10TH INTERNATIONAL

AFRICAN CONFERENCE ON CONTEMPORARY SCIENTIFIC RESEARCH

JANUARY 19-21, 2026

NAIROBI - KENYA









EDITOR

Dr. Robert Joseph Ochieng

PROCEEDINGS BOOK

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Issued: 05.02.2026

CONFERENCE PROCEEDINGS BOOK

10th INTERNATIONAL

AFRICAN

CONFERENCE ON CONTEMPORARY SCIENTIFIC RESEARCH

January 19-21, 2026 Nairobi, Kenya

Issued: 05.02.2026

ISBN - 979-8-89695-313-5

ORGANIZING INSTITUTIONS

KCA UNIVERSITY, KENYA
&
INSTITUTE OF ECONOMICS DEVELOPMENT AND SPCAIL RESEARCH (IKSAD)

PARTICIPANTS' COUNTRIES (14)

Kenya, Türkiye, Azerbaijan, Poland, India, Eritrea, Kosovo, Morocco, Romania, USA, Ukraine, Nigeria, United Kingdom, Georgia.

TOTAL ACCEPTED PAPERS: 75

TOTAL REJECTED PAPERS: 12

TOTAL NUMBER OF PAPERS FROM TÜRKİYE: 25

TOTAL NUMBER OF INTERNATIONAL PARTICIPANTS: 50

EVALUATION PROCESS

All applications have undergone a double-blind peer review process

PRESENTATION

Oral Presentatıons

CONFERENCE ID

TITLE

10th INTERNATIONAL AFRICAN CONFERENCE
ON CONTEMPORARY SCIENTIFIC RESEARCH

DATE - PLACE

January 19-21, 2026 Nairobi - Kenya

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Turkish, English, French, Arabic

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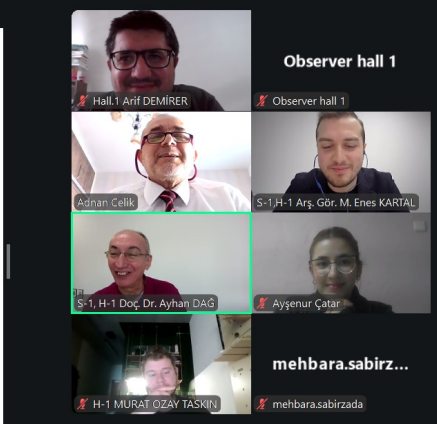
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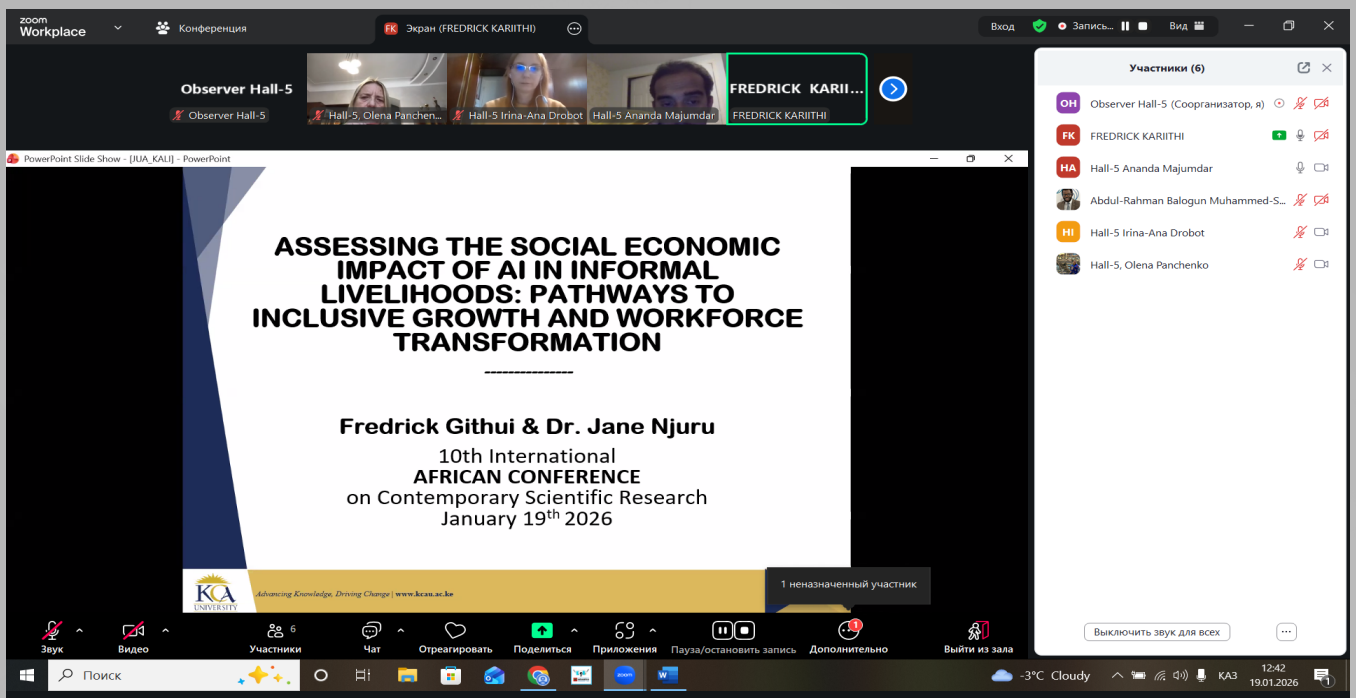


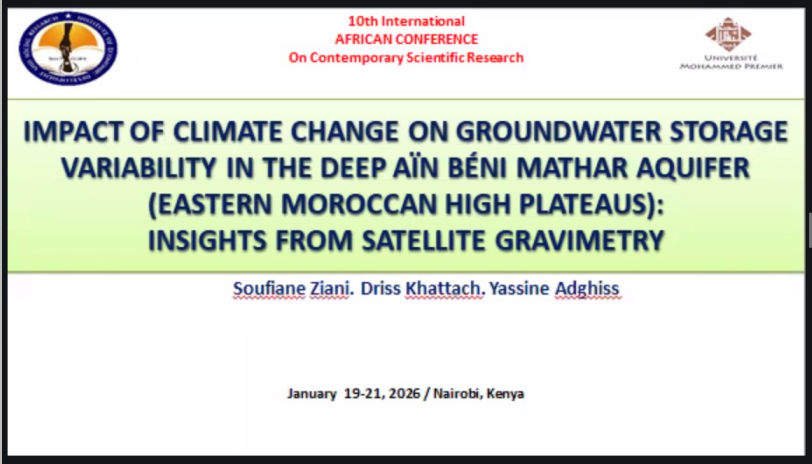


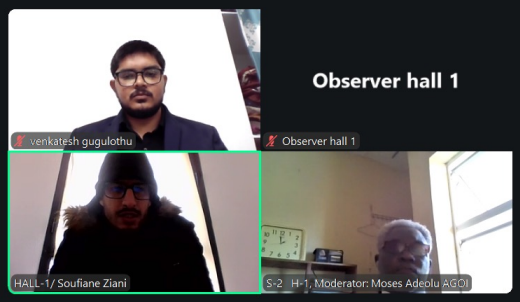


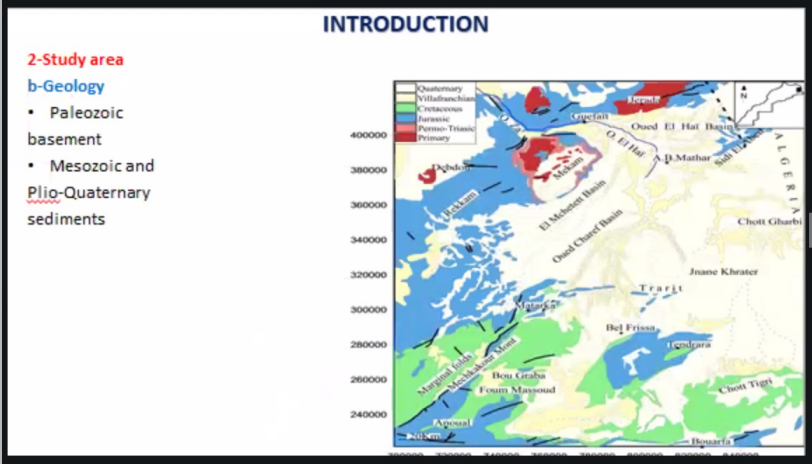
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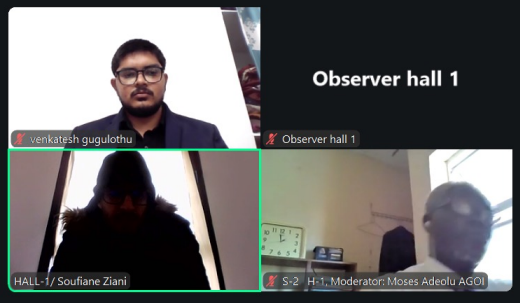
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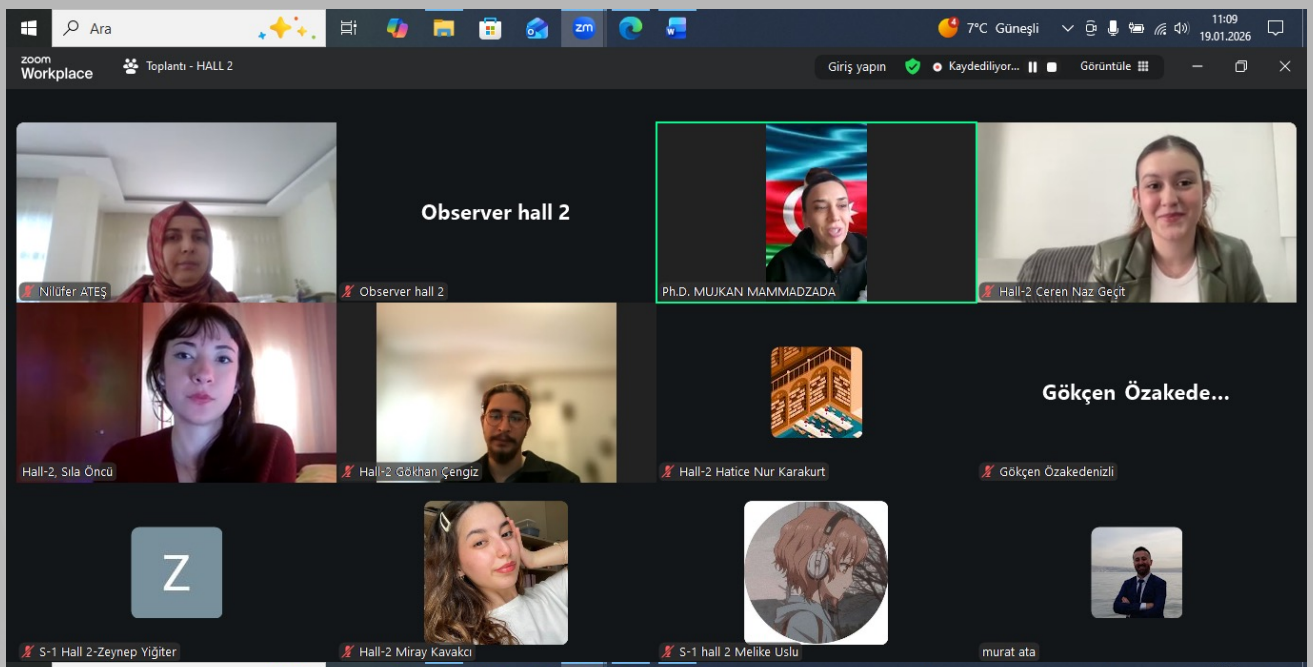


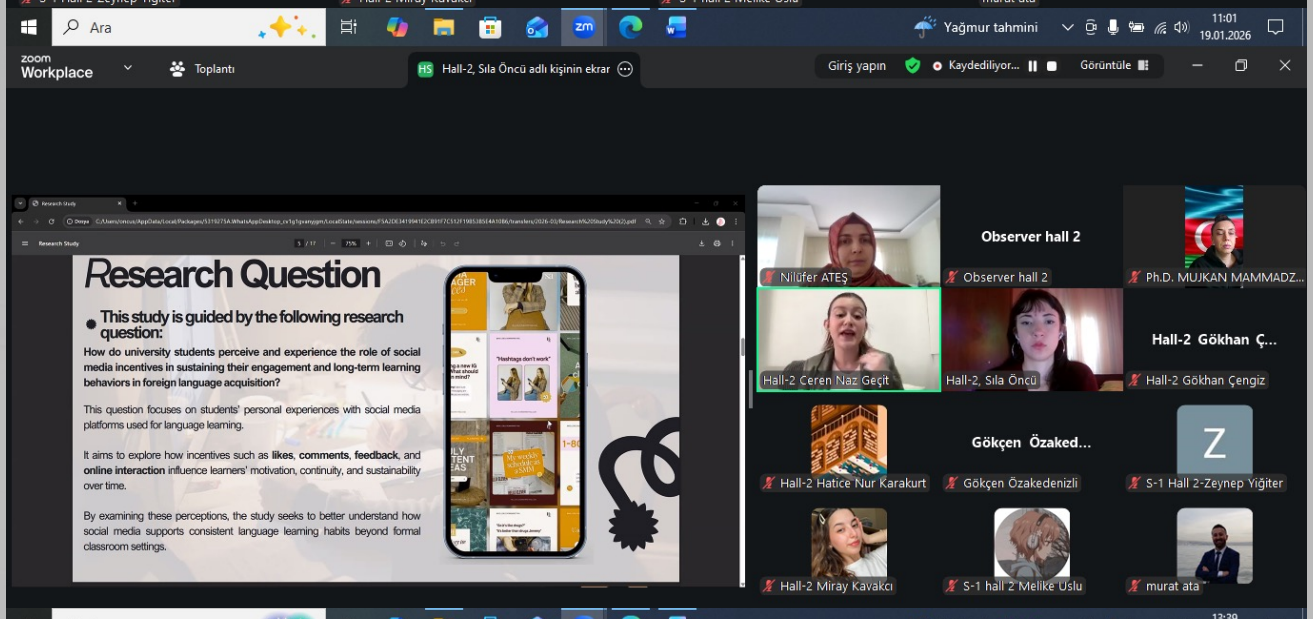


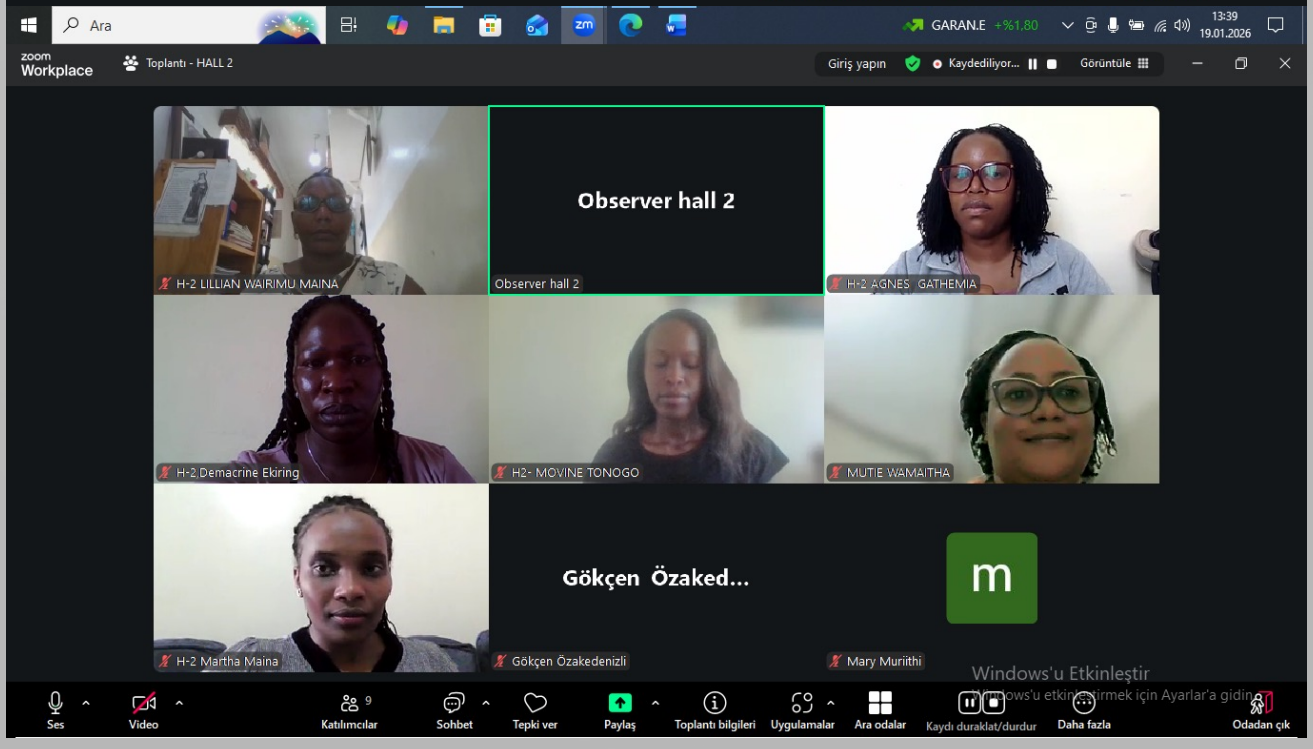




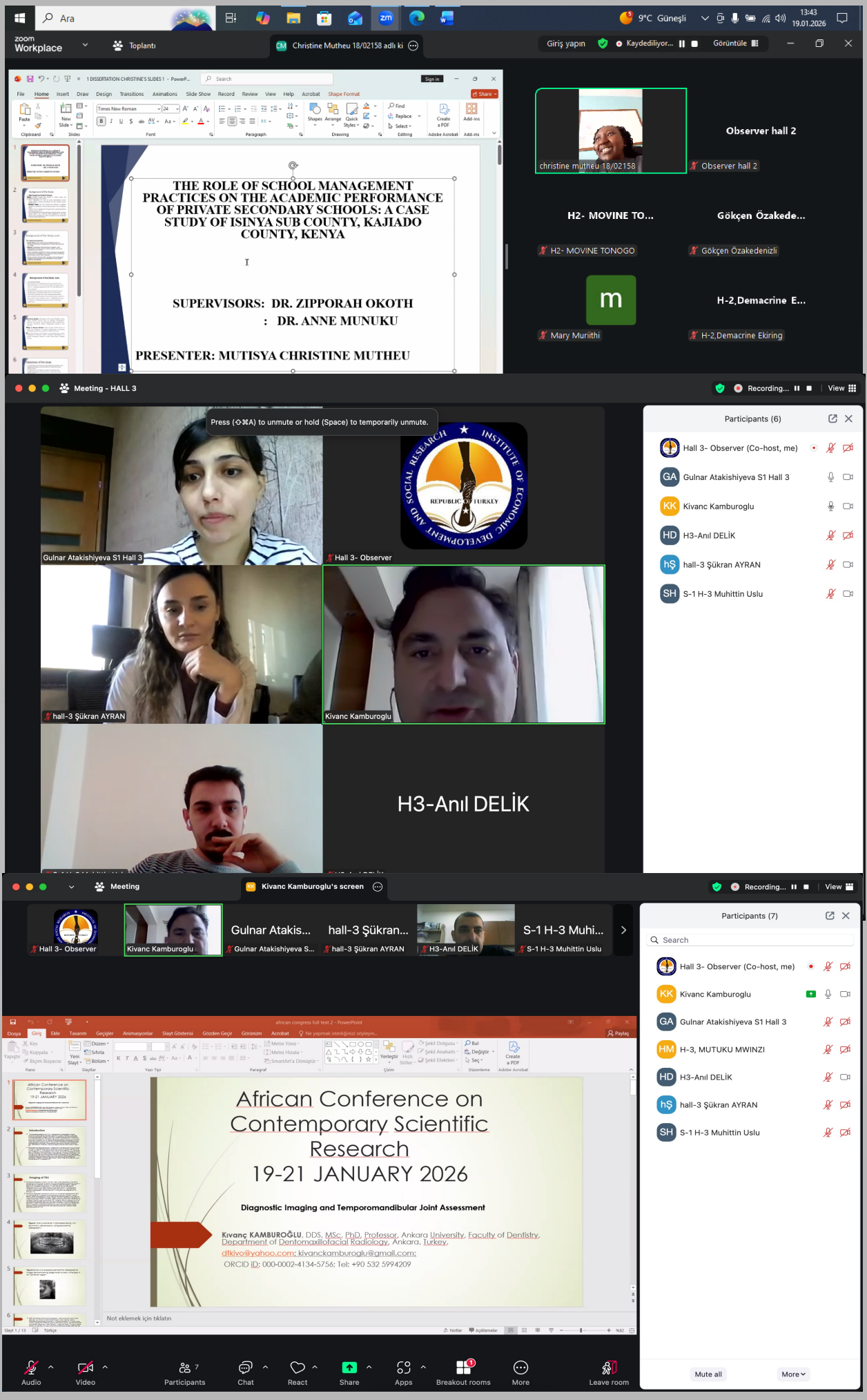
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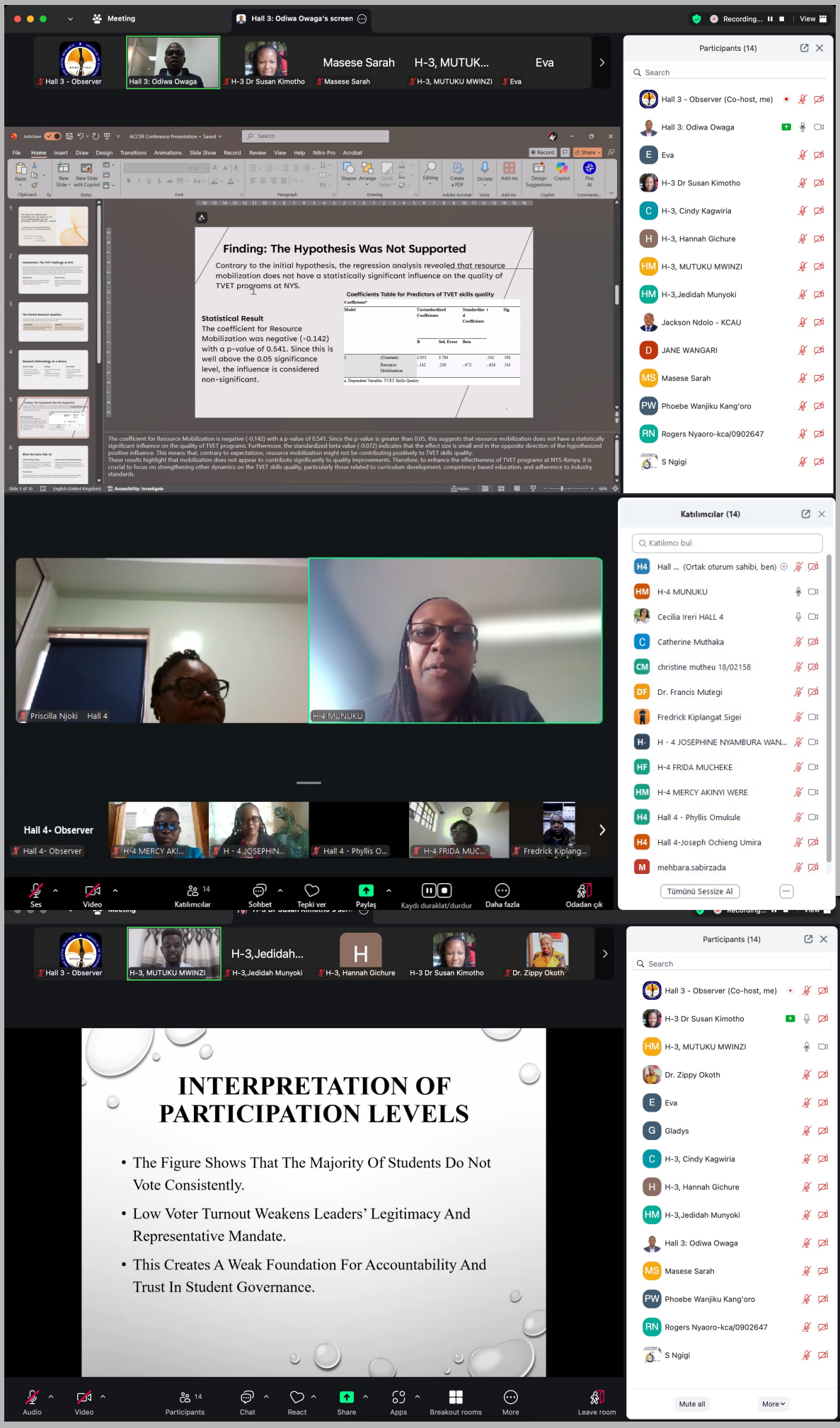


