel çerçeve, portföy yöneticileri için dinamik ve psikolojiye duyarlı stratejiler kullanan statik riskten korunma modellerinin yeniden tasarlanmasını gerektirmektedir.

Anahtar Kelimeler: Davranışsal Finans, Altın Fiyatları, Fiyat Anomalileri, Yatırımcı Psikolojisi

ACTUAL PROBLEMS OF THE FUNCTIONING OF INVESTMENT MECHANISMS IN THE MARKET OF SECURITIES IN THE REPUBLIC OF AZERBAIJAN

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ABSTRACT
The most urgent task for the Republic of Azerbaijan at the modern stage is to attract investment resources to the economy in order to create conditions for its transition to the path of innovative development. At the same time, such an investment resource as the securities market is still not used in full force. In this regard, the development of the mechanism for the formation of investment resources and the improvement of its structural elements is of fundamental importance. The securities market as an organizational and economic system consists of closely interconnected separate elements involved in a single technological cycle. Its main economic function is the transformation of temporarily free funds from various owners of capital (population and enterprises) into investments by organizing the circulation of securities. This system, which ensures the financing of the production of goods and services, expands the circle of investors, and also intensifies cash flow, ensures the processes of their distribution and redistribution between industries and enterprises, allows for a significant concentration of capital. The functioning of the stock market is based on competitive mechanisms, on the basis of which an objective assessment of the profitability of certain areas of investment is revealed. At the same time, the potential investor is left with the freedom to make decisions, taking into account not only the expected return, but also other criteria, the main of which is the reliability and liquidity of investments in securities. Currently, securities markets with an efficient infrastructure in many countries of the world play an invaluable role in converting free capital into investments. In this regard, the main task of the stock market is to raise investors ' funds through Securities and invest in the real sector of the economy. At the same time, the investment process is the first and most important function of the securities market, and the market itself is a special form of the investment mechanism of a market economy that regulates the value of securities in the process of circulation. The article is devoted to the actual problems of investment mechanisms in the securities market in the Republic of Azerbaijan, as well as an in-depth analysis of the securities market in our country.
Keywords: Volume in circulation at face value, Period of circulation, Shares of government bonds in the securities market, Shares of notes of the CBA in the securities market.

İŞLETMEDE ÖNGÖRÜCÜ YAPAY ZEKA MI YOKSA MUAMMA İNSAN ZEKASI MI KAZANIR?

WILL PREDICTIVE ARTIFICIAL INTELLIGENCE OR ENIGMATIC HUMAN INTELLIGENCE WIN IN BUSINESS?

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Abstract
Business management and decision-making processes are among the most fundamental determinants of organizational success. Traditionally, human experience, intuition, and expertise have formed the basis of business decisions. However, the rapid developments in artificial intelligence (AI) technologies in recent years have led to the emergence of a new paradigm in business management. Predictive analytics and AI-based approaches have begun to radically transform corporate decision-making mechanisms. This technological shift has sparked a significant debate among academics and executives: Is predictive AI or the enigmatic nature of human intelligence more effective and reliable in business decisions? The primary objective of this study is to comprehensively compare the impacts of predictive AI, human intelligence, and a hybrid model—which combines both approaches—on business performance. Within the scope of the research, data were collected via a scenario-based survey from 90 executives and professionals operating across various sectors in Turkey. The findings reveal a striking paradox between managerial preferences and data-driven reality. Although participants perceptually favored and highly desired the hybrid decision-making approach, multiple linear regression analyses demonstrated that predictive AI is the strongest and most significant objective predictor of actual business performance. Conversely, human intelligence alone did not yield a statistically significant predictive effect on overall performance. Furthermore, during crisis situations, relying solely on human insight negatively impacted performance, whereas integrating AI analytics with leader intuition produced positive outcomes. Ultimately, this study concludes that while a hybrid model is idealized by professionals, AI stands as the primary driver of objective performance, signaling a critical transition towards "Augmented Intelligence" frameworks in future strategic corporate management.
Keywords: Predictive AI, Human Intelligence, Hybrid Decision-Making, Business Performance, Augmented Intelligence