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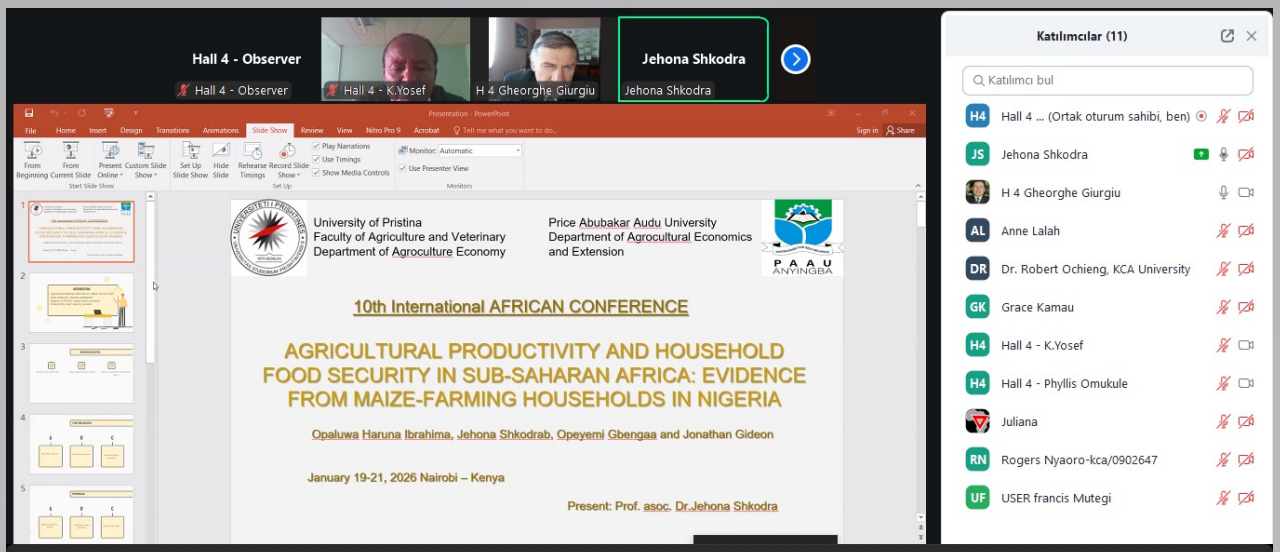


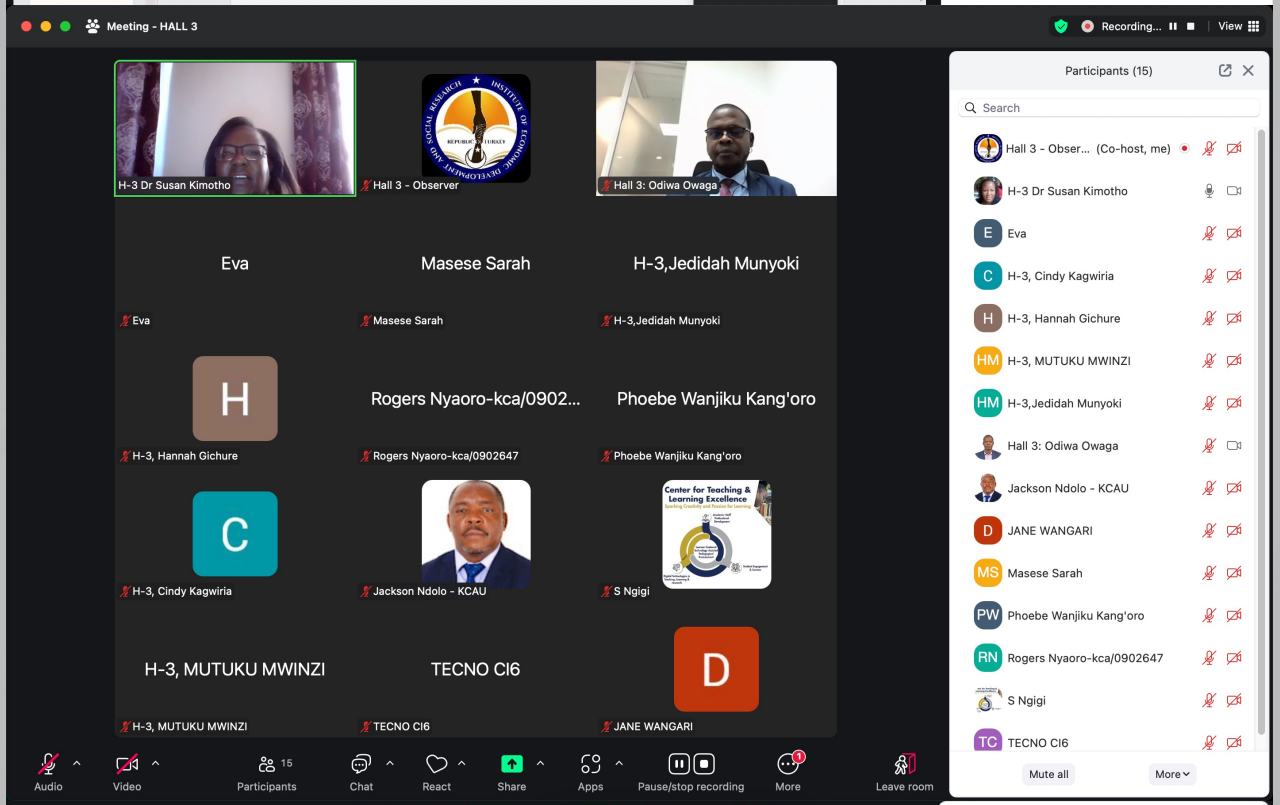
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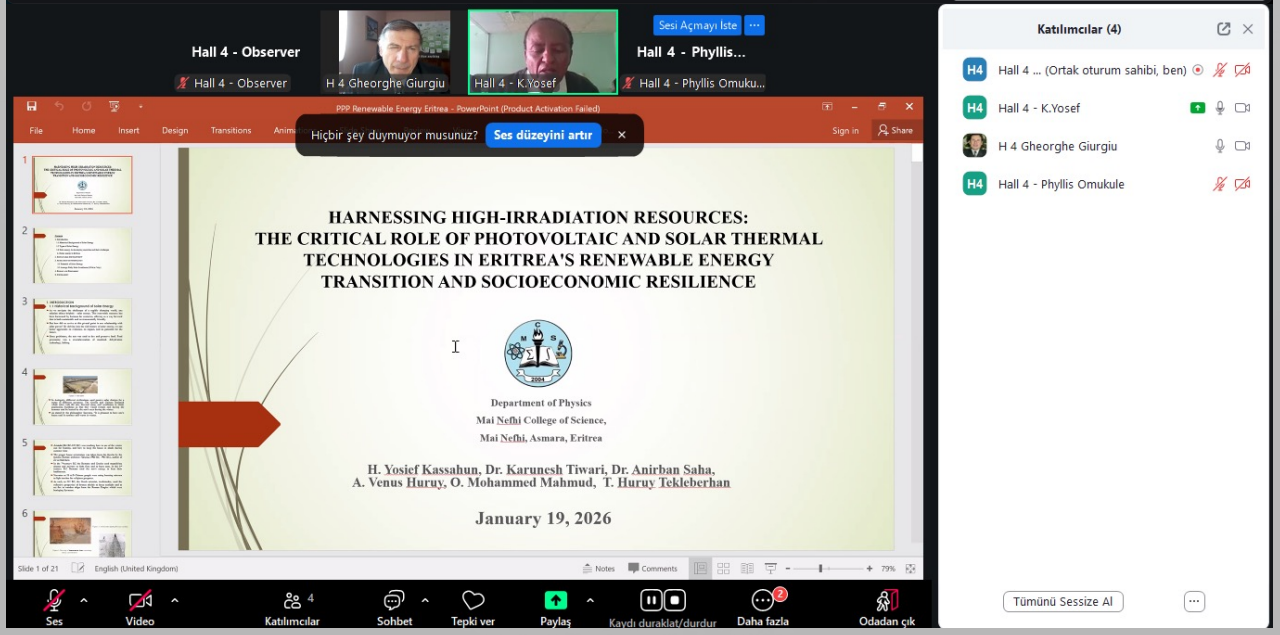
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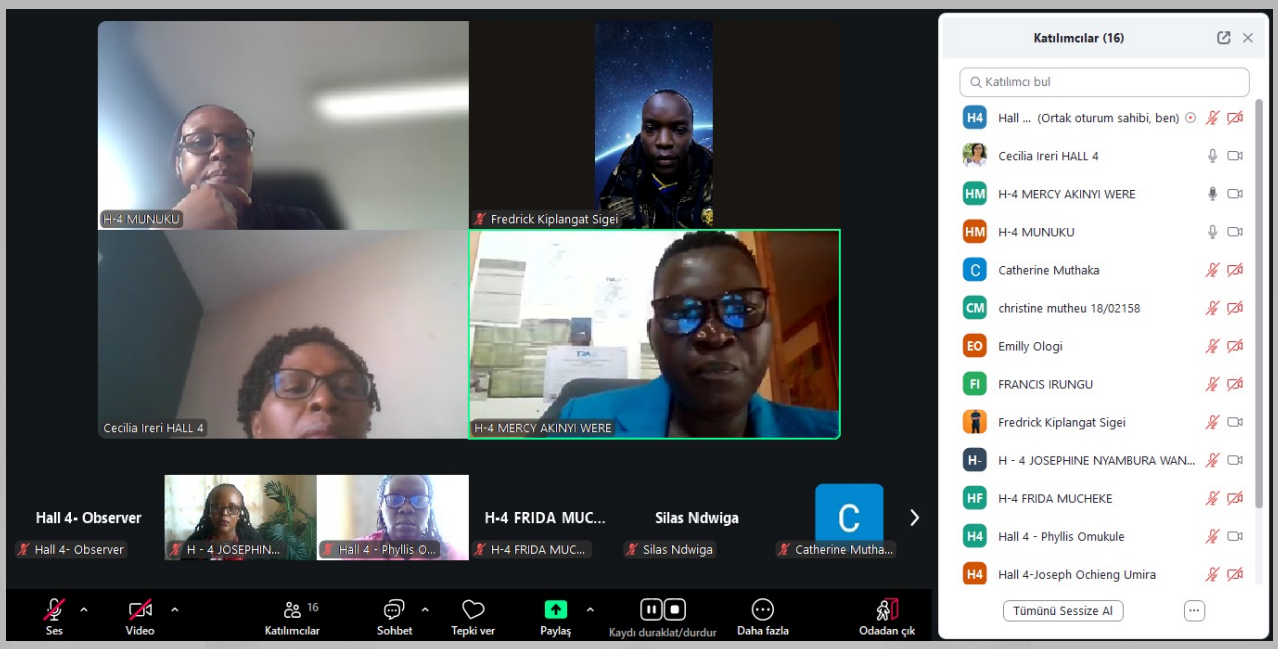
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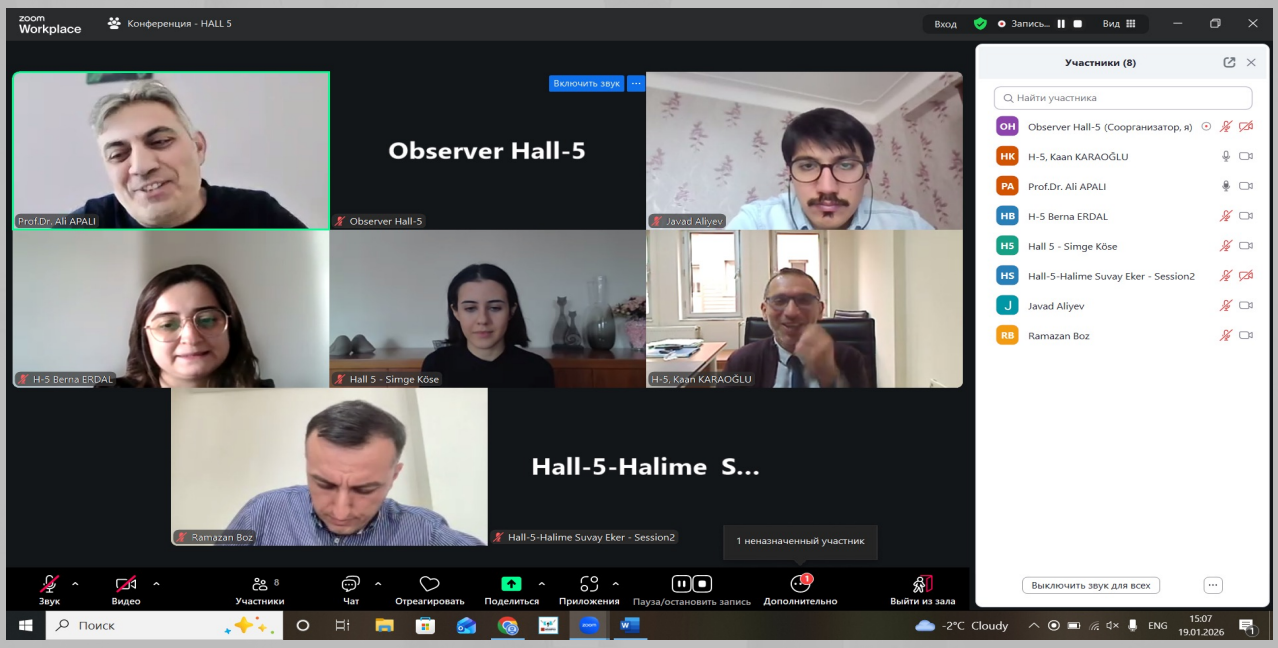




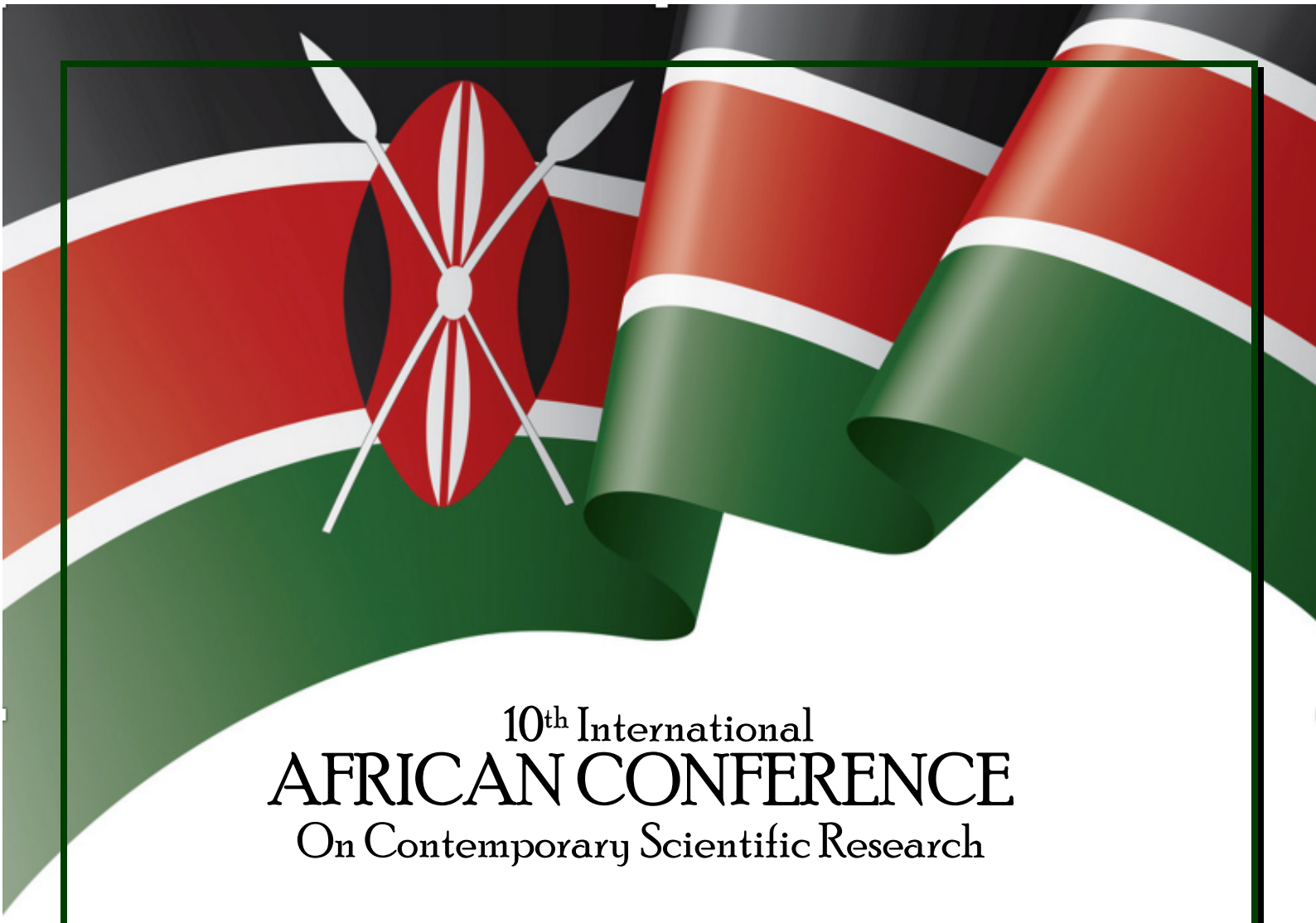


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10th International

AFRICAN CONFERENCE

On Contemporary Scientific Research

CONFERENCE PROGRAM

January 19-21, 2026
Nairobi, Kenya

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Passcode: 191919
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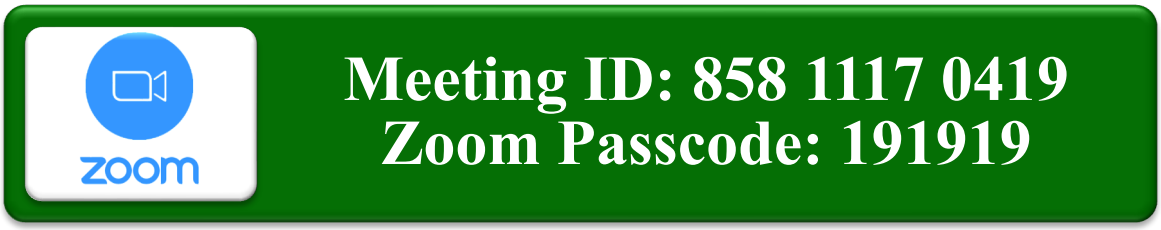
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exp. H-1, **Mehpara SABİRZADA**

Participants Countries (14)

Kenya, Türkiye, Azerbaijan, Poland, India, Eritrea, Kosovo, Morocco, Romania, USA, Ukraine, Nigeria, United Kingdom, Georgia.

Total Accepted Papers: 75
Total Accepted Papers from Türkiye: 25
Total Accepted Papers from other countries: 50



19.01.2026 | SESSION-1 | HALL-1

Nairobi Local Time: 10:00–12:00

Ankara Local Time: 10:00–12:00

MODERATOR: Prof. Dr. Adnan CELİK

Authors	Affiliation	Presentation title
Mehpara SABİRZADA	*Azerbaijan Sports Academy, Azerbaijan*	THE ROLE OF SPORT IN THE SOCIALIZATION PROCESS AND ITS IMPACT ON THE SOCIAL DEVELOPMENT OF YOUTH
Aynel VEYSELOVA	*Azerbaijan Sports Academy, Azerbaijan*	DEVELOPMENT DIRECTIONS OF SPORT IN THE CONTEXT OF YOUTH POLICY
Res. Asst. Muhammed Enes KARTAL **Assoc. Prof. Dr. Ayhan DAĞ**	*Lokman Hekim University, Türkiye*	THE EFFECT OF COOKING METHODS AND MARINADES ON THE SENSORY ACCEPTABILITY OF FISH: A CONSUMER TASTING PANEL STUDY
Res. Asst. Muhammed Enes KARTAL **Assoc. Prof. Dr. Ayhan DAĞ**	*Lokman Hekim University, Türkiye*	SENSORY ANALYSIS IN DETERMINING CONSUMER ACCEPTANCE: METHODS AND APPROACHES
Murat Özay TAŞKIN **Sümer Esin ŞENYURT**	University of Wroclaw, Poland	FROM TRAINING TO ARMS SALES: THE MULTIDIMENSIONAL ANATOMY OF TÜRKIYE'S MILITARY INFLUENCE IN SUB-SAHARAN AFRICA
Arif DEMİRER	*Bartın University, Türkiye*	THE LEGEND OF RIU DE LO'R (RIVER OF GOLD): THE CONCEPTION OF THE SENEGAL RIVER IN MEDIEVAL CARTOGRAPHY AND THE VOYAGES OF DISCOVERY
Prof. Dr. Adnan Celik	*Selcuk University, Türkiye*	"THE DOCTRINE OF DISCOVERY" AND ITS IMPACT ON AFRICA: A SOCIO-ECONOMIC GAPS THAT IS VERY DIFFICULT TO FILL
Prof. Dr. Adnan Celik	*Selcuk University, Türkiye*	EVOLUTION OF LEARNING IN ORGANIZATIONS: ENLIGHTMENT PHILOSOPHY FROM KANT TO SENGE
Ayşenur Çatar **Ayten Kılıç** **Burcu Yabaş**	*Erciyes University, Türkiye*	THE IMPACT OF INCOME INEQUALITY, UNEMPLOYMENT, AND ECONOMIC GROWTH ON AIR TRANSPORT DEMAND: EVIDENCE FROM SELECTED LATIN AMERICAN COUNTRIES
Ayşenur Çatar	*Erciyes University, Türkiye*	THE IMPACT OF TOURISM DEVELOPMENTS ON EMISSIONS: EVIDENCE FROM SELECTED COUNTRIES IN THE MEDITERRANEAN BASIN

(All speakers required to be connected to the session 10 min before the session starts)
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19.01.2026 | SESSION-1 | HALL-2

Nairobi Local Time: 10:00–12:00

Ankara Local Time: 10:00–12:00

MODERATOR: Prof. Dr. Sedat CERECİ

Authors	Affiliation	Presentation title
Prof. Dr. Sedat CERECİ	*Hatay Mustafa Kemal University, Türkiye*	THE ROLE OF ARTIFICIAL INTELLIGENCE IN NEW EDUCATION MODELS
Haluk KARAKOÇ	*Diyanet İşleri Başkanlığı, Türkiye*	AN EVALUATION OF SURAH AL-HUJURAT FROM THE PERSPECTIVE OF THE SCIENCE OF EXEGESIS
Ph.D Mujkan MEMMEDZADE	*Military Scientific Research Institute, Azerbaijan*	WAYS TO IMPROVE THE QUALITY OF THE EDUCATIONAL PROCESS IN AZERBAIJANI MILITARY INSTITUTIONS
Hatice Nur KARAKURT **Ahmet ÇAKMAK**	*Kocaeli University, Türkiye*	THE MIDDLE ADOLESCENCE PERIOD (AGES 14–17) FROM THE PERSPECTIVE OF RELIGIOUS EDUCATION
Gökçen ÖZAKDENİZLİ	Cengiz Topel Endüstri Meslek Lisesi, Türkiye	AN EXAMINATION OF PARENTAL EXPECTATIONS TOWARDS PRESCHOOL EDUCATION INSTITUTIONS IN THE TURKISH REPUBLIC OF NORTHERN CYPRUS
Asst. Prof. Dr. Murat ATA **Gökhan ÇENGİZ** **Sıla ÖNCÜ** **Ceren Naz GEÇİT**	*Dokuz Eylül University, Türkiye*	THE IMPACT OF SOCIAL MEDIA INCENTIVES ON CONTINUITY AND SUSTAINABILITY IN FOREIGN LANGUAGE LEARNING AND TEACHING: A CASE STUDY
Asst. Prof. Dr. Murat ATA **Miray KAVAKCI** **Zeynep YİĞİTER** **Melike USLU**	*Dokuz Eylül University, Türkiye*	SOCIAL MEDIA AS A TOOL FOR ENGLISH LANGUAGE LEARNING: ADULTS' LEARNERS PERCEPTIONS AND PRACTICES
Assoc. Prof. Dr. Nilüfer ATEŞ	*Yozgat Bozok University, Türkiye*	A POETIC HISTORICAL DOCUMENT CONCERNING THE LIBERATION OF EGYPT FROM FRENCH OCCUPATION

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19.01.2026 | SESSION-1 | HALL-3

Nairobi Local Time: 10:00–12:00

Ankara Local Time: 10:00–12:00

MODERATOR: Kıvanç KAMBUROĞLU

Authors	Affiliation	Presentation title
PhD Gulnar Atakishiyeva **Shafiga İbrahimova** **PhD Sevinc Mukhtarova** **Assoc. Prof. Sima Musayeva** **Assoc. Prof. Ilhama Hamdullayeva** **Assoc. Prof. Gulnara Babayeva**	*Baku State University, Azerbaijan* *Azerbaijan Technical University, Azerbaijan* *Azerbaijan State Pedagogical University, Azerbaijan*	INVESTIGATION OF THE BIOPHARMACEUTICAL IMPACT OF TPSA AND LOGP PARAMETERS ON A NOVEL DRUG CANDIDATE
PhD Gulnar Atakishiyeva **Ayten Qajar** **PhD Sevinc Mukhtarova** **Assoc. Prof. Shukufa Eyvazova** **Assoc. Prof. Naila Veysova** **Dr. Namiq Shikhaliyev**	*Baku State University, Azerbaijan* *Azerbaijan Technical University, Azerbaijan*	IN SILICO TARGET PREDICTION AND PHARMACOLOGICAL PROFILING OF A NOVEL DRUG-LIKE MOLECULE USING SWISSTARGETPREDICTION
Kıvanç KAMBUROĞLU	*Ankara University, Türkiye*	DIAGNOSIS OF VERTICAL ROOT FRACTURES: AN UPDATE
Kıvanç KAMBUROĞLU	*Ankara University, Türkiye*	DIAGNOSTIC IMAGING AND TEMPOROMANDIBULAR JOINT ASSESSMENT
Res. Asst. Şükran AYRAN **Res. Asst. Mervenur SARIKAN**	Gülhane Diş Hekimliği Fakültesi, Türkiye	INCIDENTALLY DETECTED ASYMPTOMATIC JAW LESIONS ON ROUTINE PANORAMIC RADIOGRAPHS: A CASE SERIES OF SIX PATIENTS
Asst. Prof. Dr. Muhittin Uslu **Prof. Dr. Enver Yazar**	*Yozgat Bozok University, Türkiye*	USE OF FLURALANER FOR ECTOPARASITIC PURPOSES IN POULTRY
Asst. Prof. Dr. Muhittin Uslu **Prof. Dr. Enver Yazar**	*Yozgat Bozok University, Türkiye*	ANTICOCCIDIAL AND ANTIBACTERIAL USE IN CHICKENS
Prof. Dr. Sadık DİNÇER **Dr. Anıl DELİK** **Assoc. Prof. Dr. Ümit KARAOĞULLARINDAN** **Prof. Dr. Umut ORHAN** **Assoc. Prof. Dr. Esra GÖV**	*Çukurova University, Türkiye* *Adana Alparslan Türkeş Science and Technology University, Türkiye*	ASSESSMENT OF PROGNOSTIC PARAMETERS IN ALPHA-FETOPROTEIN POSITIVE HEPATOCELLULAR CARCINOMA PATIENTS

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19.01.2026 | SESSION-1 | HALL-4

Nairobi Local Time: 10:00–12:00

Ankara Local Time: 10:00–12:00

MODERATOR: Major Gheorghe GIURGIU

Authors	Affiliation	Presentation title
Yosief Kassahun Hailu **Dr. Karunesh Tiwari** **Dr. Anirban Saha** **Venus Huruy Amanuel** **Mohammad Mahmud Osman** **Huruy Teklebrhan Teklemaryam**	*Mai Nefhi College of Science, Eritrea*	HARNESSING HIGH-IRRADIATION RESOURCES: THE CRITICAL ROLE OF PHOTOVOLTAIC AND SOLAR THERMAL TECHNOLOGIES IN ERITREA'S RENEWABLE ENERGY TRANSITION AND SOCIO-ECONOMIC RESILIENCE
Opaluwa Haruna Ibrahim **Jehona Shkodra** **Sefiat Abdullahi** **Opeyemi Gbenga** **Jonathan Gideon**	*Price Abubakar Audu University, Nigeria* *University of Prishtina. Kosovo*	AGRICULTURAL PRODUCTIVITY AND HOUSEHOLD FOOD SECURITY IN SUB-SAHARAN AFRICA: EVIDENCE FROM MAIZE-FARMING HOUSEHOLDS IN NIGERIA
Assiya Atif **Soukaina Ameur** **Houssine Ait Sir**	*Chouaib Doukkali University, Morocco*	SYNTHESIS AND BIOLOGICAL ACTIVITIES OF BENZIMIDAZOLE DERIVATIVES
Soukaina Ameur **Ahmed Bendaoud** **Abdellah Zeroual**	*Chouaib Doukkali University, Morocco*	INSIGHTS INTO ELECTRONIC STRUCTURE, ORGANIC PHOTONICS, ADME/TOXICITY PROFILES, AND TARGET-LIGAND DOCKING INTERACTIONS OF [E]-FUSED 4-ACYL-1H-PYRROLE-2,3-DIONES IN CYCLOADDITION REACTIONS WITH CYANAMIDES
ZIANI Samira **BUDAS Imane** **RABHI Imane**	Higher Institute of Nursing Professions and Health Techniques, Morocco	FROM OPTIMIZATION TO CLINICAL DECISION-MAKING: IS AI REALLY RECONFIGURING HOSPITAL MANAGEMENT?
Major Gheorghe GIURGIU **Prof. Dr. Med Manole COJOCARU**	*Deniplant-Aide Sante Medical Center, Romania* *Titu Maiorescu University, Romania*	OPTIMIZING OUTCOMES IN PSORIASIS: IMPACT OF DENIPLANT NUTRACEUTICALS

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Moderator is responsible for ensuring the smooth running of the presentation, managing the group discussion and dynamics.

19.01.2026 | SESSION-1 | HALL-5

Nairobi Local Time: 10:00–12:00

Ankara Local Time: 10:00–12:00

MODERATOR: Ananda MAJUMDAR

Authors	Affiliation	Presentation title
Abdul-Rahman Balogun Muhammed-Shittu	*British School in Baku, Azerbaijan*	EXPLORING THE EFFECTS OF FINANCIAL SUPPORT ON EXCLUSIVELY EXTRACTED AREAS OF ACADEMIC PROCRASTINATION AMONG THE STUDENTS OF SELECTED UNIVERSITIES
Ananda Majumdar	*Harvard University, USA*	METHODOLOGICAL FRAMEWORK FOR CRITICAL ANALYSIS OF INDIVIDUAL EGODOCUMENTS: BRIDGING SUBJECTIVITY AND HISTORICAL EVIDENCE
Md Mostafizur Rahman **Farjana Hridy** **Mst. masuma Shimu** **Nesar Ahmed** **Tohmina Nasrin Mitu**	*University of Rajshahi, Bangladesh*	CULTURAL INFLUENCES ON PREGNANCY CARE AMONG RURAL WOMEN IN BANGLADESH: AN APPLICATION OF THE HEALTH BELIEF MODEL
Olena Panchenko	*Oles Honchar Dnipro National University, Ukraine*	TRANSLATION OF STYLISTIC NUANCES IN FAIRY TALES
Lect. PhD Irina-Ana DROBOT	Technical University of Civil Engineering Bucharest, Romania	AN ANALYSIS OF THE POEM I HEARD A BIRD SING BY OLIVER HERFORD
Fredrick Githui **Dr. Jane Njuru**	*KCA University, Kenya*	ASSESSING THE SOCIAL ECONOMIC IMPACT OF AI IN INFORMAL LIVELIHOODS: PATHWAYS TO INCLUSIVE GROWTH AND WORKFORCE TRANSFORMATION

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19.01.2026 | SESSION-2 | HALL-1

Nairobi Local Time: 12:30–14:30

Ankara Local Time: 12:30–14:30

MODERATOR: Moses Adeolu AGOI

Authors	Affiliation	Presentation title
Moses Adeolu AGOI **Emmanuel Taiwo AGOI** **Yewande Adeyosola ODUNAYO**	*Lagos State University of Education, Nigeria* *Loughborough University, United Kingdom*	IMMERSIVE DESIGN INTERFACES: VIRTUAL REALITY (VR), AUGMENTED REALITY (AR), AND EXTENDED REALITY (XR) IN ARCHITECTURAL PRACTICE
Dr. Soufiane Ziani **Dr. Driss Khattach** **Yassine Adghiss**	*Mohammed 1st University, Morocco*	IMPACT OF CLIMATE CHANGE ON GROUNDWATER STORAGE VARIABILITY IN THE DEEP AÏN BÉNI MATHAR AQUIFER (EASTERN MOROCCAN HIGH PLATEAUS): INSIGHTS FROM SATELLITE GRAVIMETRY
EL YOUSFI Redouane	*Faculty of Science and Technology Beni Mellal, Morocco*	CLIMATE CHANGE BEYOND REPRESENTATION: LITERATURE CONFRONTING ENVIRONMENTAL COMPLEXITY
Asst. Prof. Elza Bitsadze	*Akaki Tsereteli State University, Georgia*	CLOUD COMPUTING–DRIVEN DIGITAL BUSINESS TRANSFORMATION: ARCHITECTURAL, TECHNOLOGICAL, AND STRUCTURAL PERSPECTIVES
Gugulothu Venkatesh Nayak **Pesala Sumathi** **Suddala Ramesh** **Prashanta Kumar Mandal**	Vellore Institute of Technology, India	SIGN LANGUAGE RECOGNITION AND RESPONSE VIA VIRTUAL REALITY

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19.01.2026 | SESSION-2 | HALL-2

Nairobi Local Time: 12:30–14:30

Ankara Local Time: 12:30–14:30

MODERATOR: Dr. Robert OCHIENG

Authors	Affiliation	Presentation title
KIMOTHO, SUSAN K. (PhD) **NJURU, JANE W. (PhD)**	*KCA University, Kenya*	EFFECT OF MINDFULNESS STRESS REDUCTION ON ACADEMIC ACHIEVEMENT AMONG UNIVERSITY STUDENTS IN NAIROBI CITY COUNTY, KENYA
AGNES GATHEMIA	*KCA University, Kenya*	PSYCHOSOCIAL PREDICTORS OF PREGNANCY RELATED ANXIETY: A CASE STUDY OF PUMWANI MATERNITY HOSPITAL
Martha Maina	*KCA University, Kenya*	SOCIOECONOMIC FACTORS AS CORRELATES OF POSTGRADUATE STUDENTS' SELF ACTUALIZATION: A CASE OF KCA UNIVERSITY, NAIROBI
EKIRING D. AKULEUT	*KCA University, Kenya*	AN ASSESSMENT OF CONFLICT MANAGEMENT STRATEGIES AND ORGANIZATIONAL PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN TESO NORTH SUB COUNTY, KENYANORTH SUB COUNTY, KENYA
LILLIAN WAIRIMU MAINA	*KCA University, Kenya*	PSYCHOLOGICAL PREDICTORS OF MARITAL SATISFACTION AMONG NEWLYWED COUPLES: A CASE STUDY OF SELECTED PARISHES AT THE ARCHDIOCESE OF NAIROBI, KENYA
MOVINE MORAA TONOGO	*KCA University, Kenya*	AN ASSESSMENT OF PREDICTIVE ABILITY OF EMOTIONAL INTELLIGENCE ON EMPLOYEE PRODUCTIVITY AMONG HEALTH WORKERS IN SELECTED PUBLIC HOSPITALS IN UASIN-GISHU COUNTY, KENYA
MUTISYA CHRISTINE MUTHEU	*KCA University, Kenya*	THE ROLE OF SCHOOL MANAGEMENT PRACTICES ON THE ACADEMIC PERFORMANCE OF PRIVATE SECONDARY SCHOOLS: A CASE STUDY THE KAJIADO COUNTY KENYA
MUTIE WAMAITHA	*KCA University, Kenya*	MEDIATING ROLE OF LEADERSHIP STYLE ON THE RELATIONSHIP BETWEEN CHURCH SPONSORSHIP AND ORGANIZATIONAL CULTURE IN SELECTED PRIVATE UNIVERSITIES IN NAIROBI, KENYA
Robert Joseph Ochieng	*KCA University, Kenya*	PRAGMATIC REANALYSIS AND ADAPTIVE COGNITION IN GENERATIONAL PROVERB USE: EVIDENCE FROM CHAMILECHO WAHENGA

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19.01.2026 | SESSION-2 | HALL-3

Nairobi Local Time: 12:30–14:30

Ankara Local Time: 12:30–14:30

MODERATOR: KIMOTHO, SUSAN K. (PhD)

Authors	Affiliation	Presentation title
ODIWA JACK JECONIA OWAGA	*KCA University, Kenya*	ROLE OF UNDERLYING DYNAMICS ON QUALITY OF 1TECHNICAL VOCATIONAL EDUCATION AND TRAINING PROGRAMMES WITHIN THE 1NATIONAL YOUTH 1SERVICE – KENYA
PHOEBE WANJIKU KANG'ORO	*KCA University, Kenya*	IMPACT OF PRINCIPALS' LEADERSHIP APPROACHES ON PERFORMANCE OF PUBLIC SECONDARY SCHOOL STUDENTS IN EXTRA- CURRICULAR ACTIVITIES: A CASE STUDY OF MAKADARA SUB COUNTY, KENYA
HANNAH WANJIRU GICHURE	*KCA University, Kenya*	EVALUATING ACCESS AND EQUITY IN PUBLIC SPECIAL NEEDS SCHOOLS THROUGH THE DISTRIBUTED LEADERSHIP MODEL: A STUDY IN MURANG'A COUNTY, KENYA
MUTUKU MWINZI	*KCA University, Kenya*	IMPACT OF LOW PARTICIPATION IN STUDENT ELECTIONS ON SELECTED LEADERSHIP ELEMENTS: A CASE STUDY OF KCA UNIVERSITY, KENYA
OUMA VICTOR ALLAN ONYANGO	*KCA University, Kenya*	IMPACT OF PRINCIPALS' HUMAN RESOURCE MANAGEMENT CAPACITY ON STAFF PERFORMANCE IN PRIVATE SECONDARY SCHOOLS IN EMBAKASI SUB-COUNTY, KENYA
NJOROGE RUTH WANGUI	*KCA University, Kenya*	RELATIONSHIP BETWEEN DOMESTIC ABUSE AND INTERGENERATIONAL TRAUMA IN FAMILIES: A CASE STUDY OF KIAMBU COUNTY, KENYA
TABITHA NYAMBURA GITHOGO	*KCA University, Kenya*	IMPACT OF DRUG USE ON ACADEMIC PERFORMANCE OF STUDENTS: THE CASE OF NYS ENGINEERING INSTITUTE, NAIROBI CITY COUNTY, KENYA
JEDIDAH WAYUA MUNYOKI	*KCA University, Kenya*	IMPACT OF CHILDHOOD EXPOSURE TO DOMESTIC VIOLENCE ON PARENTING PRACTICES AMONG ADULTS IN MAKUENI COUNTY, KENYA