Özet
İşletme yönetimi ve karar verme süreçleri, organizasyonel başarının en temel belirleyicileri arasında yer almaktadır. Geleneksel olarak bu süreçlerin temelinde insan deneyimi, sezgi ve uzmanlık bilgisi yer almıştır. Ancak son yıllarda yapay zeka (YZ) teknolojilerinde yaşanan hızlı gelişimler, işletme yönetiminde yeni bir paradigmanın doğmasına neden olmuş ve karar mekanizmalarını kökten dönüştürmeye başlamıştır. Bu teknolojik dönüşüm, yöneticiler ve akademisyenler arasında önemli bir tartışma başlatmıştır: İşletme kararlarında öngörücü yapay zeka mı yoksa insan zekasının muamma yapısı mı daha etkili ve güvenilirdir? Bu çalışmanın temel amacı; öngörücü yapay zeka, insan zekası ve bu iki yaklaşımın birleşiminden oluşan hibrit modelin işletme performansı üzerindeki etkilerini kapsamlı bir şekilde karşılaştırmaktır. Araştırma kapsamında, Türkiye'de çeşitli sektörlerde faaliyet gösteren 90 yönetici ve profesyonelden senaryo temelli anket yoluyla veri toplanmıştır. Elde edilen bulgular, yöneticilerin tercihleri ile veri temelli gerçeklik arasında çarpıcı bir paradoksu ortaya koymaktadır. Katılımcılar algısal olarak hibrit yaklaşımı en yüksek düzeyde tercih etseler de, çoklu doğrusal regresyon analizleri işletme performansını nesnel olarak en güçlü yordayan modelin saf yapay zeka olduğunu göstermiştir.

Geleneksel insan zekasının ise tek başına performans üzerinde anlamlı bir etkisi bulunamamıştır. Ayrıca kriz durumlarında yalnızca insan içgörüsüne güvenmenin performansı olumsuz etkilediği, YZ analizlerinin lider sezgisiyle bütünleştiği hibrit modelin ise pozitif sonuçlar doğurduğu tespit edilmiştir. Sonuç olarak bu çalışma, hibrit modelin profesyoneller tarafından algısal olarak idealleştirilmesine rağmen nesnel anlamda en yüksek performansı YZ temelli kararların sağladığını ortaya koymakta ve gelecekteki stratejik yönetimde artırılmış zeka çerçevelerinin benimsenmesi gerektiğine işaret etmektedir.

Anahtar kelimeler: Öngörücü Yapay Zeka, İnsan Zekası, Hibrit Karar Verme, İşletme Performansı, Artırılmış Zeka

THE MODERATING ROLE OF JOB INSECURITY ON THE IMPACT OF AI CONCERNS ON INNOVATIVE WORK BEHAVIOR IN THE SERVICE SECTOR

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Abstract
This thesis examines the effect of artificial intelligence anxiety on innovative work behavior in the service sector and investigates the moderating role of job insecurity in this relationship. The rapid integration of artificial intelligence technologies into working life increases employees' concerns about job loss, declining professional competence, and difficulty adapting to technological transformation. The main purpose of the study is to determine the effect of artificial intelligence anxiety on innovative work behavior and to reveal how job insecurity changes this relationship. In the service sector, customer interaction, adaptability, speed, and innovation are critical sources of competitiveness. Therefore, understanding how employees' anxiety toward artificial intelligence affects their innovative behavior is important for human resource practices and organizational transformation processes.The study was designed using a quantitative research method. Data collected from service sector employees through a survey were analyzed using reliability analysis, descriptive statistics, correlation analysis, regression analysis, and moderation analysis.
The findings indicate that participants' artificial intelligence anxiety was between low and moderate levels, while their innovative work behavior was above the moderate level. A positive and significant relationship was found between artificial intelligence anxiety and innovative work behavior. Although job insecurity alone did not have a significant effect on innovative work behavior, it had a significant moderating role in the relationship between artificial intelligence anxiety and innovative work behavior. In conclusion, artificial intelligence anxiety is not merely a factor that prevents innovative behavior; under certain conditions, it may also activate employees' innovative tendencies. However, increased job insecurity changes the nature of this relationship and may weaken the effect of artificial intelligence anxiety on innovative work behavior.
Keywords: Artificial intelligence, innovative work behavior, job insecurity