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19.01.2026 | SESSION-2 | HALL-4

Nairobi Local Time: 12:30–14:30

Ankara Local Time: 12:30–14:30

MODERATOR: Dr. Ann MUNUKU

Authors	Affiliation	Presentation title
EMILLY ADHIAMBO OLOGI	*KCA University, Kenya*	AN EXPLORATION OF ENGAGEMENT OF FEMALE STUDENTS IN UNIVERSITY STUDENT LEADERSHIP IN SELECTED PRIVATE UNIVERSITIES IN NAIROBI CITY COUNTY, KENYA
FRIDA MWARI MUCHEKE	*KCA University, Kenya*	IMPACT OF HELICOPTER PARENTING ON SELF-HELP SKILLS AMONG YOUNG ADULTS: A CASE OF LANGATA SUB COUNTY
JOSEPHINE NYAMBURA WANG'OMBE	*KCA University, Kenya*	SOCIAL SUPPORT AND COMMUNITY ENGAGEMENT AS PREDICTORS OF EMOTIONAL RESILIENCE AFTER LOSS AMONG THE ELDERLY IN KABETE, KENYA
MERCY A. WERE	*KCA University, Kenya*	EXAMINING PARENTAL MENTAL HEALTH AS A MEDIATING FACTOR BETWEEN FAMILY DYSFUNCTION AND SCHOOL-AGED CHILDREN'S MENTAL HEALTH IN MALINDI, KENYA
Dr. Ann Munuku **Dr. Priscilla Gachigi**	*KCA University, Kenya*	EDUCATIONAL MANAGERS AND EMOTIONAL INTELLIGENCE
FREDRICK SIGEI **Priscilla Njoki**	*KCA University, Kenya*	ANALYZING ONLINE GAMING ADDICTION AND INTERVENTIONS FOR AFFECTED INDIVIDUALS AT AVIATOR BET KENYA
SILAS NDWIGA NJIRU	*KCA University, Kenya*	INVESTIGATING LEADERSHIP SKILLS UTILIZED BY PRINCIPALS IN MANAGEMENT OF STUDENTS EXPOSED TO DRUGS: A CASE STUDY OF PUBLIC SECONDARY SCHOOLS IN EMBAKASI SUBCOUNTY KENYA
FRACIER WANJIKU NGURU	*KCA University, Kenya*	RELATIONSHIP BETWEEN COUNSELING AND MARITAL QUALITY AMONG YOUNG COUPLES IN RUIRU SUBCOUNTY, KENYA
Cecilia Ireri **Gachigi Priscilla**	*KCA University, Kenya*	SOIL EROSION SUSCEPTIBILITY ANALYSIS IN THE ECOTONE OF THE MARIVOE RIVER CATCHMENT OF EMBU COUNTY IN KENYA, UNDER CLIMATE CHANGE VARIABILITY

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19.01.2026 | SESSION-2 | HALL-5

Nairobi Local Time: 12:30–14:30

Ankara Local Time: 12:30–14:30

MODERATOR: Prof. Dr. Ali APALI

Authors	Affiliation	Presentation title
Simge KÖSE **Halime SUVAY EKER**	*Independant Researcher* *İstanbul Gedik University, Türkiye*	THE DARK SIDE OF THE DIGITAL WORLD: SOCIAL MEDIA-RELATED ANXIETIES, RELATIONSHIP PROBLEMS AND THEIR IMPACT ON IDENTITY
Javad ALIYEV	*Ministry of Science and Education of the Republic of Azerbaijan*	ZAKAT, REDISTRIBUTION, AND ECONOMIC STABILITY: A THEORETICAL MACROECONOMIC PERSPECTIVE
Berna ERDAL **S. Sıddık CİNDORUK** **Abdullah AKBAŞ**	*Bursa Uludağ University, Türkiye*	NANO-CLIMATE SCALE URBAN RESILIENCE: THE CASE OF BURSA PROVINCE
Kaan KARAOĞLU	*Recep Tayyip Erdogan University, Türkiye*	ANALYTICAL PERFORMANCE EVALUATION of A XANTHENE-BASED CHEMODOSIMETER FOR MERCURY DETECTION in WATER SAMPLES
Prof. Dr. Ali APALI **Ramazan BOZ**	*Mehmet Akif Ersoy University, Türkiye*	AN EXAMINATION OF THE BUDGETING AND ACCOUNTING SYSTEM IN MUNICIPALITIES
Prof. Dr. Ali APALI **Ramazan BOZ**	Mehmet Akif Ersoy University, Türkiye	AN ANALYSIS OF THE ENVIRONMENTAL COSTS OF ANTALYA METROPOLITAN MUNICIPALITY FROM AN ENVIRONMENTAL ACCOUNTING PERSPECTIVE

(All speakers required to be connected to the session 10 min before the session starts)
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THE ROLE OF SPORT IN THE SOCIALIZATION PROCESS AND ITS IMPACT ON THE SOCIAL DEVELOPMENT OF YOUTH

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Abstract

In contemporary societies, the social development and healthy socialization of young people are regarded as issues of strategic importance. The process of socialization is characterized by an individual's acquisition of societal norms, values, and behavioral patterns, the learning of social roles, and integration into the system of social relations. From this perspective, sport is not merely a means of physical activity and the promotion of a healthy lifestyle; it also functions as a powerful mechanism of socialization and a significant social institution. The primary aim of this study is to analyze, from a scientific and theoretical standpoint, the role of sport in the socialization process of young people and its multifaceted impact on their social development.

The study examines the influence of sporting activities on the formation of young people's social behaviors, the internalization of collective values, the development of social identity, and the strengthening of social integration. Within the context of the primary and secondary stages of socialization, sport is substantiated as an important institution of secondary socialization that plays a crucial role in youth social development following the family and educational environments. The sporting context provides young people with opportunities to acquire social qualities such as cooperation, competition, discipline, responsibility, and mutual respect through practical engagement.

The research demonstrates that participation in sports, particularly team sports, has a positive effect on the formation of collective identity, group belonging, and a sense of social solidarity among young people. Sporting activities create a favorable social environment for the formation and expansion of social capital, which, in turn, offers significant advantages for young people in their future social and professional lives. At the same time, sport plays an important role in the development of leadership skills, communication culture, and decision-making abilities.

The study also places special emphasis on the significance of sport in terms of social integration and inclusivity. The unification of young people from diverse social, cultural, and ethnic backgrounds around shared goals through sports contributes to the reduction of social differences and the strengthening of social cohesion. Furthermore, from a gender perspective, sport is identified as an important means of enhancing girls' social participation and self-confidence.

In conclusion, it is scientifically substantiated that sport exerts a comprehensive and systematic influence on the socialization process of young people. Sporting activities hold strategic importance for society in terms of transmitting social values, shaping positive social behaviors, and ensuring social development. Therefore, it is considered essential to prioritize sport as a key direction within education and youth policy.

Keywords: sport sociology, socialization, youth, social development, social capital

INTRODUCTION

In the contemporary period, the sustainable development of societies directly depends on the proper formation of the social, cultural, and moral potential of the younger generation. In this regard, the process of youth socialization constitutes one of the main objects of study in the social sciences, particularly in sociology, pedagogy, and psychology. Socialization refers to the process through which individuals internalize the norms and values of society, learn social roles, and become integrated into the system of social relations. Under conditions of globalization, digitalization, and the transformation of social relations, changes in the mechanisms of youth socialization further accentuate the role of social institutions such as sport.

Historically, sport has been regarded not only as a means of physical training and health preservation, but also as an important social environment in which social relations are formed, collective values are transmitted, and norms of social behavior are internalized. According to contemporary sociological approaches, sport as a social institution establishes a system of normative frameworks, social roles, and behavioral models. By influencing young people's social lives, this system makes a significant contribution to their formation as individuals. In particular, school and youth sport play a crucial role in the secondary stage of socialization by complementing the social experience acquired within the family and educational environments. The involvement of young people in sports activities plays an important role in regulating their social behavior, developing skills of collective action, and fostering a sense of social responsibility. The sports environment provides young people with practical opportunities to balance competition and cooperation, to comply with rules, and to learn the principles of fair play and a culture of mutual respect. These qualities create a foundation for young people to function successfully not only in the field of sport but also across various spheres of social life.

At the same time, sport serves as an important factor in the formation of young people's social identity. A sense of belonging to a team, club, or national squad strengthens feelings of collective identity and social affiliation among youth. This process contributes to the consolidation of social solidarity and enables young people to perceive themselves as active members of society. Moreover, sport functions as an effective means of ensuring social integration and inclusiveness, fostering mutual understanding among different social and cultural groups.

The purpose of the article is to analyze the role of sport in the socialization process and its impact on the social development of youth from a sociological-theoretical perspective, and to systematically assess these effects on the basis of contemporary scientific approaches and empirical studies. The article substantiates the social significance of sport within the context of youth policy and the education system and emphasizes the importance of institutional approaches in this field.

METHOD

In contemporary sociological theories, the concept of socialization is explained as a multifaceted and continuous process that ensures an individual's adaptation to the social structures, norms, and value systems of society. Socialization serves as the primary mechanism that enables the transformation of an individual from a biological being into a social being, allowing them to internalize social roles, shape patterns of behavior, and assume a place within the system of social relations. According to classical and modern sociological approaches, socialization takes place in two main stages—primary and secondary. Primary socialization occurs within the family and school environments, providing the individual with an initial

introduction to social life, whereas secondary socialization is realized through broader social institutions such as sport, labor activity, public organizations, and the cultural environment. From this perspective, sport functions as an influential social institution that plays a significant role in the secondary stage of socialization.

Talcott Parsons regarded socialization as a fundamental mechanism ensuring the continuity and stability of the social system. According to his structural-functional approach, social equilibrium may be disrupted if society fails to transmit its values and normative system to new generations. In this regard, sport creates a specific social environment in which collective values are practically implemented and reinforced. Through sports activities, individuals not only acquire physical skills but also learn to comply with social rules, accept social roles, and reconcile personal interests with collective ones. This process contributes to maintaining the functional continuity of the social system.

As a social institution, sport possesses a defined normative framework, social roles, and behavioral rules. Each sport is based on a system of written and unwritten rules that require strict adherence from participants. This, in turn, fosters the development of discipline, responsibility, and behavior consistent with mechanisms of social control among young people. At the same time, the sports environment functions as a social laboratory in which social relations such as cooperation and competition are experienced in a balanced manner. Within this context, young people learn to cooperate with teammates, engage in healthy competition with opponents, and accept defeat.

Pierre Bourdieu's theory of social capital is of particular importance in explaining the position of sport within the social structure. Bourdieu viewed sport as a favorable field for the formation and expansion of social capital, emphasizing that social connections acquired through sports activities influence an individual's social position and future opportunities. Social relations established within the sports environment contribute to the expansion of young people's social networks, the strengthening of social trust, and the acceleration of their integration into society. From this perspective, sport functions not only as a means of individual development but also as an important mechanism for ensuring social mobility.

The role of sport in the formation of young people's social identity is another issue of significant scholarly interest. Social identity is characterized by an individual's sense of belonging to particular social groups and the internalization of those groups' values and behavioral norms. Participation in team sports strengthens feelings of collective identity, group belonging, and social loyalty among young people. This process can be explained within the framework of Henri Tajfel's social identity theory. According to Tajfel, individuals define their position within the social environment by identifying with specific groups. In this respect, a sports team serves as an important source of social identity for young people and guides their social behavior.

Sports activities also have a significant impact on the formation of social behaviors. The sports environment creates a real social space in which social norms and values are applied not only theoretically but also in practice. Qualities such as adherence to rules, principles of fair play, ethical conduct, and respect for opponents enhance young people's sense of social responsibility. Empirical studies indicate that young people who regularly engage in sports exhibit higher levels of social adaptation and lower tendencies toward aggressive and deviant behavior. This highlights the function of sport in social control and social regulation.

Sport also functions as an effective means of ensuring social integration and inclusiveness. Young people from diverse social, ethnic, and cultural backgrounds unite around common goals through sports activities, operating within an environment of mutual understanding and tolerance. This process contributes to the mitigation of social differences and the strengthening

of social cohesion. In the documents of international organizations, particularly UNESCO, sport is recognized as a universal instrument for promoting social integration and reinforcing social equality.

From a gender perspective, sport holds particular significance in the social development of young people. The involvement of girls in sports positively influences the formation of their social activity, self-confidence, and leadership skills. Sports participation contributes to the weakening of gender stereotypes, the rethinking of social roles, and the strengthening of gender equality. In this regard, sport serves as an important platform for the realization of gender equality in the social sphere.

The sports environment creates favorable conditions for the development of leadership and social skills among young people. The distribution of responsibilities within teams, captaincy roles, and decision-making processes enhance young people's social management skills. These skills subsequently provide significant advantages in their professional and public activities. From this standpoint, sport can be regarded as an important social institution that enhances the qualitative indicators of young people's social capital.

At the same time, certain risk factors exist within the socialization process through sport. Unhealthy competition, aggressive behavior, and, at times, negative fan culture may adversely affect young people's social development. For this reason, strengthening mechanisms of social control, ethical education, and pedagogical support within the sports environment is considered essential. Coordinated efforts among coaches, teachers, and parents serve to realize the socializing potential of sport in a positive direction.

The involvement of young people in sports should constitute an integral component of state social and youth policy. Expanding sports programs within educational institutions, promoting mass sport, and developing sports infrastructure play an important role in ensuring young people's social development. Institutional approaches implemented at the state level enable the effective utilization of sport's socialization potential and strengthen the social sustainability of society. Thus, sport occupies a special place in contemporary development strategies as a social institution exerting a complex and systematic influence on the socialization of youth.

RECOMMENDATIONS

The analysis demonstrates that sport exerts a multifaceted and systematic influence on the socialization process of youth. Sport functions not only as a means of physical training but also as a social institution, playing a crucial role in shaping individual social behaviors, collective values, and social identity. Both team and individual sports activities facilitate the development of cooperation, discipline, social responsibility, leadership skills, and decision-making abilities among young people. At the same time, sport promotes social integration and inclusiveness, contributing to mutual understanding and cohesion among diverse social and cultural groups. From a gender perspective, sport serves as an effective tool for enhancing the social engagement and self-confidence of girls.

Moreover, potential risks associated with sport—such as unhealthy competition, aggression, and deviant behaviors—can be minimized through social control mechanisms and pedagogical support. With the support of state policy and institutional approaches, the engagement of youth in sport ensures their social development, strengthens their social capital, and reinforces the social sustainability of society. Consequently, sport in the contemporary period functions as a strategic means for youth socialization and social development, and its development as a priority area within education and youth policy is of critical importance.

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DEVELOPMENT DIRECTIONS OF SPORT IN THE CONTEXT OF YOUTH POLICY

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Abstract

The study provides a comprehensive analysis of the development directions of sport in the context of youth policy from scientific-theoretical and socio-practical perspectives. In the contemporary period, youth policy functions as an essential component of states' long-term socio-economic and cultural development strategies. In ensuring the effectiveness of this policy, sport plays a significant role as a specific social institution. The article substantiates the importance of sport in strengthening young people's physical health, promoting a healthy lifestyle, and fostering socialization and patriotic education.
Within the framework of the research, the scientific-theoretical essence of the concepts of youth policy and sport is elucidated, and their interrelationship is analyzed in the context of public policy. It is demonstrated that the development of mass sport serves as an important mechanism for the effective organization of young people's leisure time and for the reduction of social risks. At the same time, the role of professional sport in revealing the talent potential of youth and enhancing competitiveness in the international sports environment is emphasized.
The study particularly highlights the importance of developing sport on the basis of the principles of inclusiveness and social equality, substantiating the necessity of involving young people with disabilities in sports in terms of social integration. The impact of digitalization and innovative technologies on youth sports activities, as well as the new opportunities created by e-sports and digital platforms, is assessed from a scientific perspective.
As a result of the analysis, it is concluded that the development of sport in the context of youth policy requires systematic, comprehensive, and innovative approaches. State regulatory and legal mechanisms, institutional support, and the adaptation of international experience play a decisive role in ensuring sustainable development in this field.

Keywords: youth policy, sports policy, mass sport, social development, healthy lifestyle.

INTRODUCTION

In the contemporary period, youth policy serves as one of the priority directions in the social, cultural, and strategic development of states. The development of young people, their physical and mental well-being, social engagement, and realization of creative potential play a decisive role in ensuring the long-term development of society. Sport, in turn, constitutes an essential instrument for the physical and psychological development of youth, their socialization, and the formation of leadership and cooperation skills. In particular, the rapid advancement of globalization, urbanization, and digitalization has led to a decline in the physical activity levels of young people, necessitating increased attention to the field of sport within state policy.
The interaction between youth policy and sport extends beyond physical development; it also contributes to the formation of social and moral values, as well as the development of personal qualities such as discipline and responsibility. Recognition of sport as a priority area within

youth policy in state programs and strategic documents ensures the implementation of its diverse social and psychological functions. Moreover, sport serves as an effective means for the productive organization of young people's leisure time, the integration of youth from social risk groups, and the creation of equal opportunities.

The purpose of this article is to analyze, on a scientific-theoretical basis, the directions of sport development within the context of youth policy, to determine the role of state institutional and legal support, and to identify the current challenges and prospective opportunities in both mass and professional sports. Within the scope of this study, the role of sport in promoting social integration, a healthy lifestyle, patriotic education, and the realization of talent potential among youth is examined, and comparative approaches with international experience are presented.

METHOD

The topic of the scientific-theoretical foundations of youth policy and sport holds significant importance in the social and strategic policies of contemporary states. Youth policy is understood as a purposeful system of activities that ensures the development, social protection, and integration of the younger generation into society. In academic research, youth policy is characterized as a complex field that facilitates the realization of young people's potential and their active participation in socio-political and socio-economic processes. Sport, as a social institution, is one of the primary means of enhancing a society's physical culture, promoting a healthy lifestyle, and strengthening the socialization process.

The strategic role of sport in state youth policy is directly linked to the formation of a healthy young generation and the maintenance of social security. Through its preventive and formative functions, sport improves the health indicators of youth, prevents harmful habits, and increases physical activity. This is regarded as an integral component of the state's social security and development strategy.

Mass sport plays a crucial role in the social adaptation of young people and the effective organization of their leisure time. Expanding sports opportunities in educational institutions, creating open sports facilities, and constructing modern sports infrastructure are key measures that increase youth interest in sport. The modernization of physical education curricula in schools and higher education institutions, along with the operation of supplementary sports clubs, also plays an important role in this regard.

The professional sports sector ensures the identification of talented youth and their systematic training. Sports schools, academies, and selection mechanisms not only enhance young people's competitiveness in international arenas but also expand opportunities for social advancement and self-realization. This process aligns with the principles of social justice and equal opportunity within youth policy.

Sport is also an effective ideological tool for fostering patriotism among youth. Participation in international competitions under the national flag contributes to the country's international image and strengthens national pride and cohesion. Military-sports games and the promotion of national sports disciplines are particularly significant in this context.

Within the framework of inclusiveness and social equality, involving young people with physical disabilities in sports is essential. The Paralympic and Special Olympics movements serve these purposes, preventing social isolation and facilitating the integration of youth into society.

Digitalization and innovative technologies have transformed young people's engagement with sport, creating new opportunities. Online platforms, mobile applications, and digital monitoring systems stimulate youth sports activity. E-sports and virtual sports environments

have gained popularity among youth, and their proper regulation by the state constitutes one of the current priorities in youth policy.

The development of sports infrastructure is a key condition for engaging youth in sports. Maintaining regional balance, ensuring equal opportunities for rural and urban youth, constructing modern sports complexes, and modernizing existing facilities are among the main priorities of state policy. International experience shows that in developed countries, youth policy and sports are regulated through a comprehensive approach; models from Scandinavian countries, Japan, and South Korea can serve as examples adaptable to the development of a national model.

The normative-legal framework constitutes the institutional basis for the development of sport within youth policy. Laws, state programs, and strategic documents ensure coordination of activities, while improvements in legal mechanisms enhance the effectiveness of sports policy. These factors play a decisive role in ensuring the comprehensive, systematic, and sustainable development of sport within the context of youth policy.

RECOMMENDATIONS

The scientific analysis demonstrates that the development of sport within the context of youth policy is a multifaceted process of strategic importance. Sport serves not only to enhance the physical fitness of young people but also functions as a key instrument for their social integration, patriotic education, development of leadership and cooperation skills, and the realization of talent potential. Mass sport programs are particularly significant for the effective organization of youth leisure time, the integration of social risk groups into society, and the promotion of a healthy lifestyle. Professional sport holds strategic importance in identifying talented youth, providing systematic training, and enhancing competitiveness on the international stage.