UYGULAMA İÇİ SATIN ALIM TÜRLERİNE YÖNELİK KULLANICI TEPKİLERİ: KARŞILAŞTIRMALI BİR LİTERATÜR İNCELEMESİ

USER RESPONSES TO IN-APP PURCHASE TYPES: A COMPARATIVE LITERATURE REVIEW

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Abstract
With the proliferation of digital technologies, the mobile application and digital game economy has evolved from a one-time sales model into a freemium-based structure that generates continuous revenue, with in-app purchases (IAP) coming to occupy the center of this transformation. The aim of this study is to examine, within a holistic framework, user responses to different types of IAP—including microtransactions, subscription and game pass systems, ad-free usage, downloadable additional content, loot boxes, and pay-to-win mechanisms—as well as the motivational, psychological, economic, and socio-cultural factors that shape these responses. The study was conducted using a qualitative literature review method that thematically groups empirical and conceptual research in the national and international literature. The reviewed sources were comparatively evaluated under the headings of purchase motivations and behavioral intention, psychological pressure mechanisms and addiction tendency, the freemium business model and pricing dynamics, loot box and P2W systems and ethical debates, and socio-cultural dimensions and generational differences. The findings reveal that IAP behavior is not a one-dimensional phenomenon but arises from a multilayered interaction among individual motivations, system design, psychological pressure, and cultural context. In addition, it was determined that freemium-based demand is relatively price-inelastic, that digital consumption culture is most strongly embodied in Generation Z, and that large-sample quantitative research on loot box and P2W systems remains insufficient. The study emphasizes the need for mixed-method research that represents the Turkish sample in particular and compares different types of IAP.
Keywords: In-App Purchase, Microtransactions, Digital Game Economy, Purchase Motivation, Consumer Behavior

Özet
Dijital teknolojilerin yaygınlaşmasıyla birlikte mobil uygulama ve dijital oyun ekonomisi, tek seferlik satış modelinden sürekli gelir üreten freemium temelli bir yapıya evrilmiş; uygulama içi satın alımlar (UİSA) bu dönüşümün merkezinde yer almaya başlamıştır. Bu çalışmanın amacı, mikro işlemler, abonelik ve gamepass sistemleri, reklamsız kullanım, indirilebilir ek içerikler, loot box ve pay-to-win mekanizmaları olmak üzere farklı UİSA türlerine yönelik kullanıcı tepkilerini ve bu tepkileri biçimlendiren motivasyonel, psikolojik, ekonomik ve sosyo-kültürel etmenleri bütüncül bir çerçevede incelemektir. Çalışma, ulusal ve uluslararası literatürdeki ampirik ve kavramsal araştırmaları tematik olarak gruplandıran nitel bir literatür incelemesi yöntemiyle yürütülmüştür. İncelenen kaynaklar; satın alma motivasyonları ve davranışsal niyet, psikolojik baskı mekanizmaları ve bağımlılık eğilimi, freemium iş modeli ve fiyatlandırma dinamikleri, loot box ile P2W sistemleri ve etik tartışmalar ile sosyo-kültürel boyutlar ve kuşak farkları başlıkları altında karşılaştırmalı olarak değerlendirilmiştir. Bulgular, UİSA davranışının tek boyutlu bir olgu olmadığını; bireysel motivasyonlar, sistem tasarımı, psikolojik baskı ve kültürel bağlam arasındaki çok katmanlı etkileşimden doğduğunu ortaya koymaktadır. Ayrıca freemium temelli talebin görece fiyat inelastik olduğu, dijital tüketim kültürünün en güçlü biçimde Z kuşağında somutlaştığı ve loot box ile P2W sistemleri üzerine geniş örneklemli nicel araştırmaların yetersiz kaldığı belirlenmiştir. Çalışma, özellikle Türkiye örneklemini temsil eden ve farklı UİSA türlerini karşılaştıran karma yöntemli araştırmalara duyulan ihtiyacı vurgulamaktadır.
Anahtar Sözcükler: Uygulama İçi Satın Alım, Mikro İşlemler, Dijital Oyun Ekonomisi, Satın Alma Motivasyonu, Tüketici Davranışı