Inclusive sport programs facilitate the integration of young people with physical disabilities into society, thereby promoting social equality. Paralympic and Special Olympics programs prevent social isolation and encourage active participation of youth in societal life. Simultaneously, the adoption of digitalization and innovative technologies increases youth engagement in sports, creating new participation opportunities through virtual sports environments and e-sports platforms.

The development of sports infrastructure and the provision of equal opportunities across regions enhance the effectiveness of state policy. The construction of modern sports complexes and the modernization of existing facilities facilitate youth participation in sports and enable the full realization of their potential. Studying and adapting international best practices contributes significantly to the improvement of national sports policy and further reinforces the strategic and institutional significance of sport within youth policy.

The normative-legal framework constitutes one of the main factors ensuring the effectiveness of sports policy. State programs, legislative acts, and strategic documents coordinate sports activities and support the implementation of youth policy priorities. Legal and institutional support, together with planned and systematic approaches, create the conditions for nurturing a healthy, active, and socially responsible generation.

Thus, state priorities and systematic approaches to sport play a decisive role in the physical, social, and moral development of youth. To ensure the sustainable and effective development of sport within youth policy, it is essential to expand mass and professional sports programs, implement inclusive and innovative approaches, develop modern infrastructure, and adapt

international best practices. Together, these measures significantly contribute to the upbringing of a healthy, active, creative, and socially responsible generation while supporting the achievement of the state's strategic objectives.

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THE EFFECT OF COOKING METHODS AND MARINADES ON THE SENSORY ACCEPTABILITY OF FISH: A CONSUMER TASTING PANEL STUDY

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Abstract

Food sensory analysis has been gaining increasing importance in the evaluation of product quality and plays a critical role in the assessment of new and healthy foods intended for consumers (Sirangelo, 2019). Sensory evaluation is an analytical method based on human sensory perception and is conducted under double-blind conditions. Beyond merely assessing the taste of food, sensory evaluation is also capable of identifying changes in aroma, color, surface characteristics, and overall taste perception (de Albuquerque et al., 2022).

In the sensory panel test, two different cooking methods (oven roasting and shallow frying), two types of marinades (Marinade-1: olive oil, lemon juice, thyme, and salt; Marinade-2: olive oil, apple vinegar, thyme, and salt), two types of dried fruits (cranberry and jujube), and three types of fish (grey mullet, trout, and bonito) were used. The panel was conducted over two days with 10 untrained panelists using a nine-point hedonic scale. The panelists evaluated 30 g portions of fish samples and scored odor, color, juiciness, flavor, and overall acceptability on a scale from 1 to 9, where 1 indicated “disliked extremely” and 9 indicated “liked extremely.” The participants selected for the panel were between 25 and 50 years of age (Ministry of National Education, 2012). The samples were randomly coded using three-digit numbers. The sensory evaluation was conducted after 15:30 (Altuğ, 2000).

When overall acceptability scores were compared, the most preferred fish in both the shallow-frying and oven-cooking methods was identified as grey mullet cooked with dried jujube (7.10 ± 1.85; 7.60 ± 1.34). The least preferred samples were bonito control fish prepared by shallow frying (5.10 ± 2.84) and bonito with cranberry prepared by oven cooking (5.50 ± 2.01). Marinade application was found to have a particularly positive effect on the juiciness parameter.

In this study, cooking methods and marination applications were found to significantly influence the sensory acceptability of fish. The vitamin C content and natural antioxidant compounds present in the dried fruits used in the marinades were observed to positively support aroma, flavor, and overall acceptability perceptions. While the findings highlight the ability of sensory analyses to reflect consumer preferences, they also demonstrate that marinades enriched with functional components have the potential to enhance both sensory quality and nutritional value in fishs.

Keywords: Marination, Cooking Method, Sensory Panel Test, Jujube, Cranberry.

PİŞİRME YÖNTEMİ VE MARİNASYONUN BALIKLARIN DUYUSAL KABULÜNE ETKİSİ: TÜKETİCİ TADIM PANELİ ÇALIŞMASI

Özet

Gıdalarda duyusal analiz, ürün kalitesinin değerlendirilmesinde giderek daha fazla önem kazanmakta ve tüketicilere yönelik yeni ve sağlıklı gıdaların değerlendirilmesinde kritik bir rol üstlenmektedir (Sirangelo, 2019). Duyusal değerlendirme, insan duyusal algısına dayanan ve çift kör koşullar altında yürütülen bir analiz yöntemidir. Duyusal değerlendirme yalnızca gıdanın tadını ölçmekle kalmayıp; aynı zamanda aroma, renk, yüzey özellikleri ve tat algısındaki değişimleri de belirleyebilmektedir (de Albuquerque ve ark., 2022).

Duyusal panelist testinde iki ayrı pişirme yöntemi (fırında kızartma (roasting) ve sığ yağda kızartma), iki adet marinasyon türü (Marinat-1: zeytinyağı, limon suyu, kekik ve tuz; marinat-2: zeytinyağı, elma sirkesi, kekik ve tuz), iki adet kuru meyve çeşidi (turna yemişi ve hünnap) ve üç tür de balık (kefal, alabalık, palamut) kullanılmıştır. Panel, dokuzlu hedonik ölçek kullanılarak eğitilmemiş 10 panelistle, 2 günde tamamlanmıştır. Panelistler kendilerine sunulan 30'ar gram balıkları tüketerek koku,renk, sululuk, lezzet ve genel beğeni parametrelerini, '1: son derece beğenmedim, 9: son derece beğendim' olacak şekilde 1'den 9'a kadar puanlamıştır. Panele seçilen katılımcılar 25-50 yaş aralığındadır (Milli Eğitim Bakanlığı, 2012). Örnekler rastgele üç sayı ile kodlanmıştır. Panel 15:30'dan sonra yapılmıştır (Altuğ, 2000).

Genel beğeni skorları karşılaştırıldığında, sığ yağda kızartma ve fırında pişirme yönteminde en çok beğenilen balık, hünnap kurusu ile pişirilen kefal olarak belirlenmiştir (7.1±1.85; 7.60±1.34). En az beğenilen balık ise sığ yağda kızartma yönteminde palamut-kontrol balıkları (5.10±2.84); fırında pişirme yönteminde ise palamut-turna yemişi (5.50±2.01) olarak bulunmuştur. Marinasyonun özellikle sululuk parametresini geliştirici bir etki gösterdiği saptanmıştır.

Bu çalışmada, pişirme yöntemi ve marinasyon uygulamalarının balıkların duyusal kabulünü anlamlı düzeyde etkilediği belirlenmiştir. Marinasyonlarda kullanılan kuru meyvelerin içerdiği C vitamini ve doğal antioksidan bileşiklerin, ürünün aroma, tat ve genel beğeni algısını olumlu yönde desteklediği görülmüştür. Elde edilen bulgular, duyusal analizlerin tüketici tercihlerini yansıtma gücünü ortaya koyarken, fonksiyonel bileşenlerle zenginleştirilmiş marinasyonların balıklarda hem duyusal kaliteyi hem de besinsel değeri artırma potansiyeline sahip olduğunu göstermektedir.

Anahtar Kelimeler: Marinasyon, Pişirme Yöntemi, Duyusal Panelist Testi, Hünnap, Turna Yemişi.

SENSORY ANALYSIS IN DETERMINING CONSUMER ACCEPTANCE: METHODS AND APPROACHES

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Abstract

Sensory analysis is an evaluation method that examines the characteristics of a product or food—such as texture, flavor, taste, appearance, and aroma—through the senses of sight, smell, taste, touch, and hearing of panelists. Historically, sensory analysis has been regarded as a complementary approach to technological and microbiological safety in the assessment of food quality. However, the significant developments achieved in recent years and its increasing impact have positioned sensory analysis as one of the most important methodologies in innovation and application processes to ensure final product acceptance by consumers (Ruiz & Herrero, 2021). Sensory taste tests and analytical methods encompass a wide range of methodologies, including discrimination tests, descriptive analyses, consumer acceptance tests, and advanced profiling techniques. These approaches are indispensable tools in food science for objectively measuring and profiling the sensory characteristics of products and for understanding consumer expectations (Marques et al., 2022). The use of computer technologies to support panelist–consumer interaction and the real sensory experience further expands the scope of these methods (Drake, 2023). In sensory analysis studies, different scales are employed depending on the purpose of the test. The most widely used tool for evaluating consumer liking and acceptance is the nine-point hedonic scale, ranging from 1 “dislike extremely” to 9 “like extremely” (Wichchukit & O’Mahony, 2014). Just-About-Right (JAR) scales are used to determine whether product attributes are at optimal levels and to identify reformulation needs; these scales are particularly useful for characterizing deviations from the ideal in attributes such as sweetness, acidity, and firmness (Li et al., 2014). In descriptive sensory analyses conducted with trained panelists, line scales are commonly preferred (Gomide et al., 2021). In addition, among consumer-based rapid sensory profiling approaches, the Check-All-That-Apply (CATA) method enables the rapid generation of a sensory profile based on panelists selecting sensory terms that describe the product (Jaeger et al., 2015). Recent literature also reports the increasing use of modern methods such as CATA, RATA, Flash Profile, and Temporal Dominance of Sensations (TDS) as alternatives or complements to classical descriptive analyses (Kim et al., 2023).

Keywords: Sensory Analysis, Hedonic Scale, Panel Test.

TÜKETİCİ KABULÜNÜN BELİRLENMESİNDE DUYUSAL ANALİZ: YÖNTEMLER VE YAKLAŞIMLAR

Özet

Duyusal analiz, bir ürünün ya da gıdanın sahip olduğu doku, lezzet, tat, görünüm, koku gibi özellikleri; panelistlerin görme, koklama, tatma, dokunma ve işitme duyuları aracılığıyla inceleyen bir değerlendirme yöntemidir. Tarihsel olarak, duyusal analiz gıda kalitesinin değerlendirilmesinde teknolojik ve mikrobiyolojik güvenliği tamamlayıcı bir yöntem olarak kabul edilmiştir. Bununla birlikte, son yıllarda kaydettiği önemli gelişmeler ve artan etkisi, duyusal analizi tüketiciler tarafından nihai ürünün kabulünü güvence altına almak amacıyla yenilik ve uygulama süreçlerinde en önemli metodolojilerden biri hâline getirmiştir (Ruiz ve Herrero, 2021). Duyusal tat testleri ve analiz yöntemleri; ayrım testleri, tanımlayıcı analizler, tüketici kabul testleri ve gelişmiş profilleme teknikleri gibi çok çeşitli metodolojileri kapsar. Bu teknikler, ürünlerin duyusal karakterlerini nesnel olarak ölçmek, profillemek ve tüketici beklentilerini anlamak için gıda biliminde vazgeçilmez araçlardır (Marques ve ark., 2022). Panelist–tüketici etkileşimini ve gerçek duyusal deneyimi desteklemek amacıyla bilgisayar teknolojilerinin kullanımı, yöntemlerin kapsamını daha da genişletmektedir (Drake, 2023). Duyusal analiz çalışmalarında, testin amacına bağlı olarak farklı ölçekler kullanılmaktadır. Tüketici beğenisi ve kabulünü değerlendirmek için en yaygın kullanılan araç, 1 ‘aşırı derecede beğenmeme’ ile 9 ‘aşırı derecede beğenme’ arasında değişen dokuz puanlı hedonik ölçektir (Wichchukit ve O’Mahony, 2014). Ürün özelliklerinin ideal düzeyde olup olmadığını belirlemek ve reformülasyon gereksinimlerini ortaya koymak amacıyla Just-About-Right (JAR) ölçekleri kullanılmakta; bu ölçekler özellikle tatlılık, asitlik ve sertlik gibi özelliklerin idealden sapmasını tanımlamada yararlı olmaktadır (Li ve ark., 2014). Eğitimli panelistlerle yürütülen tanımlayıcı duyusal analizlerde ise çizgi ölçekleri tercih edilmektedir (Gomide ve ark., 2021). Ek olarak, tüketici temelli hızlı duyusal profilleme yaklaşımları arasında yer alan Check-All-That-Apply (CATA) yöntemi, panelistlerin ürünü tanımlayan duyusal terimleri işaretlemesine dayanarak kısa sürede duyusal profil elde edilmesine olanak sağlamaktadır (Jaeger ve ark., 2015). Güncel literatürde ayrıca CATA, RATA, Flash Profile ve Temporal Dominance of Sensations (TDS) gibi modern yöntemlerin, klasik tanımlayıcı analizlere alternatif veya tamamlayıcı olarak giderek daha yaygın biçimde kullanıldığı bildirilmektedir (Kim et al., 2023).

Anahtar Kelimeler: Duyusal Analiz, Hedonik Ölçek, Panel Testi.

FROM TRAINING TO ARMS SALES: THE MULTIDIMENSIONAL ANATOMY OF TÜRKIYE'S MILITARY INFLUENCE IN SUB-SAHARAN AFRICA

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Abstract

This study analyzes Türkiye's military presence in Sub-Saharan Africa within a multidimensional framework ranging from training activities to arms sales. Türkiye–Africa relations, which have gained momentum and acquired an institutional character particularly since the 2000s, have become increasingly visible in the field of security and defense. In this context, Türkiye is consolidating its influence in the region not only through military bases and operational presence, but also through military training programs, exports of defense industry products, security cooperation agreements, and capacity-building activities. This study examines Türkiye's military engagement in Sub-Saharan Africa along three main axes: military training and advisory activities, defense industry and arms sales, and bilateral security cooperation mechanisms**.** This multi-layered structure reflects not only Türkiye's short-term security interests but also its long-term strategic, diplomatic, and economic goals. While training activities contribute to the transformation of local armed forces, defense industry exports strengthen Türkiye's position in the global defense market. Ultimately, the article argues that Türkiye's military influence in Sub-Saharan Africa is not merely a military expansion, but rather a multidimensional strategic depth project in which diplomacy and security are deeply intertwined.

Keywords: Türkiye, Sub-Saharan Africa, Military Training, Arms Sales.

Özet

Bu çalışma, Türkiye'nin Sahra Altı Afrika'daki askeri varlığını eğitim faaliyetlerinden silah satışına uzanan çok boyutlu bir çerçevede analiz etmektedir. Karşılıklı ivme kazanan ve özellikle 2000'li yıllardan itibaren kurumsal bir nitelik kazanan Türkiye-Afrika ilişkileri, güvenlik ve savunma alanında giderek daha görünür bir boyut kazanmıştır. Bu bağlamda Türkiye, yalnızca askeri üsler ve operasyonel varlık yoluyla değil; askeri eğitim programları, savunma sanayii ürünlerinin ihracı, güvenlik iş birliği anlaşmaları ve kapasite geliştirme faaliyetleri aracılığıyla da bölgedeki nüfuzunu pekiştirmektedir. Çalışma, Türkiye'nin Sahra Altı Afrika'daki askeri angajmanını üç temel eksende ele almaktadır: askeri eğitim ve danışmanlık faaliyetleri, savunma sanayii ve silah satışları ve ikili-güvenlik iş birliği

mekanizmaları. Bu çok katmanlı yapı, Türkiye'nin yalnızca kısa vadeli güvenlik çıkarlarını değil, aynı zamanda uzun vadeli stratejik, diplomatik ve ekonomik hedeflerini de yansıtmaktadır. Eğitim faaliyetleri yoluyla yerel orduların dönüşümüne katkı sağlanırken, savunma sanayii ihracatı Türkiye'nin küresel savunma pazarındaki konumunu güçlendirmektedir. Sonuç olarak makale, Türkiye'nin Sahra Altı Afrika'daki askeri nüfuzunun salt askeri bir genişleme değil, diplomasi ve güvenliğin iç içe geçtiği çok boyutlu bir stratejik derinlik projesi olduğuna işaret etmektedir.

Anahtar Kelimeler: Türkiye, Sahra Altı Afrika, Askeri Eğitim, Silah Satışı.

THE LEGEND OF RIU DE L'OR (RIVER OF GOLD): THE CONCEPTION OF THE SENEGAL RIVER IN MEDIEVAL CARTOGRAPHY AND THE VOYAGES OF DISCOVERY

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Abstract

Medieval Europe's knowledge of West Africa was not based on direct observation but rather on the texts of Arab geographers, information transmitted through trans-Saharan trade networks, and reports carried by Jewish-Muslim merchants operating in the Mediterranean. The disseminiton of this information materialized in 14th-century portolans as the "Riu de l'Or" (River of Gold), becoming a powerful geographical image that informed Europe's conception of Africa through its increasing visibility on maps in the subsequent centuries. The salient depiction of the River of Gold, particularly in the 1375 Catalan Atlas and the 1413 map by Mecià de Viladestes, demonstrates the Senegal River's transformation into an increasingly fixed cartographic element in the European perspective.

This paper examines the chronological evolution of the River of Gold legend alongside the early Atlantic voyages of discovery, illustrating how a cartographic image evolved into a tangible element driving exploration. Initially, the 1291 expedition of the Vivaldi brothers, who sailed into the Atlantic aiming to reach India by navigating past the West African coast, is considered the earliest example in the Mediterranean world of the idea of accessing West Africa by sea. afterwards, the 1346 journey of Jaume Ferrer, who departed in search of the Riu de l'Or, will be compared within the framework of the Catalan Atlas's depictions and Genoese archivals, indicating how the conception of the River of Gold shifted from its cartographic origins to historical expeditions.

Subsequent to Ferrer's failed voyage, the search for the Riu de l'Or was resumed within the Portuguese enterprise program in the 15th century. Explorers under the patronage of Henry the Navigator, such as Gil Eanes, Afonso Baldaia, Nuno Tristão, and Dinis Dias, defined the coastline extending from the Rio do Ouro to the mouth of the Senegal River, thereby expanding Europe's geographical knowledge of West Africa. Thus, the River of Gold legend was transformed and gained a new significance on both cartographic and historical planes of reality.

This study focusus on to reveal how the River of Gold was constructed in Medieval Europe as a symbolic geographical image associated with gold, wealth, and the unknown, and how this image guided the early voyages of discovery.

Keywords: Riu de l'Or, River of Gold, Jaume Ferrer, Senegal River, Vivaldi Brothers.

RİU DE L'OR (ALTIN NEHİR) EFSANESİ: ORTAÇAĞ KARTOGRAFYASINDA SENEGAL NEHRİ TASAVVURU VE KEŞİF SEFERLERİ

Özet

Ortaçağ Avrupası'nın Batı Afrika'ya dair bilgi birikimi, doğrudan gözleme değil; Arap coğrafyacıların metinlerine, trans-Sahra ticaret ağlarıyla gelen bilgilere ve Akdeniz'de faaliyet gösteren Yahudi–Müslüman tacirlerin taşıdığı haberlere dayanmaktaydı. Bu bilgi akışı, 14. yüzyıl portolanlarında "Riu de l'Or" (Altın Nehir) adıyla somutlaşmış ve güçlü bir coğrafi imgeye dönüşerek sonraki yüzyıllarda haritalarda kazandığı görünürlükle Avrupa'nın Afrika tasavvurunu şekillendirmiştir. Özellikle 1375 tarihli Katalan Atlası ile Mecià de Viladestes'in 1413 haritasında Altın Nehir'in belirgin biçimde işlenmesi, Senegal Nehri'nin Avrupa zihninde giderek daha sabit bir kartografik unsura dönüştüğünü ortaya koymaktadır.

Bu bildiri, Altın Nehir efsanesinin kronolojik gelişimini erken Atlantik keşif girişimleriyle birlikte değerlendirerek, kartografik bir imgenin nasıl gerçek bir keşif unsuru hâline geldiğini incelemektedir. İlk aşamada, 1291'de Atlantik'e açılan Vivaldi kardeşlerin, Batı Afrika kıyılarını aşarak Hindistan'a deniz yoluyla ulaşmayı hedefleyen seferi, Akdeniz dünyasında Batı Afrika'ya denizden erişme düşüncesinin en erken örneği olarak ele alınacaktır. Ardından, 1346'da Riu de l'Or'u aramak üzere yola çıkan Jaume Ferrer'in yolculuğu; Katalan Atlası'ndaki betimlemeler ve Ceneviz belgeleri çerçevesinde incelenerek, Altın Nehir tasavvurunun kartografik kökenlerinden tarihsel arayışlara nasıl dönüştüğü gösterilecektir.

Ferrer'in başarısız seferinin ardından Riu de l'Or arayışı, 15. yüzyılda Portekiz'in keşif programı içinde yeniden canlanmış; Denizci Prens Henry himayesindeki Gil Eanes, Afonso Baldaia, Nuno Tristão ve Dinis Dias gibi kâşifler, Riu de l'Or'dan Senegal Nehri ağzına kadar uzanan kıyıları tanımlayarak Avrupa'nın Batı Afrika coğrafyasına ilişkin bilgisini genişletmiştir. Böylece Altın Nehir efsanesi, hem kartografik hem de tarihî gerçeklik düzlemlerinde dönüşerek yeni bir anlam kazanmıştır.

Bu çalışma, Altın Nehir'in Ortaçağ Avrupa'sında altın, zenginlik ve bilinmezlikle ilişkilendirilen sembolik bir coğrafi imge olarak nasıl üretildiğini ve bu imgenin erken keşif seferlerini nasıl yönlendirdiğini ortaya koymayı amaçlamaktadır.