DÖNGÜSEL TEDARİK ZİNCİRLERİNDE YAPAY ZEKA TABANLI GERİ AKIŞ TAHMİNİ

ARTIFICIAL INTELLIGENCE-BASED REVERSE FLOW FORECASTING IN CIRCULAR SUPPLY CHAINS

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Abstract
The primary objective of this study is to develop artificial intelligence-based forecasting models to enhance the efficiency of reverse flow processes within circular supply chains. In the circular economy approach, the recycling, reuse, or recovery of products is of paramount importance. However, the effective management of these processes depends on the accurate prediction of the quantity and timing of returned products. In this context, the study aims to predict reverse flow quantities by utilizing machine learning based forecasting methods. Within the scope of the study, datasets from sources such as Eurostat and the Global E-waste Monitor were utilized for recyclable waste. Random Forest, Support Vector Regression (SVR), and Extreme Gradient Boosting (XGBoost) were employed as prediction algorithms. The predictive performance of the algorithms during the training and testing phases was evaluated for the dataset consisting of socio-economic and environmental data. Performance metrics such as mean absolute percentage error (MAPE), root mean square error (RMSE), and the determination coefficient (R^2) were used to evaluate the models. Based on the results of the comparative analyses, it was determined that the SVR model is the most successful algorithm for predicting reverse flow, as evidenced by its lowest MAPE and highest R^2 values. Based on the results obtained, forecasts for the coming years were made using the SVR algorithm, which demonstrated the best performance. The research findings contribute to capacity planning and logistics optimization, while also providing important insights that can be used to support strategic decisions aimed at achieving circular economy goals.
Keywords: Machine Learning, Reverse Flow Forecasting, Artificial Intelligence, Random Forest, SVR, Xgboost.

Özet
Bu çalışmanın amacı, döngüsel tedarik zincirlerinde geri akış süreçlerinin etkinliğini artırmak amacıyla yapay zekâ tabanlı tahmin modellerinin geliştirilmesidir. Döngüsel ekonomi yaklaşımında ürünlerin geri dönüşümü, yeniden kullanımı veya geri kazanımı büyük önem taşımaktadır. Ancak bu süreçlerin etkin biçimde yönetilebilmesi, iade edilen ürün miktarının ve zamanının doğru tahmin edilmesine bağlıdır. Bu kapsamda çalışma, makine öğrenmesi yöntemleri kullanılarak geri akış miktarlarının öngörülmesini amaçlamaktadır. Çalışma kapsamında geri dönüştürülebilir atıklar için Avrupa İstatistik Ofisi (Eurostat) ve Küresel Elektronik Atık İzleme (Global E-waste Monitor) gibi kaynaklardaki veri setlerinden faydalanılmıştır. Çalışmada, tahmin algoritmaları olarak makine öğrenmesi yöntemlerinden Rassal Orman, Destek Vektör Regresyonu (SVR) ve Aşırı Gradyan Artırma (XGBoost) algoritmaları kullanılmıştır. Sosyo-ekonomik ve çevresel verilerden oluşan veri seti için algoritmaların eğitim ve test aşamalarındaki tahmin performansı değerlendirilmiştir. Performans ölçütleri olarak ortalama mutlak yüzdesel hata (MAPE), ortalama hata kareleri kökü (RMSE) ve belirlilik katsayısı (R^2) gibi metrikler kullanılmıştır. Yapılan karşılaştırmalı analizler sonucunda; SVR modelinin en düşük MAPE ve en yüksek R^2 değeri ile geri akış miktarını tahminlemede en başarılı algoritma olduğu saptanmıştır. Elde edilen sonuçlar doğrultusunda en iyi performansı gösteren SVR algoritması ile gelecek yıllara yönelik tahminler yapılmıştır. Araştırma sonuçları, kapasite planlaması ve lojistik optimizasyonuna katkı sağlarken, döngüsel ekonomi hedeflerinin gerçekleştirilmesine yönelik stratejik kararların desteklenmesinde kullanılabilecek önemli bulgular sunmaktadır.
Anahtar Kelimeler: Makine Öğrenmesi, Geri Akış Tahmini, Yapay Zeka, Rassal Orman, SVR, Xgboost.

PROTECTIVE ROLE OF *SILVIDORA PROCEIA* AGAINST HISTOPATHOLOGICAL DAMAGE OF GREEN-SYNTHESIZED SILVER NANOPARTICLES IN *LABEO ROHITA*

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Abstract
The research was carried out to alleviate the harmful effects of silver nanoparticles which were formulated by green synthesis of Cucumis melo L. The Silvidora persica methanolic extract was the ameliorative agent. In this research, experimental fish Labeo rohita (n=100 and weighed 20.34 grams) were randomly separated into five groups. These groups are Control (C) non-dosed, CT1, CT2 and CT3 which were administered with 18 mg/kg quantity of green synthesized nano particles and CT1, CT2 and CT3 co-treated with 100, 75 and 50 mg/kg of Methanolic extract of Salvadora persica. Positive control PC was given 18 mg/kg of the green nano particles synthesized. The time used in the experiment was 21 days where the doses of silver nano particles were repeated after 3 days and the doses of the plants extract were repeated after every alternate day up to 14 days only and the fish were not given any dose after the remaining 7 days. After 21 days' experiment was terminated and it was found that there was significant change observed in the positive control and CT3 group whereas CT1 and CT2 were equalize to the control group in which the abnormality induced by plant extract was the same in the control group. Same pattern was also in the groups where there were significant changes including gills that were reported as having blood congestion, telangiectasia at the tips of sec lamella, shortening of sec lamella, widening of filament, blood vessels damage, absence of sec lamella, hypertrophy of lamellar epithelium, hyperplasia, rupture in epithelium, haemorrhage, rupture in internal structure, vasodilation and disruption in cartilaginous core, Intestine that were reported as having cell.
Keywords: *Silvidora proceia*, *Labeo rohita,* Silver Nanoparticles, Ameoliorative effects.

ELECTRONIC STRUCTURE AND STRUCTURAL STABILITY OF $Tl_{1-x}B_xP$ ALLOYS: A FIRST-PRINCIPLES STUDY WITH SPIN–ORBIT COUPLING

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Abstract
The search for novel semiconductor materials with controllable structural and electronic characteristics has attracted considerable attention due to their potential applications in advanced optoelectronic technologies. In the present study, the structural stability and electronic properties of $Tl_{1-x}B_xP$ alloys (x = 0.25 and 0.5) are systematically investigated using first-principles calculations based on Density Functional Theory (DFT) within the Generalized Gradient Approximation (GGA). The influence of thallium incorporation and alloy composition on the structural and electronic behavior of these compounds is analyzed in detail. All calculations were performed for the zinc-blende crystal phase using a 2×2×2 supercell generated from the parent BP structure. The desired alloy concentrations were achieved by substituting selected boron atoms with thallium atoms. To ensure reliable results, the computational parameters were carefully optimized, including an 11×11×11 k-point mesh (56 irreducible k-points), an RMT·Kmax value of 7, a cutoff energy of −6 Ry, and suitable muffin-tin radii for all constituent atoms. The calculated results reveal that BP behaves as an indirect-gap semiconductor, whereas TlP exhibits a nearly vanishing band gap, indicative of semi-metallic behavior. The investigated $Tl_{1-x}B_xP$ alloys also display a semi-metallic electronic character, representing an intermediate state between the electronic structures of the two binary compounds. Moreover, variations in thallium concentration significantly affect the lattice constants and total energies, demonstrating the possibility of tailoring the electronic response of the alloys through compositional engineering. These findings highlight the important role of thallium in modifying the electronic structure and stabilizing new alloy configurations. Consequently, $Tl_{1-x}B_xP$ alloys emerge as promising materials for future electronic and optoelectronic applications requiring tunable electronic properties and adaptable band structures.
Keywords— energy gap, structural properties, DFT, III–V semiconductor, GGA, ab initio calculations, $Tl_{1-x}B_xP$ alloys, WIEN2k

ASSESSMENT OF MYCOTOXIN RISK IN MILK: FROM ANIMAL FEED TO AFLATOXIN M1 (AFM1)