Anahtar Kelimeler: Riu de l'Or, Altın Nehir, Jaume Ferrer, Senegal Nehri, Vivaldi Kardeşler.

GİRİŞ

Batı Afrika'da, Arap coğrafyacıların dikkatini çeken ilk şey, seyyah ve tüccarlardan duydukları Gana'da bulunduğu söylenen olağanüstü zenginliklere dair anlatılar olmuştur. "Altınlar ülkesi Gana" adı ilk kez 8. yüzyılın sonlarına doğru Arap astronomu ve âlimi İbrahim el-Fezârî (ö. 777) tarafından zikredilmiştir (Levtzion, 1973: ix, 127; Conrad, 2005: 11). Bambuk, Bure ve Akan bölgelerindeki altın üretim ve ticareti, kıtanın iç kesimlerindeki nehir sistemleriyle ilişkilendirilerek bir "altın coğrafyası" algısının oluşmasına zemin hazırlamıştır. Altın, çoğunlukla bahsedilen bölgelerdeki akarsuların alüvyonlarının savaklanmasıyla elde edilmiştir (Austen, 2010: 30). Altının bolluğu ve elde ediliş biçimi Avrupa kaynaklarında İspanyolca adlandırma olan "Riu de l'Or/Rio del Oro" (Altın Nehir) ifadesiyle isimlendirilmiş, zamanla bu söylem ekonomik zenginliğin yanı sıra Afrika'nın bilinmezliği ve erişilmezliğini simgeleyen güçlü bir coğrafi imge hâline gelmiştir (Harley-Woodward, 1992: 413; Russell,

2000:131-132). Bu bilinmezlik, altının kökenine ilişkin ilginç teorilerin ortaya çıkmasına yol açmıştır: altının havuç gibi topraktan bittiği, karınca sürüleri tarafından külçe hâlinde yerin altından çıkarıldığı ya da çıplak halde çukurlarda yaşayan insanlar tarafından çıkarıldığı ileri sürülmüştür (Fernández-Armesto, 1987: 146).

Arap coğrafyacılar, "Altın Nehir" anlamına gelen tekil bir kavram kullanmamışlar, altını daha çok belirli bölgelerle ve ticaret güzergâhları ile ilişkilendirmişlerdir. Ebû Ubeyd el-Bekrî, *el-Mesâlik ve'l-memâlik* adlı eserinde Gana ve Takrur bölgelerini anlatırken, modern Senegal Nehri havzası ile örtüşen bir nehir sistemine dolaylı biçimde değinmiştir. Ayrıca el-Bekrî bu nehri, altın üretimiyle değil, Sahra ötesi ticaretin coğrafi çerçevesiyle ilişkilendirmiş; Batı Afrika'daki bu büyük nehir sistemini, Arap coğrafya geleneğindeki yaygın adlandırma doğrultusunda 'Nil' (*Nilü's-Sudan*) olarak tanımlamıştır (Ebû Ubeyd el-Bekrî, 1992: 868). el-Bekri Gana ülkesindeki altının kaynağına ilişkin şu bilgileri vermektedir; "*Ülkesindeki en iyi altın, kralın şehrinden on sekiz günlük bir yolculuk mesafesinde, sürekli yerleşim yerleri olan Sudan kabilelerinin yaşadığı bir bölgeden geçen Ghiarwa şehrinde bulunuyordu….Ghiarwa şehri Nil'e on iki mil uzaklıktadır ve orada birçok Müslüman yaşamaktadır"* (Ebû Ubeyd el-Bekrî, 1992: 874; Levtzion, 2011: 81). Bu anlatımda dikkat çeken husus, altının bir "nehir"den değil, nehir havzasına yakın belirli üretim merkezlerinden elde edildiğinin açık biçimde ortaya konulmasıdır. 'Nil' ise burada bir kaynak değil, coğrafi ve ticari yönlendirici bir referans noktası olarak işlev görmektedir.

Avrupa literatüründe en çok bilinen Arap coğrafyacılardan biri olan Muhammed el-İdrîsî, *Nüzhetü'l-müştâḳ fi'ḫtirâḳı'l-âfâḳ* adlı eserinde, el-Bekrî'den farklı olarak, Wangara ülkesini anlatırken altın bolluğunu Nil Nehri'nin mevsimsel taşkın döngüsüyle ilişkilendirmiştir. İdrîsî'ye göre Wangara, yıl boyunca Nil tarafından çevrelenen ve özellikle yaz aylarında nehrin taşmasıyla çoğunluğu sular altında kalan geniş bir ada görünümündedir. Ağustos ayındaki taşkınların ardından Nil sularının çekilmeye başlamasıyla birlikte Sudan halkı bu bölgeye yönelmekte; nehir yatağında açığa çıkan alanlarda altın aramaktadır. Bu süreçte herkesin, büyük ya da küçük miktarlarda olmak üzere, mutlaka bir miktar altın elde ettiğini belirtmekte; nehrin eski seviyesine dönmesiyle birlikte toplanan altınların ticarete konu edilerek el değiştirdiği ifade etmektedir. İdrîsî, bu döngünün Südan'ın en önemli gelir kaynaklarından birini oluşturduğunu vurgulamaktadır (el-İdrîsî, 1836:18; Levtzion, 2011: 111). Bununla birlikte, Nil'in altın üretimindeki bu mevsimsel ve bölgesel işlevinin, Avrupa coğrafi literatüründe zamanla basitleştirilerek, altının doğrudan kaynağı olarak tahayyül edilen efsanevi bir "Altın Nehir" imgesine dönüştürülmüş olması kuvvetle muhtemeldir. İdrisî'nin Wangara tasvirindeki mevsimsel taşkınlarla çevrili, altın üretimiyle ünlenmiş ada/göl alanı sonraki yüzyıllarda Avrupa haritacılığında Palola/ Pactolus Gölü imgesiyle yeniden üretilmiştir (Taylor, 1928: 134).

İbn Saʿîd el-Mağribî'nin eserlerinde Nil nehri tasviri daha da sistematik bir hâl almıştır. İbn Saʿîd, Nil'i enlemi yaklaşık 16° olan bir kuşakta konumlandırılmış çok kollu bir nehir sistemi olarak tanımlamıştır. Batıdaki ovalardan ve El-Kamer (Ay) Dağları'ndan doğan toplam on kaynağın, iki büyük gölde toplanarak kuzeye doğru birleştiğini anlatmaktadır. Bu nehir şeması, Senegal–Nijer–Yukarı Volta havzasındaki mevsimsel taşkın alanlarının, tek ve bütüncül bir "Batı Nil" sistemi içinde algılandığını göstermektedir. İbn Saʿîd'in bu yaklaşımı, Batlamyusçu Nil modelinin İslâm coğrafyasında yalnızca korunduğunu değil, ayrıntılı hale getirilerek yeniden üretildiğini ortaya koymaktadır (İbn Saʿîd el-Mağribî, 1958:12; Levtzion, 2011: 183).

Arap coğrafya geleneğinde Senegal ve Nijer nehirleri erken dönemden itibaren çoğu zaman Nil Nehri ile özdeşleştirilmiş, bu bölgedeki büyük akarsular "Batı Nil" ya da "Nil-i Gana" gibi adlandırmalarla tanımlanmıştır. Bu yaklaşımın arka planına bakıldığında büyük ölçüde Batlamyusçu coğrafya modeline dayandığı görülmektedir. Batlamyus, Batı Sudan'daki nehir sistemini kendi Nil tasavvuruna dâhil edecek biçimde kurgulamış; Afrika haritalarında Nil'i, bir kolu Mısır'a yönelen, diğer kolu ise Batı Sudan içlerine oradan da okyanusa uzanan bir nehir sistemi olarak betimlemiştir. Batlamyus'a dayandırılan bu miras, hem İslâm coğrafya literatürünü hem de Ortaçağ Avrupa kartografya geleneğini etkilemiş; Batı Afrika'daki altın üretim bölgeleri, Nil'in batıdaki hayalî uzantılarıyla ilişkilendirilerek "Altın Nehir / Riu de l'Or" gibi güçlü bir coğrafi imgenin oluşmasına zemin hazırlamıştır (Batlamyus, *Geographia*, Africae 1562: Antiquis incognita Nova Tabula, harita 39; Mauny, 1961:32; Levtzion, 2011: 105-106).

Bu çalışma, 8. yüzyıldan 15. yüzyıla kadar olan dönemde, Riu de l'Or (Altın Nehir) algısını, Arap coğrafya literatürü, Ortaçağ Avrupa kartografyası ve erken Atlantık coğrafi keşifleri çerçevesinde ele almayı amaçlamaktadır. Bildiri, "Altın Nehir"in gerçek bir nehirden ziyade, Batı Afrika'nın altın zenginliğini betimleyen sembolik coğrafi bir unsur olduğunu vurgulamaktadır. Bu "Altın Nehir" tasavvurunun Avrupalı denizcileri ve siyasi iktidar destekli keşif seferlerini harekete geçirecek düzeyde bir motivasyon kaynağı olduğunu ileri sürmektedir.

1. Ortaçağ Avrupa Literatüründe Riu de l'Or İmgesi

Afrika'nın iç bölgelerine ve Atlantik kıyılarının ötesine dair bilgiler, Ortaçağ Avrupa dünyasında çoğunlukla doğrudan gözleme değil; söylenti, efsane ve Arapça coğrafya geleneğinden çeviri, özet ve ikincil anlatılar yoluyla aktarılan dolaylı bilgilere dayanıyordu. Bu aktarım biçimi, Batı Afrika'daki nehir sistemlerinin gerçek coğrafi özellikleri ile Avrupa'da oluşan algı arasında belirgin bir fark oluşturmuştur. Bundan dolayı Senegal Nehri, Ortaçağ Avrupa dünyasında akış yönü, uzunluğu ve fiziki çevresi bilinmeyen; buna karşılık altın ve zenginlik anlatılarıyla ilişkilendirilmiş sembolik bir su yolu olarak tanınmıştır. Söz konusu algı, haritalar yoluyla pekiştirilerek, erken keşif girişimlerinde somut bir hedef hâline gelmiştir (Haskins, 1925:482-85; Harwood, 2010: 32; French, 2021: 44).

Avrupa literatüründe "Riu de l'Or" ifadesi, bu biçimiyle ilk olarak anonim bir İspanyol Fransisken tarafından yaklaşık 1330–1350 yılları arasında, haritalara dayalı kurgusal bir seyahat anlatısı olarak kaleme alınan, *Libro del Conoscimiento de todos los reynos y tierras (Tüm Krallıklar ve Ülkeler Hakkında Bilgi Kitabı)*[1] adlı eserde geçmektedir. Bu eserin anonim yazarı, haritalarda yer alan efsanelerden hareketle, bilinen hatta erişilebilir dünyanın sınırlarının ötesine geçerek hayal gücüne dayalı fantastik bir yolculuk inşa etmiştir. Kurgusal seyahatname Arap coğrafya geleneğinden devralınan Batı Afrika bilgilerini Avrupa zihinsel coğrafyasına tercüme eden önemli bir ara metin niteliğindedir (Marino, 1999: 52,56; Mauny, 1961:43; Fernández-Armesto, 1987: 151; French, 2021: 43-44).

[1] Eser, XIV. yüzyılın ortalarında, 1304 yılında Kastilya'da doğmuş dilenci tarikat mensubu bir rahibin gerçekleştirdiğini iddia ettiği dünya çapındaki seyahatlerini içermektedir. Söz konusu rahip pek çok ülkeyi ziyaret etmiş olabilir; ancak iddia ettiği üzere Sahra Altı Afrika'ya ya da Bojador Burnu'nun güneyindeki Atlantik bölgelerine gittiği kesinlikle söylenemez (Mauny, 1961:43).

Anonim eserdeki Riu de l'Or anlatılarına baktığımızda nehir kenarında karıncaların yaptığı yuvalardan altın toplandığı ve bu karıncaların kediler kadar büyük olup çok miktarda toprağı dışarı çıkardıkları anlatılmaktadır (Marino, 1999: 52). Konuya ilişkin eserdeki başka anlatıda ise nehrin kaynağı ve izlediği güzergâhtan şu şekilde bahsedilmektedir; "*Daha önce de bahsettiğim Altın Nehir'e (Riu de l'Or) vardık; bu nehir Nil'den ayrılır. Nil'in, Antarktik Kutbu'nun yüksek dağlarından doğduğu, orada Yeryüzü Cenneti'nin bulunduğu söylenir. Nil, bütün Nubya'yı ve tüm Etiyopya'yı kat ettikten sonra Etiyopya'dan çıkışında iki kola ayrılır. Bunlardan biri Mısır çölüne doğru, Dimyat üzerinden akar. Daha büyük olan diğer kol ise batıya yönelerek Batı Denizi'ne dökülür; buna Riu de l'Or derler. Altın Nehir'den ayrıldıktan sonra da kıyıyı sürekli takip ederek çok uzun bir yol aldık"* (Marino, 1999: 56). *Libro del Conoscimiento*'daki bu anlatılar, "Riu de l'Or"un gerçek bir nehirden ziyade, antik kaynaklardan devralınan efsanelerle ve Batlamyusçu nehir sistemi anlayışıyla beslenen sembolik bir coğrafi imge olarak vurgulandığını göstermektedir. Nil'in iki kola ayrılarak bir kolunun Batı Denizine döküldüğü bilgisi, Batı Afrika'yı Avrupa'nın coğrafya algısında erişilebilir fakat hâlâ efsanevî bir zenginlik alanı olarak konumlandırıldığını düşündürmektedir. Bu yönüyle "Riu de l'Or", Avrupa literatüründe keşif arzusunu besleyen kartografik bir cazibe merkezi olmuştur.

On dördüncü ve on beşinci yüzyıla ait pek çok dünya haritası, Ortaçağ'ın Riu de l'Or'u olarak bilinen Altın Nehir tasvirini içermektedir. Söz konusu nehri tasvir eden en yaygın bilinen dünya haritalarını saymak gerekirse; Katalan Atlası'nda (1375), Mecià de Viladestes haritasında (1413), Katalan Estense haritasında (yaklaşık 1450-1460) ve 1459 tarihli Fra Mauro haritasında yer verildiği görülmektedir. Bu haritalarda Altın Nehir, çoğunlukla nehir yatağı üzerine yerleştirilen; Ay Dağları'ndan çıkan dört ya da beş kolun birleşerek döküldüğü, dışa doğru genişleyen bir göl formuyla ilişkilendirilmiştir (Harley-Woodward, 1992: 328).

"Riu de l'Or" ifadesi, Avrupa kartografyasında ilk kez açık biçimde 1375 tarihli Katalan Atlası'nda karşımıza çıkmaktadır. Mayorkalı Yahudi kartograf Abraham Cresques ve muhtemelen oğlu Jefudà Cresques tarafından hazırlanan bu atlasta, Altın Nehir algısını metinsel açıklamalar ve görsel unsurlar vasıtasıyla anlatmışlardır. Atlas'ta, "Rio de l'Or" adlandırması doğrudan bir nehrin üzerine yazılmamış, Jaume Ferrer'in 10 Ağustos 1346'da Mayorka'dan yola çıkarak Altın Nehir'i bulmaya yönelik seferinden söz edilirken yapılan açıklama metninde yer verilmiştir. Bu nehrin Katalan Atlasında nasıl betimlendiğine baktığımızda ise Afrika'nın güneybatısında yer alan Palolus (Pactolus) Gölü'nden Atlantik Okyanusu'na doğru uzanan, altın renkli, geniş ve doğrusal bir su yolu şeklinde tasvir edildiği görülmektedir (Cresques, 1375: Levha V; Hernando, 2018: 29; Budak, 2025: 800-801; Harley-Woodward, 1992: 413; Conte de los Ríos, 2024: 307; Liščák, 2018: 3-4). Nehrin ağzının hemen altında yer alan altın renkli yuvarlak, Mansa Musa'nın elinde ve Lemtûne çadırlarının tepelerinde çizilen benzer altın yuvarlaklarla görsel bir bağ kurarak, söz konusu bölgede altının oynadığı baskın ve belirleyici role işaret etmektedir (Kogman-Appel, 2020: 194). Katalan Atlası'nda Altın Nehir'in bu şekilde konumlandırılıp görselleştirilmesi ve altın yuvarlakla vurgulanması söz konusu su yolunun sadece sembolik bir kartografik imge olmayıp, deniz yoluyla erişilebilir zenginlik barından bir hedef olabileceğini ortaya koymuştur.



Harita 1: Katalan Atlas'ında Riu de l'Or Tasviri (Cresques, 1375: Levha V)

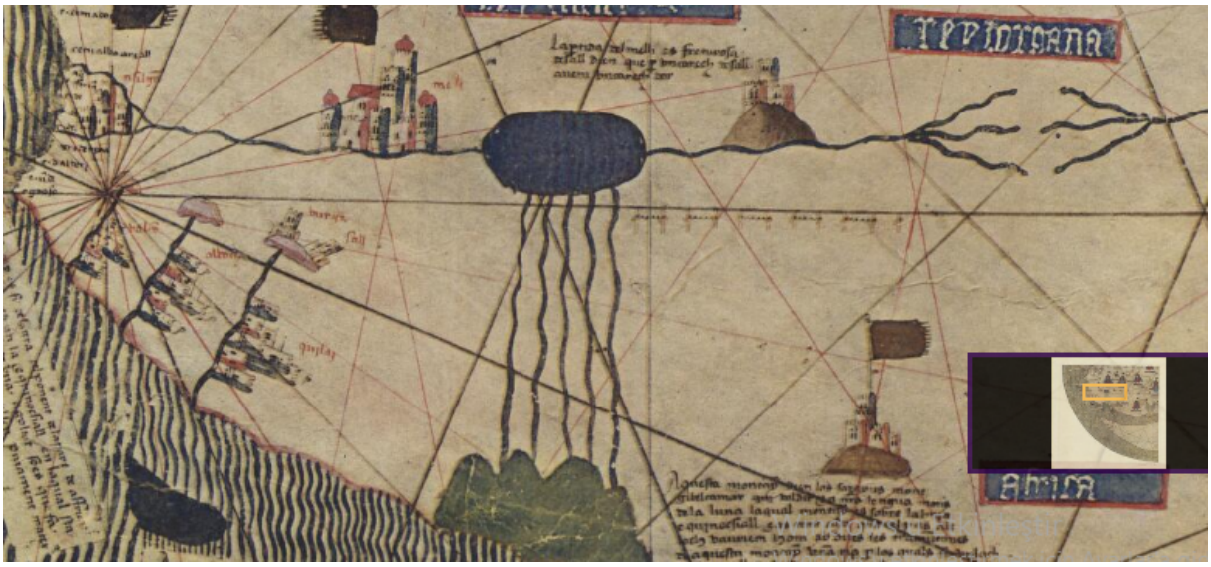
Mayorkalı Yahudi kartograf Mecià de Viladestes tarafından hazırlanan 1413 tarihli dünya haritası, "Riu de l'Or" adının doğrudan bir nehir üzerine yazıldığı ilk kartografik çalışmadır Haritada nehrin adı, Atlantik Okyanusu'na döküldüğü noktaya yakın yazılmış; hemen karşısına ise büyükçe altın renkli yuvarlak bir işaret yerleştirilmiştir. Nehrin kıta içine uzanan güzergâhı takip edildiğinde iki kola ayrılıp tekrar birleşerek bir ada oluşturduğu gözlenmekte ve üzerinde Latince *"Insula Palola"* yani "*Palolus (Pactolus) adası*" ibaresi yazmaktadır. Burası İdrîsî'nin mevsimsel taşkınlarla altın elde edilen Wangara tasvirindeki ada olmalıdır. Nehrin devamına ilerleyince büyükçe bir göl ve ona güneydeki Ay Dağları'ndan (Montes de la Luna) katılan beş nehir görülmektedir. Söz konusu gölden ayrılan bir kolun doğuya yönelerek Mısır Nili'yle birleştiği tasvir edilmiştir. Göl yüzeyi altın renkli yuvarlak beneklerle bezenmiş olup, muhtemelen Altın Nehir'e adını veren altının kaynağı olarak burası görülmektedir (Mecià de Viladestes, 1413; Taylor, 1928: 142; Russell, 2000: 119-120). Viladestes, haritasında Katalan Atlası'ndan farklı olarak, Riu de l'Or'u daha ayrıntılı bir nehir ağı kurgusu içinde ele almış; Palolus adını nehrin oluşturduğu belirgin bir adaya yerleştirirken, Ay Dağları'ndan beslenen beş nehrin aktığı isimsiz gölü de açık biçimde daha doğuda tasvir etmiştir. Bu nehir kurgusu, Batlamyus'un Nil'i Ay Dağları'ndan doğan çok kollu bir sistem olarak tanımlayan modelinin Batı Afrika coğrafyasına uyarlanmış hali denilebilir.