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Abstract
Aflatoxin M1 (AFM1) is a hydroxylated metabolite of aflatoxin B1 that is excreted in milk following the ingestion of contaminated feed by dairy animals. It is considered a key biomarker of aflatoxin transfer from feed to milk and remains a significant food safety concern in dairy production systems. Its occurrence is mainly associated with fungal contamination of feed ingredients and inadequate storage conditions at farm level.
This study evaluated the occurrence and concentration of AFM1 in raw milk samples collected from the Kosovo Plain during March, a period characterized by increased use of stored feed. A total of 25 raw milk samples were analyzed using the Enzyme-Linked Immunosorbent Assay (ELISA) method, and results were assessed in relation to the European Union maximum permitted limit of 0.05 µg/kg.
The mean AFM1 concentration was 0.0224 µg/kg, while the median was 0.009 µg/kg, indicating a positively skewed distribution and overall low contamination levels relative to the regulatory limit. However, the maximum concentration was 0.129 µg/kg, suggesting heterogeneous contamination among samples.
These findings highlight the importance of continuous monitoring of animal feed quality and milk safety in mitigating risks associated with mycotoxins throughout the dairy production chain. An integrated risk management approach may be beneficial, encompassing the entire process from feed production to dairy processing. Overall, systematic monitoring and proper management of animal feed can significantly improve milk safety and reduce consumer exposure to mycotoxins.
Keywords: Aflatoxin M1 (AFM1), mycotoxins, milk safety, feed contamination.

IOT ENABLED WASTEWATER MONITORING AND ENVIRONMENTAL PROTECTION

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Abstract
The management circumstances of the treatment facility, environmental concerns, wastewater quality, and other factors all affect how well wastewater treatment works. One environmental issue modern society face is the disposal of wastewater with acceptable quality characteristics to various receiving sources. To reduce wastewater pollution to levels that the environment can handle, wastewater treatment is seen to be the most crucial step in the process. Industrial wastes pose a greater challenge to the treatment process at many sewages treatment plants than any other issue that plant managers must handle. These kinds of wastes and the faster depreciation of sewage treatment plant infrastructure may be beyond the capacity of these plants. Recently, there has been a lot of interest in artificial neural networks and other artificial process control algorithms due to growing worries about the effects of refineries on the environment, their inefficient operation, oscillations in process variables, and problems with online analyzers. A group of neurons placed in different layers to form an artificial intelligence network creates a distinct architecture based on how the neurons interact with each other. This work examines the literature on applying artificial intelligence to wastewater treatment. Also, this article describes the importance of integrating IoT into wastewater monitoring and how this innovative technique can address the problem of water scarcity, which needs to be resolved immediately.
Keywords: wastewater; artificial intelligence; toxicity; monitoring; Internet of Things (IoT).

MULTI-MODAL DEEP LEARNING AND SENSOR FUSION FOR INTELLIGENT MARITIME SECURITY ENHANCING BORDER PROTECTIONS VIA GLOBAL MARINE DATA AGGREGATIONS

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ABSTRACT
Securing trade routes and territorial waters requires continuous monitoring of maritime traffic to prevent illegal smuggling, unauthorized fishing, and navigation accidents. This study introduces a multi-modal deep learning system, *SeaGuard-Surveillance*, designed for the AICU to coordinate maritime security and port operations using international marine datasets. SeaGuard-Surveillance integrates data streams from satellite synthetic aperture radar (SAR) imagery, automatic identification system (AIS) transponders, and coastal optical video feeds. The framework uses a sensor fusion network where a convolutional neural network processes spatial imagery while an LSTM network evaluates temporal vessel movements. By cross-referencing a ship's stated travel plan against its actual observed path, the system flags suspicious activities like transponder spoofing, unauthorized commercial trawling, and illegal loitering in protected fishing zones. Implemented across high-volume coastal pathways, the model achieved a 96.2% accuracy score in flagging maritime anomalies with a low latency under 2 seconds, providing maritime authorities and local cooperatives with a reliable tool to protect marine resources and defend coastal livelihoods.

Keywords: Multi-Modal Deep Learning, Maritime Surveillance Networks, Sensor Fusion Architectures, Transnational Security Infrastructure, Synthetic Aperture Radar, Spatio-Temporal Anomaly Tracking.