Harita 2: Mecià de Viladestes Haritasında Riu de l'Or Tasviri (Mecià de Viladestes, 1413)

"Riu de l'Or" nehrini öncesindeki haritalardan farklı tasvir eden Modena'daki Katalan-Estense dünya haritasının ne müellifi ne de yapım tarihi kesin olarak belli değildir. Genellikle 15. yüzyıl ortalarına tarihlenen bu haritada, "Riu de l'Or" adına Gine körfezine yakın konumlandırılmış Ay dağlarının yanındaki pasajda şu şekilde yer verilmiştir; *"Bu dağlar, Ay Dağları olarak adlandırılan Etelmont silsilesidir. Bu dağ silsilesi ekvator çizgisi üzerinde yer alır. Batlamyus'un da belirttiği gibi, sözü edilen bu dağlardan çeşitli nehirler doğar; bu nehirler birleşerek 'Rio de l'Or' (Altın Nehir) denilen nehri meydana getirirler"* (Kimble, 1934: Image: 2; Edson, 2007: 197). Batı Afrika nehir sistemlerine dair o dönemdeki bilgi eksikliğini antik

otoritelerin referanslarıyla doldurmaya çalışan Estense haritası, Katalan Atlası ve Viladestes'ten farklı olarak "Riu de l'Or" ile ilgili şu tasvirlere yer vermektedir. İlk olarak haritada Altın Nehir, Atlantik kıyısına yaklaştığında iki kola ayrılarak okyanusa ulaşmaktadır. İkinci olarak Ay dağlarından gelen 5 nehir ile beslenen *Palolus* gölünden doğuya uzanan kol, Batlamyusçu gelenekte görülen biçimiyle Nil ile birleşmemekte, aksine 3 kola ayrılarak sonlanmaktadır. Bu üç kolun tam karşısında yine 3 kol halinde Nil'in batı kolunun başlangıcı tasvir edilmiştir. Haritadaki bu çizimle artık Nil'in Altın Nehir ile olan geleneksel bağı kopmuş vaziyettedir. Ancak söz konusu alanın, birbirini besleyen bir delta mi yoksa dağlık bir geçiş bölgesi olarak mı tasvir edildiğini harita üzerinden ayırt etmek mümkün değildir (Kimble, 1934: Image: 2; Catalan-Estense World Map: 15 yy. ortaları; Edson, 2007: 198; Taylor, 1928: 133-134)



Harita 3: Katalan-Estense Dünya Haritasında Riu de l'Or Tasviri (Kimble, 1934: Image: 2)

1450'li yıllarda hazırlanan Fra Mauro haritası, Geç Ortaçağ'ın öne çıkan kartografik anıtlarından olup, adını Kamaldolular tarikatına mensup müellifi Fra Mauro'dan almıştır. İki nüshası bulunduğu bilinen bu haritanın ilk olarak Venedik Senyörlüğü için mi yoksa Portekiz Kralı'nın siparişi üzerine mi hazırlandığı hususu literatürde tartışmalıdır (Edson, 2007: 141-142 Crone, 1953: 54). Bu haritada "Riu de l'Or" tasviri, Batlamyusçu nehir modelinin devamı niteliğindedir. Altın Nehir'in en doğudaki ucu üç kol halinde bir bataklık alandan başlamakta ve Nil'in batı kolu da kaynağını buradan almaktadır. Batıya yönelen bu üç kol birleşerek tek nehir haline gelerek bir göle ulaşmaktadır. Fra Mauro, bu gölün yüzeyini barındırdığı altına ithafen altın renkli beneklerle süslemiş ve gölün sularında, yaz aylarında taşkın alanının bir ucundan diğerine yük taşıyan kano filoları resmetmiştir. Altın Nehir bu gölden batıya iki kol halinde devam ederken uzunlamasına bir ada oluşturmakta ve sonrasında tek nehir halini alarak Atlantik Okyanusuna ulaşmaktadır. Bu uzunlamasına ada üzerindeki pasajda; "*Bu nehrin kumları arasında toz altın bulunur.*" ibaresi yer almaktadır. Bu pasajın batısında *"altın kanalı"* anlamına gelen *"Canal de l'oro"* ifadesi okunmaktadır. Bu ifadenin biraz daha batısında yine ada üzerinde *"Burada altın çıkarılır."* şeklinde tercüme edilen bir metin bulunmaktadır. Fra Mauro haritasındaki nehir ile altın arasındaki ilişkiyi vurgulayan bu tasvir ve metinler, altın nehir algısını açık biçimde ortaya koymakta ve önceki kartografik geleneklerle güçlü bir süreklilik bağı kurmaktadır. (Fra Mauro, yakl. 1450; Taylor, 1928: 142; Crone, 1953: 62).



Harita 4: Katalan-Estense Dünya Haritasında Riu de l'Or Tasviri (Fra Mauro, yakl. 1450)

Geç Ortaçağ Avrupa kartografyasında "Riu de l'Or", gerçek bir nehir algısı ve bilgisinden ziyade, antik kaynaklar, Arap coğrafya geleneğinden anlatılar ve haritacılık kültürü içerisinde yapılan tasvirlerin birleşimiyle şekillenmiş bir coğrafi imge olarak karşımıza çıkmaktadır. Katalan Atlası'ndan Fra Mauro haritasına uzanan bu tasvirler zinciri, Batı Afrika'yı hem zenginlik vaat eden hem de deniz yoluyla erişilebilir bir alan olarak zihinlerde konumlandırmıştır. Böylece "Altın Nehir", Ortaçağ Avrupa'sında keşif arzusunu besleyen en güçlü kartografik cazibe unsurlarından biri olmuştur.

2. Riu de l'Or'u Bulma Arayışı: Kartografik İmgeden Keşif Seferlerine

Avrupa'da Riu de l'Or imgesi, on dördüncü yüzyıldan itibaren yalnızca haritalarda yer alan sembolik bir unsur olmaktan çıkmış; Batı Afrika'ya yönelik keşif seferlerini teşvik eden somut bir hedef haline gelmiştir. Batı Afrika kıyılarını keşfe yönelik doğrudan bir sefer niteliği taşımayan, Vivaldi Kardeşlerin 1291 yılında Cenova'dan iki gemiyle başlattıkları yolculuk, Avrupa'da Batı Afrika'ya ve zenginliklerine deniz yoluyla ulaşma düşüncesinin en erken örneklerinden biri olarak değerlendirilebilir. Bu yolculuğun asıl gayesi, o zamana kadar hiç kimsenin teşebbüs etmediği bir seferle Afrika kıyılarını takip ederek Okyanus yoluyla Hindistan coğrafyasına ulaşmak olmuştur. Bu keşif seferi beklenildiği gibi gerçekleşmemiş yolcular, Gozora (Gazula) adı verilen bir yerden geçtikten sonra, kendilerinden bir daha haber alınamamıştır. Bu belirsizlik, seferin nihai akıbetine dair Kanarya Adaları'nda ya da Afrika kıyılarında sona ermiş olabileceği yönünde varsayımlar ortaya atılmasına yol açmışsa da, bu görüşleri destekleyen sağlam kanıtlar bulunmamaktadır (Fernández-Armesto, 1987: 152-153; Vallejo, 2023, 21-22; Kimble 1938: 108).

Katalan Atlası'nda Afrika'nın batı kıyısı açıklarında tasvir edilen Jaume Ferrer'in 1346 yılındaki Riu de l'Or'a yönelik yolculuğu, kartografik bir imgenin fiilî bir keşif girişimine dönüştüğü erken örneklerden biridir (Bkz. Harita 1). Atlas'ta bu keşif seferi, Kanarya Takımadalarının güneyinde, Aragon Krallığı'nın dört şeritli bayrağını taşıyan yelkenli bir gemi üzerindeki 4 yolcusuyla tasvir edilmiştir (Galera i Monegal, 2015: 17; Conte de los Ríos, 2024: 307; Lišèák, 2018: 4). Geminin yanındaki notta ise *"10 Ağustos 1346'da, Aziz Lawrence Günü'nde, Jaume Ferrer '*Riu de l'Or*'a doğru yola çıktı"* ibaresi yazmaktadır. Ne yazık ki atlastaki bu kayıt dışında Ferrer'den bir daha haber alınamamıştır; ancak onun yolculuğu, bir sonraki yüzyılda başlayacak Portekiz keşif seferlerinin habercisi olmuştur (Edson, 2007: 83; Budak, 2025: 801; Kogman-Appel, 2020: 110; Russell, 2000: 118). Vivaldilerin kayboluşu ve

Ferrer'den bir daha haber alınamaması, Afrika'nın Atlantik kıyısının o dönem için taşıdığı bilinmezliği de ortaya koymaktadır.

On beşinci yüzyılın ilk yarısında Portekiz'de Denizci Prens Henry'nin (1394-1460) himayesinde yürütülen keşif seferleri, Riu de l'Or imgesinin kartografik bir tasavvurdan devlet destekli, sistematik, kurumsal bir keşif programına dönüşmüştür. Kuşkusuz Prens Henry, Katalan Atlas'ından ve Afrika'nın zenginliklerine dair anlatılardan aldığı ilhamla, kararlılıkla sürdürülecek bir seferin Altın Nehir'e, hatta onun ötesine ulaşarak kendisini Afrika'nın hayal edilen zenginliklerine eriştireceği inancını korumuştur (French, 2021: 63). Bu inancının yanı sıra, Prens Henry'nin güneye yönelik ilk keşif planlarının ardında, Kuzeybatı Afrika'daki İslam gücünü çevrelemek ve artık Etiyopya'daki Hristiyan kral ile özdeşleştirilen Prester John ile temas kurma fikri de yer almıştır. Prens Henry'nin çok yönlü vizyonuna Portekiz sarayındaki diğerleri şüpheci yaklaşarak Afrika kıyısı boyunca güneye doğru ilerlemeyi aşırı masraflı ve dikkat dağıtıcı bir uğraş olarak görerek buna karşı çıkmışlardır (British Museum, Prince Henry the Navigator and Portuguese Maritime Enterprise, 1960: 5-6; French, 2021: 64).

1433 yılında Prens Henry, Lagoslu Gil Eannes isimli bir denizciye, Batı Afrika kıyısı boyunca yelken açarak Cape Bojador'u (Bojador Burnu) geçip, burasının yarattığı psikolojik sınırı aşmaya çalışması talimatını bizzat vermiş ancak bu sefer başarısızlıkla sonuçlanmıştır; Zira Eannes, Kanarya Adaları'ndan öteye geçememiş, burada bazı esirler alarak ülkesine geri dönmüştür. Ertesi yıl Prens Henry, Gil Eannes'i yeniden denemesi için güçlü bir biçimde teşvik etmiş ve Eannes, tehlikeleri hiçe sayarak açık denize yönelmiş ve Bojador Burnu'nu geçmeyi başarmıştır. Eannes bu bölgedeki suların yelken açmaya elverişli olduğunu bildirerek efendisine kıyıda bulduğu bir biberiye dalından daha dikkate değer bir şey getirmeyi başaramamıştır (Zurara, 2010, Vol I, 33; French, 2021: 63; İnan, 2020: 203-204; Major 1868: 82). Bu gelişme, Riu de l'Or'a doğru yapılacak daha ileri seferlerin önünü açmıştır.

Bu ilk keşif adımının ardından 1435 yılında, Prens Henry, Gil Eannes ile birlikte Afonso Gonçalves Baldaia'yı Bojador Burnu'na tekrardan gönderdi. Bu kez bu burnun beş buçuk kilometre kadar ilerisine giderek karaya çıktıklarında orada insan ve deve izleriyle karşılaştılar (Zurara, 2010, Vol I, 34; French, 2021: 63). 1436'daki bir başka keşif gezisine çıkan bu iki kâşif Bojador Burnu'nun 570 kilometre güneyine ilerleyerek nihayet ilk bakışta çok büyük bir nehir ağzı sandıkları ve Riu de l'Or olduğunu iddia ettikleri bir yere ulaşmışlardır. Ancak buranın bir nehir değil, bir körfez olduğu ortaya çıkmıştır. Maalesef altın olduğuna dair hiçbir işaret de yoktur, bunun yerine fok postu ve yağı gibi ürünler elde edilmiştir (Zurara, 2010, Vol I, 35-37; İnan, 2020: 206-207; Russel, 2000: 132; Raymond, 1923: 174).

Afonso Gonçalves Baldaia, Prens Henry himayesinde 1436-1437 yılları arasında bir kaç kez Riu de l'Or diye adlandırdığı körfeze seferler düzenleyerek fok derisi ve yağı ile Portekiz'e geri dönmüştür. Bu süreçte, Riu de l'Or olarak adlandırılan yerin bir nehir değil, geniş bir koy olduğu yönündeki kanaat güçlenmeye başlamıştır (Zurara, 2010, Vol I, 38; Raymond, 1923: 175-78-)

1440'lı yıllara gelindiğinde Nuno Tristão ve Antão Gonçalves tarafından düzenlenen seferler ile bölgeden esirler alınarak Portekiz'e getirilmiştir. Bu esirler arasındaki soylu bir reis, kendisi ve esir iki çocuğun tekrardan tutsak alındığı yere götürülerek serbest bırakılması karşılığında, yüksek miktarda fidye ve köle vereceğini taahhüt etmiştir. Bu durum üzerine Gonçalves, Afrika'ya yeniden dönerek bu esirlere karşılık köle, az miktarda altın tozu, deriden yapılmış bir kalkan ve çok sayıda devekuşu yumurtası almıştır. Bu somut nesneler özellikle altın ve

köleler Prens Henry'nin seferleriyle alay edilmesine kesin olarak son vermiştir. Bu seferlerdeki amaç, Riu de l'Or çevresinde altın ve köle ticaretine dair potansiyeli araştırmak olmuştur (Zurara, 2010, Vol I, 54-58; Major, 1868: 190-91; Oliveira Martins, 1914: 209).

1444–1445 yıllarında, Dinis Dias'ın Riu de l'Or'un keşfine yönelik gerçekleştirdiği Portekiz seferlerindeki kırılma noktası, Arguin, Cape Blanco ve Cape Palmar'ı geçerek Cape Verde civarına ve Ortaçağ Avrupası'nda "Batı Nil" olarak kabul edilen Senegal Nehri'nin ağzına ulaşmasıyla yaşanmıştır. Dönemin tarihçisi Gomes Eanes de Zurara, tıpkı Dias ve onun hamisi Denizci Prens Henry gibi, Senegal Nehri'ni Nijer'in batı kolu ve "siyahların Nil'i" olarak değerlendirmiştir. Bu nehri ortaçağ haritalarındaki gibi Mali'nin altın bölgelerine açılan doğal bir geçit şeklinde yorumlamış; bu yanlış fakat dönemi için tutarlı olan özdeşleştirme, Portekiz karavellerinin gerçekte olduğundan çok daha fazla Hindistan'a, Ay Dağları'na ve Nil'in kaynaklarına yaklaştıkları inancını pekiştirmiştir. Böylece Altın Nehir, Portekiz keşiflerinde belirsiz ve efsanevi bir hedef olmaktan çıkmış; Senegal Nehri üzerinden iç bölgelere, altın kaynaklarına ve Nil sistemine ulaşıldığına inanılan daha somut ve planlı bir keşif ve ticaret anlayışının parçası hâline gelmiştir (Zurara, 2010, Vol II, 176-187; Raymond, 1923: 220-21; Major, 1868: 194).

1445 yılında Prens Henry, Antão Gonçalves, Diogo Afonso ve Gomes Pires'in idarelerindeki gemileri Atlantik kıyılarına göndermiştir. Seferin amacı, yerli halkla müzakere ederek onların Hristiyanlığa dönmelerini sağlamaya çalışmak olmuş, ancak kayda değer bir sonuç almadan geri dönmek durumunda kalmışlardır. Bu sefere katılan John/João Fernandes, Prens için halkın dili ve yaşam tarzı hakkında bilgi edinmek amacıyla, iç bölgelerin vahşi doğasında yedi ay boyunca tek başına kalmıştır. Antão Gonçalves, John Fernandes'i geri getirmek için sefer düzenlemiş ve Arguin Adası'nın güneyindeki bölgeye geldiğinde kıyıyı gözetleyen birine rastlamıştır. Bu kişi, kendisini kurtarmaya gelecek gemiyi beklemekte olan Fernandes'in bizzat kendisidir. Fernandes orada kaldığı süre boyunca yerlilerin sevgisini kazanmıştır. Onun Atlantik kıyıları ve iç bölgeler hakkında edindiği bilgiler ve gözlemler sayesinde, altın kaynaklarının nehir ağızlarından ziyade Sahra içi ticaret yolları ile Sudan havzasına bağlı olduğu anlaşılmıştır. Bu güncel bilgilerle birlikte, Riu de l'Or'un kartografik bir yanılsama olduğu kavranmıştır (Zurara, 2010, Vol I, 107-113; Major, 1868: 194-95).

Ortaçağ haritalarında sembolik bir zenginlik kaynağı olarak beliren Riu de l'Or imgesi, Prens Henry döneminde gerçekleşen organize keşif seferleri sayesinde efsanevî niteliğini büyük ölçüde kaybetmiştir. Altın Nehir algısı, Sahra altı Afrika'nın gerçek coğrafyası ve ticaret ağlarının tanınmasıyla birlikte, hayalî bir nehir arayışından kıtanın içlerine yönelen, somut ve planlı bir keşif-ticaret stratejisine dönüşmüştür. Böylelikle "Altın Nehir" imgesi Batı Afrika'ya yönelik Avrupa keşiflerini harekete geçiren başlangıç miti olarak tarihsel işlevini büyük ölçüde tamamlamıştır.

SONUÇ

Bu çalışma, Riu de l'Or (Altın Nehir) imgesinin Ortaçağ Avrupası'nda gerçek bir nehir düşüncesinden ziyade, antik otoritelerden ve Arap coğrafya geleneğinden devralınan bilgilerin, kartografik birer efsaneye dönüşmesiyle üretilmiş, sembolik bir coğrafi anlatı unsuru olduğunu ortaya koymaktadır. Arap coğrafya literatürü, altını belirli üretim merkezleri, ticaret yolları ve nehir ağlarıyla ilişkilendirirken; Avrupa dünyasına taşınan bu bilgiler, haritalar ve seyahat anlatıları aracılığıyla basitleştirilmiş, Nil'in baıı kolu ile özdeşleştirilerek "Altın Nehir" adı altında somutlaştırılmıştır. Böylece Batı Afrika'daki karmaşık su yolları ve ticari yapı, Ortaçağ

Avrupa zihninde erişilebilir fakat hâlâ efsanevî bir zenginlik kaynağı olarak kendine yer bulmuştur.

Katalan Atlası'ndan Fra Mauro haritasına uzanan haritacılık geleneği içinde, Riu de l'Or sadece bir tasvir unsuru olarak kalmamış, keşif arzusuna yön veren etkin bir hedef hâline dönüşmüştür. Bu imge, Vivaldi Kardeşler ve Jaume Ferrer gibi erken keşif girişimlerinden başlayarak, 15. yüzyılın ilk yarısında Portekiz'in Batı Afrika keşif programıyla sistemli bir nitelik kazanmıştır. Altın Nehir tasviri Denizci Prens Henry'nin himayesinde yürütülen seferlerle birlikte kartografik bir tahayyülden aktif coğrafi arayışlara dönüşmüştür. Ancak Gil Eanes, Afonso Gonçalves Baldaia, Dinis Dias, Nuno Tristão ve Antão Gonçalves gibi kâşiflerin gözlem ve deneyimleriyle, Riu de l'Or'un bir nehir değil, bir koy ya da sembolik bir sınır noktası olabileceği yönündeki kanaat güçlenmiştir.

1440'lı yılların ortalarından itibaren, özellikle Dinis Dias'ın Senegal Nehri ağzına ulaşmasıyla ve João Fernandes'in Sahra kıyıları ile iç bölgelerde edindiği doğrudan gözlemler sayesinde, altın kaynaklarının nehir ağızlarından ziyade Sahra içi ticaret ağları ve Sudan havzasıyla bağlantılı olduğu anlaşılmıştır. Bu bilgi birikimi, Portekiz keşif politikasının Riu de l'Or merkezli arayıştan Senegal–Gine hattına yönelmesini sağlamıştır. Böylece Altın Nehir imgesi, Batı Afrika'ya yönelik Avrupa keşiflerini harekete geçiren kurucu bir mit olarak tarihsel işlevini büyük ölçüde tamamlamıştır.

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"THE DOCTRINE OF DISCOVERY" AND ITS IMPACT ON AFRICA: A SOCIO-ECONOMIC GAPS THAT IS VERY DIFFICULT TO FILL

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Abstract

The African continent has been home to ancient civilizations. The idea that modern Homo sapiens originated from here is also widespread. The fact that human DNA extends to this continent is also significant. The continent has attracted attention since the earliest days of human history. Due to its importance, some societies or states have sought to conquer it. This situation has created irreparable problems or insurmountable difficulties. When Africa is mentioned, the most important problem that comes to mind is colonialism. Colonialism or occupation can be evaluated from different periods. However, what was done during the "Age of Discovery" was unprecedented. The door was opened to all kinds of exploitation, and human history witnessed some of the most shameful acts. Imperialist states or colonial countries implemented these practices as if they were their legal rights. They also developed individual and institutional decisions to support colonialism. One of these was "The Doctrine of Discovery". This study has been prepared to address this doctrine and other related issues. The study begins with a literature review. Then, the methodology is shared. In the findings and discussion section, colonialism in the African continent is evaluated. Next, "The Discovery Doctrine and its impact on Africa: A deep socio-economic gap" is analyzed. The study concludes with a conclusion and general evaluation.