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İLGİLİ MAKAMA

19. Ejons Uluslararası Bilimsel Araştırmalar ve Güncel Gelişmeler Kongresi 25-27 Haziran 2026 tarihleri arasında Türkiye / İstanbul'da 29 farklı ülkenin (Türkiye-83, Diğer Ülkelerden-89) 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. Osman ERKMEN
Istanbul Okan University
CONGRESS PRESIDENT

Tarih: 14/04/2026 15:52
Sayı: E-56200091-100-2026.69.663551
00000664147

İSTANBUL OKAN ÜNİVERSİTESİ

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İSTANBUL OKAN ÜNİVERSİTESİ
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Sayı : E-56200091-100-2026.69.663551 14/04/2026
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SAĞLIK BİLİMLERİ FAKÜLTESİ DEKANLIĞINA

İlgi : 07.04.2026 tarihli ve E-26494018-100-2026.21.661684 sayılı yazınız.

İlgi yazınıza istinaden, Fakülteniz Beslenme ve Diyetetik Bölüm Başkanlığından tarafınıza sunulan yazı doğrultusunda, söz konusu kongrenin Kongre Başkanı ve Düzenleme Kurulu tarafından düzenlenmesi Rektörlüğümüzce uygun görülmüştür.

Gereğini bilgilerinize rica ederim.

Saygılarımla,

Prof. Dr. Güliz MUĞAN
Rektör

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Beslenme ve Diyetetik Bölümü

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Fakültemiz Beslenme ve Diyetetik Bölüm Başkanlığından alınan ve ekte sunulan ilgi yazı doğrultusunda, söz konusu kongrenin Kongre Başkanı ve Düzenleme Kurulu tarafından düzenlenebilmesi için gerekli iznin EBYS üzerinden imzalı olarak verilmesi hususunda gereğini bilgilerinize arz ederim.

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İstanbul Okan Üniversitesi Rektörlüğüne

İstanbul Okan Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü ile İKSAD iş birliğinde, 25-27 Haziran 2026 tarihleri arasında Çevrimiçi Katılım (Online) olarak "*19. EJONS Uluslararası Kongresi: Bilimsel Araştırmalar ve Güncel Gelişmeler*)" başlıklı uluslararası kongrenin düzenlenmesi planlanmaktadır.

Söz konusu kongrenin önceki organizasyonlarında da kongre başkanı olarak görev almış bulunmaktayım. Ayrıca İKSAD iş birliğiyle, yurt içinde ve yurt dışında Paris, Kiev ve Azerbaycan gibi çeşitli merkezlerde, üniversiteler veya kongre merkezleri bünyesinde düzenlenen 50'nin üzerinde kongrede Kongre Başkanı veya Düzenleme Kurulu üyesi olarak görev yaptım.

Planlanan bu kongrede, aşağıda belirtilen "**Kongre Başkanı (Congress President)**" ile "**Düzenleme Kurulu (Organizing Board)**" üyeleri, İstanbul Okan Üniversitesi Beslenme ve Diyetetik Bölümü öğretim elemanları ve akademik personelinden oluşacak; kongrenin akademik ve bilimsel faaliyetlerinden sorumlu olacaklardır. **Üniversitemiz** ise kongre afişlerinin hazırlanması ve kongre duyurusunun diğer üniversitelere duyurulması süreçlerinde görev alacaktır.

İKSAD Enstitüsü ise kongre faaliyetleri için gerekli personelin temini, kongre web sayfasının hazırlanması (https://www.ejonscongress.org/tr), kongre duyurularının yapılması, kongre özet ve tam metin kitaplarının çevrim içi kongre sayfasında yayımlanması ve kongreye ilişkin mali süreçlerin yürütülmesinden sorumlu olacaktır. Kongreye ilişkin tüm haklar İKSAD Enstitüsü'ne ait olacaktır.

Yukarıda belirtilen uluslararası kongrenin, Kongre Başkanı ve Düzenleme Kurulu tarafından düzenlenebilmesi hususunda gerekli iznin verilmesini arz ederim.

Prof. Dr. Osman ERKMEN
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