Keywords: The Doctrine of Discovery, Authority to Discover, African Continent, Socio-Economic Effects of the The Doctrine of Discovery.

INTRODUCTION

The African continent holds undeniable importance in human history. It is known as the homeland of Homo sapiens approximately 300,000 years ago, and of modern Homo sapiens approximately 160,000 years ago (the oldest fossils belonging to the human race have been found here). Later, intercontinental and geographical migrations occurred. In this context, the migration to the Middle East approximately 70,000-100,000 years ago is significant. It is thought that the Australian continent was reached approximately 35,000-65,000 years ago, and the American continent approximately 12,000 years ago (Dorey, 2020; Bajpai, 2023: 3635-3636). Quite enduring civilizations were established along the routes followed and in the areas where settled life began. Egypt and the Fertile Crescent region stand out. Significant developments occurred, particularly along the Tigris, Euphrates, and Nile Rivers. A transition from nomadic to settled life took place. Thus, the evolution from hunter-gatherer to agricultural society began. Pack animals were domesticated. Obtaining annual harvests, toolmaking, the use of the wheel, river transportation, and the identification of road routes also came to the fore (Berk, 2020: 117).

The African continent is very important due to its ancient past. When talking about human history, a world without Africa is impossible. However, it has been deprived of the values it deserves and prevented from reaching its full potential. One of the most important reasons for

this is its continuous exploitation. Africa has always attracted attention due to both its location and its resources. It has also hosted many societies and civilizations. Throughout history, it has also faced invasions. In ancient times, the Phoenicians, Greeks, and Romans tried to conquer it. Other foreign powers also claimed rights over African lands. However, one of these was the most barbaric: the colonization of Africa by European powers (Britannica, 2025; National Geographic, 2025). They viewed the African continent as if it were their own territory. To this end, they issued various legal documents or decrees imbued with religious meanings. "The Doctrine of Discovery" is one of these. Subsequently, very dark days followed. Later, US colonialism also emerged. World history may have undergone various socio-technological evolutions up to the present day. However, the suffering of the African continent is still not over. Many negative aspects, primarily socio-economic problems, continue to this day.

This study consists of three separate sections. Under the heading "Literature Review", the following are explained: The Discovery Doctrine; The African continent from past to present. The second section shares the methodology. The third section is organized for findings and discussion. First, "colonialism in the African continent" is presented. Then, "The Discovery Doctrine and its impact on Africa: A deep socio-economic gap" is evaluated. Finally, a general assessment is made at the end of the study.

1. LITERATURE REVIEW

1.1. The Discovery Doctrine

The non-European (non-Christian world) was colonized according to the "Doctrine of Discovery". The Doctrine of Discovery began to emerge in the 1490s. In some of the colonial Western countries, the following point was debated: "Our kings or rulers are also the owners of the newly discovered lands". Undoubtedly, this idea was widely supported. Some church representatives even incorporated religious rituals into the matter. Two documents or regulations can be mentioned here: "1. The Doctrine of Discovery, issued by the Holy Pope. 2. The Authority to Discover, issued by the Noble King". Although in hushed tones, there were also those who discussed the issue. However, practices that did not comply with the international legal order and disregarded humanitarian values began. In later periods, the USA's colonialism joined the Western imperialists. No ethical values were given any place in occupation and colonialism. Shameful crimes that will never be forgotten throughout history were committed. Imperialists later turned to some legal regulations. They also made some agreements under the guise of human rights. One of these is the Berlin Treaty, signed on February 26, 1885 (Miller & Stitz, 2021: 1-2; Britannica, 2025).

The following description can be shared for the topics "The Doctrine of Discovery" given by the Holy Pope and "Authority to Discover" organized by the Noble King (developed by the author):

"The year was 1517. Then some figures appeared. They were types never seen in that region before. Chief Leeu Maanhaar could guess the land of birth of a normal visitor by looking into their eyes. He could immediately understand their tribe after a few words. The visitors spoke a strange language. It was as if a new species had arrived in their village. Their eyes were not pleasant either. They were pale-faced types devoid of compassion. At the head was a strangely dressed person. This old and overweight individual never lacked a smile. In his hand was a book covered in deerskin. Next to him was a tall and pot-bellied man. He wore a pitch-black hat on his head. Then he took it off and began to wipe his forehead. In the middle of his forehead was a scar that resembled a cross". It had appeared. This person held a long, thin instrument in their hand. This device consisted of a "patterned tree" and a "perforated iron" intertwined. It was not an Afrikaans spear or an Afrikaans scimitar. Grandma Baobab sensed that this instrument was not a peace pipe. This cold instrument was held by ten other people. The back

row consisted of about 50 grinning types. They wore strange clothes. Some had removed their hats. Some were bald. Their eyes were bloodshot. Some were overweight. Some were skinny. Some had noses that didn't match their faces. Some seemed to have no teeth. Those who did had teeth that were bright yellow. They were holding weapons. Those that looked like Afrikaans scimitars were brighter and sharper. Some held Afrikaans spears. They too were carefully polished. Except for a few, all had sashes around their waists and There were scabbards. They appeared to be made of sturdy leather. They had extensions hanging down. After a while, they would learn about them. That is, they contained long, sharp swords. Next to the strangers, there was another person who resembled a local. He was unarmed. He seemed excited, as if the strange men were about to speak, and he would explain. The villagers filled the square. Someone had to break the silence. The first words came from the person holding the deerskin book. “I am 'Peres Blancs'; this is 'Captain Black Owl'”, he said. “I have brought you a message from God and his son. We will make the world a better place for you. All your troubles will end. Love and peace will reign in your lands”. Then, turning to the excited type, he said, “Mr. Jakkals, explain”. Hearing the explanations, the old Baobab woman cried out, “We are already inhabitants of paradise. Don't bring our hell here!” Chief Leeumaniel also said, “You are God's guests”. “Otherwise, I would have driven you away immediately”, he said. Peres Blancs and Captain Black Owl were very upset. They looked at each other. This time Black Owl began to shout. “I have two documents. One is 'The Doctrine of Discovery' given by the Holy Pope. The other is 'Authority to Discover' issued by the Noble King. The Pope gave us the title deed to these lands. The King also wants us to rule the land and you”. Grandmother Baobab, Leeumaniel, Myne Abeba, Klein Leeu, and all the villagers fell silent at first. Then, Leeumaniel shouted, “I don't know the people you're talking about. These lands have been ours since Adam. We would sacrifice our lives and even our blood for them”. “We still won't give it to you”. Peres Blancs was eager to speak a little more. But Black Owl was impatient. He raised and lowered his hand. The air was filled with the smell of blood and gunpowder. Ten innocent and blameless natives had been shot. Nothing would ever be the same again. Grandma Baobab was right. “The village of Hemel had turned into the land of hell”.

1.2. The African Continent from Past to Present

The African continent is known as the homeland of modern Homo sapiens (approximately 160,000 years ago). In this sense, it is the origin of humanity. It is also believed that humanity spread to the rest of the world from here, leading to the birth of countless societies and states. In this context, migration to the Middle East is particularly noteworthy. In later eras, migrations also occurred to Europe and Asia. It is also thought that there were separate migrations to Australia and America. Significant civilizations and cultures were established along these migration routes. Egypt and the Fertile Crescent region stand out. Particularly significant developments occurred along the banks of the Tigris, Euphrates, and Nile rivers. The following developments took place in these areas: “The transition from nomadic to settled life has taken place. The evolution from hunter-gatherer to agricultural society has begun. Pack animals have been domesticated. Annual harvests, tool making, the use of the wheel, river transportation, and the identification of road routes have also been achieved” (Dorey, 2020; Bajpai, 2023: 3635-3636; Berk, 2020: 117).

Africa has always been a significant place throughout history. It remains very important today. It possesses significant continental characteristics, primarily due to its geography and human factors. It also has numerous underground and above-ground resources. Due to its location between oceans, it serves as a kind of bridge. The following information can be shared in a current context (Yildirim Cinar, 2023; National Geographic, 2025, Worldometers, 2026):

- There are a total of 54 countries on the African continent.
- It is the second largest landmass in the world. The total land area is 29,648,481 km² (11,447,338 square miles).
- The current population of the continent (as of Sunday, January 11, 2026) is 1,568,660,552. According to United Nations data (Sunday, January 11, 2026), it constitutes approximately 18.97% of the world's population (1,568,660,552 / 8,269,299,332). Accordingly, it appears to be the second largest region in the world in terms of population (roughly equivalent to "continents"). It has the largest regional voting group within the United Nations (UN) with 28%, which can be seen as a noteworthy aspect in world politics.
- African lands possess very important underground and above-ground resources for the global economy. 60% of the world's arable land is located here. The African continent possesses the following globally or worldwide reserves: "Chromium 98%; Cobalt 90%; Platinum 90%; Manganese 70%; Coltan 70%; Tantalum 70%; Uranium 67%; Gold 50%; Diamond 45%; Bauxite 30%; Petroleum 9.6%". Despite these reserves, progress and development have not been achieved. One of the most important reasons for this is the colonial powers.
- It is also important due to its geographical structure and location. It is a geostrategic continent on global trade sea routes. It is surrounded by the Mediterranean Sea to the north. To the northwest is the North Atlantic Ocean; to the southwest is the South Atlantic Ocean. To the southeast lies the Indian Ocean. To the northeast are the Red Sea and the Yemen Sea. Even the Arabian Sea is nearby. It is almost equally divided in two by the equator. Due to their geographical location, countries are grouped as "East, Central, North, South, and West" African countries. The continent can also be characterized by eight main geographical regions, each with its own unique animal, plant, and human communities (Sahara Desert, Sahel, Ethiopian Highlands, savannas, Swahili Coast, rainforests, African Great Lakes, and South Africa). It has significant rivers, the Nile being the second longest river in the world over 1000 km. The Niger, Congo, Zambezi, Orange, Logon, and Sari rivers are also well-known. Africa has seven Great Lakes (Albert, Edward, Kivu, Malawi, Tanganyika, Turkana, and Victoria). Lake Victoria, the largest lake in Africa, forms the southern source of the Nile River. Mountains over 5,000 meters high include Kilimanjaro, Kenya, and Stanley. There are three main deserts: the Namib, Sahara, and Kalahari.
- Some socio-economic data about the African continent can also be considered. Approximately 45% of the population lives in urban areas, while approximately 55% lives in rural areas. The average age on the continent is 19.3 years. Projections suggest that by 2050, it will constitute approximately 25% of the world's population. Given the current average age of 19.3, this represents a young generation. Along with its growing economies, the middle class is also beginning to emerge. Both classic colonial motives and new, dynamic markets are attracting capitalists.

2. METHODOLOGY

2.1. Problem, Purpose and Importance of Research

Colonialism dates back to very ancient times. Human history has faced such problems in every era. Many societies have suffered various hardships. Some states have even collapsed for this reason. However, the African continent has had a darker fate than any other. When colonialism is mentioned, this continent is the first that comes to mind. In particular, the Age of Discovery, or the period of geographical discoveries, brought unprecedented barbarities to Africa. Initially, Western imperialists and their extensions appeared on the scene. In doing so, they relied on certain documents they declared. While exploiting the continent, they also used religious rituals or certain decrees. Chief among these is "The Doctrine of Discovery". The main focus of this study has been this document and the events that followed. Undoubtedly, later on, there was

also the US invasion and exploitation. In addition to the Doctrine of Discovery, the following are also explained in the study; Authority to Discover and the African continent. Next, the focus was on the socio-economic effects of the doctrine of discovery. Both this aspect and the assessment of "The Discovery Doctrine and its Impact on Africa: A Deep Socio-Economic Gap" aimed to create significant theoretical knowledge.

2.2. Research Method and Scope

This study is a kind of review. The literature on the Doctrine of Discovery, authority to discover, and the African continent was evaluated. Based on information from the literature and popular sources, the socio-economic effects of the doctrine of discovery were clarified. Finally, a significant general assessment was made.

3. FINDINGS AND DISCUSSION

3.1. Colonialism in the African Continent

Human history encompasses a variety of experiences and lessons learned. Some of these are negative, while others are positive. From the very first human, the struggle for survival has been ongoing. There have been various struggles against nature, as well as conflicts with other living beings. The historical process of human life is a subject that has been extensively studied. The following general information can be given about the history of humanity: The journey of "Knowing/Modern Human (Homo Sapiens)" has begun. (With the 1st and 2nd migrations, approximately 70,000-100,000 years ago, they reached Eurasia; 65,000 years ago, Australia; 15,000 years ago, America; 11,000 years ago, South America; and finally, Antarctica in 1820). In the context of our topic, a distinction can also be made between eras and ages. First, there are the "prehistoric periods" (1. Stone Age, 2. Metal Age). Next, "historical periods" are listed (1. Early, 2. Middle, 3. Modern, 4. Contemporary, and 5. Cyber Age). These classifications or historical periods may vary slightly. However, there are also general agreements in this direction. Within the historical process, the African continent stands out. It is generally considered the homeland of humanity (Celik, 2022: 260-261).

This study focuses more on the "Middle Ages" and beyond. The Middle Ages began approximately in the last quarter of the 5th century and ended in the middle of the 15th century. During these periods, there were discoveries of continents. Some even call the period between 1400 and 1600 the Age of Discoveries. The Middle Ages and the Modern Age witnessed other developments as well. The Renaissance movements began. Subsequently, the "High Renaissance" period also occurred. Some also call the 17th and 18th centuries the "Age of Enlightenment". The Enlightenment was a kind of intellectual revolution, encompassing the period between the last quarter of the 17th and the last quarter of the 18th centuries. Initially, it was influential in Western Europe and North America. It was fundamentally concerned with new approaches in philosophy, science, and politics. It advocated for the removal of barriers to access to knowledge. It was argued that knowledge could enhance the capacity of individuals and society. It was believed that achieving enlightenment would guarantee human happiness. Undoubtedly, this era did not occur overnight. It developed after many positive and negative emotions and thoughts. The Renaissance period (1400-1600) prepared the groundwork. Artists and scientists initiated intellectual stimulation. Demands for free thought, discourses of peace, emphasis on civic consciousness, expectations of social order, and humanist movements began to rise. The Protestant Reformation (1517-1648) came to the forefront. Thus, the aim was to limit the influence of the Christian Church in all areas of life. However, in practice, this was not entirely possible. For example, the church had a significant influence and provided support in the exploitation of the African continent. Intellectuals and thinkers, however, were unable to prevent imperial movements.

Colonialism and slavery have become, in effect, the fate of the African continent. Between the 15th and 19th centuries (1515-1850), it is claimed that approximately 12.5 million Africans were bought and sold as slaves. Most of these people were taken to the USA and Western states. They were generally first marched from Africa across the Sahara, and from there, across the Atlantic Ocean, they were handed over to imperialist states (BBC, 2020). Under the title "Colonialism in the African Continent", two questions can be asked: "Why has the African continent been exploited for approximately four centuries? Why hasn't the system of exploitation ended?" The first question needs to be examined from the perspective of historical colonialism. The African continent was a significant target for early colonial powers. During the agricultural society period, Westerners saw unparalleled opportunities there. They transported underground and above-ground resources to their own countries. In doing so, they viewed the local population as a source of labor. They didn't just transport agricultural products and minerals; they also created labor-intensive capital. They exploited the captives or prisoners they brought with them without limit, forcing them to work for meager wages in vineyards, gardens, fields, houses, workshops, and factories. They only met their basic physiological needs. Those who expressed secondary or social needs were either imprisoned or killed. These facts are prominent in the colonialism of earlier periods.

Colonialism in the African Continent has never truly ended. Even those who claimed to aim for improvement have failed to be convincing. The Berlin Conference (1884-1885), convened at the invitation of King Leopold II of Belgium, serves as a typical example. Supposedly, the aim was to establish arrangements and ameliorative expectations for Africa. Countries with dominance over Africa were invited to the meeting. Officials from thirteen European countries participated. Representatives from the United States were also present in the negotiations. It was shared that the following topics were discussed over four months: "The option of halting the current struggle over Africa; the determination of Africa's political regions and spheres of influence; and the granting of representation rights to African peoples and ethnic groups". The agreement signed on February 26, 1885, was also emphasized as having made positive arrangements. Indeed, this situation was codified in European international law. In practice, the Berlin Act has evolved to support the principles of "The Discovery Doctrine" and "Authority to Discover". Thus, the following points became even more prominent: "European countries have rights in the African continent. African nations and indigenous peoples will accept this. The states named in the law have these rights. European explorers should be supported" (Miller & Stitz, 2021: 1-2). Unfortunately, the expected good day never came. Over the years, the continent began to be further divided. In fact, it was further colonized.

Initially, "The Discovery Doctrine" and "Authority to Discover" were the dominant principles. Later, the decisions of the Berlin Conference or the principles of the Berlin Act began to be reflected on the ground. Stronger and faster movements began in the African continent. "Holy crosses" began to be mentioned in many parts of the continent. Hundreds of agreements were signed with indigenous representatives. Most of these contained the provisions desired by the occupiers. In every region conquered, the flag of the colonial country began to wave. Imperialists began to claim rights over all the resources above and below the ground. Because their existing laws and local agreements allowed it. Furthermore, they had become the dominant class on the continent. These movements had profound effects between the fifteenth and nineteenth centuries. European Christian nations may have seen this as normal right, as they held supporting racial, ethnocentric, and religious ideas. However, for the indigenous people, death marches began. Africans longed for freedom for many years. European countries and the USA established systems that lasted for centuries. The indigenous nations and peoples

were deprived of their human, property, sovereign, and self-determination rights (Miller & Stitz, 2021: 1-2, Britannica, 2025).

3.2. The Discovery Doctrine and its Impact on Africa: A Deep Socio-Economic Gap

Within the scope of a Deep Socio-Economic Gap, it is useful to first discuss the industrial revolutions and the openings at the societal level. During the Industry 1.0 era (around 1776), capitalist countries began inventing coal-fired steam engines. During the Industry 2.0 era (around 1856), capitalists began producing and consuming steel, oil, electricity, automobiles, and airplanes. The Industry 3.0 era (1960s) brought the following to the forefront: PCs, digital-electronic devices, the internet, e-commerce, logistics hubs, a degree of environmentalism, some social responsibility, business ethics rules, media, and social media literacy. The Industry 4.0 era (2010s) has taken technology even further. Developed capitalist countries are again in the leading roles. China and Japan have also joined the race. Ultimately, the following issues have come to the forefront: "Internet of Things, virtual structures, cyber systems, social networks & platforms, smartwatches, drone delivery, driverless vehicles, Mars rover, cloud & edge computing, solar roofs, artificial DNA, humanoid robots, organ microchips, quantum computing, 3D printing, nano devices, virtual reality (VR) & augmented reality (AR), bionic eye, Bitcoin, big data, blockchain". Industry 5.0 has further widened the gap between developed and underdeveloped countries. Especially since 2017, we have witnessed the following: "unmanned technologies, smart factories, space production base, space tourism, zero aviation, Covid-19 vaccine, 5G connectivity, humanoid robots, natural language processing (NLP), Artificial Intelligence (AI), Google-Gemini, OpenAI-ChatGPT". The subject can also be viewed from the perspective of Society 5.0. In the Society 1.0 period (Pleistocene & Paleolithic Age), there was a hunter-gatherer society structure. The Society 2.0 era (Mesolithic-Neolithic-Chalcolithic Age: 9500 BC) corresponds to an agricultural society. The Society 3.0 era includes the first three industrial periods. That is, the 1800s were the beginning (Industry 1.0 & 2.0); the 1960s were the growth (Industry 3.0). The Society 4.0 era began in the 1970s. 2010 and beyond is called the Super Smart Society (Society 5.0). Especially the developments after Industry 4.0 (with Industry 5.0 being more dominant) and Society 5.0 have reached unmanageable dimensions. New technologies and ways of doing business are discussed every day. Every underdeveloped state is being overwhelmed by these developments. This situation is a major source of problems for underdeveloped societies (Gordon, 2000: 56-57; Wolchover, 2016; Munirathinam, 2020: 3; Gormley, 2021; Karel, 2023; Pusztai, 2023; Tekin & Celik, 2023: 82-83; Okatan, et al, 2024; Celik, 2025: 3).

Here, it is also necessary to evaluate global trends and the accompanying rise of selfishness. The entrepreneurial dimension can also be added to the subject. Wild capitalism has transformed humanity into a self-centered being. Human cooperation and common goals have begun to weaken. The shaping of the future is also not collective. Industrial society has begun to move away from social solidarity. Principles of life ethics and elements of moral behavior are being disregarded. Along with consumer society, the desire for individual gratification and personal ambitions have also increased. The contemporary individual has developed strong desires for certain consumer goods. Yet, there are people who cannot even access basic necessities of life. This contrast is unsustainable. Doctrines of individual salvation should not be glorified. Prescriptions for individual consumption should not be prioritized. A better life cannot be sustained solely through material means. Beautiful ideas must be developed for all of humanity. In this way, a dream of a "better life" for everyone can be realized (Kociatkiewicz and Kostera, 2018: 338; Heywood, 2022: 268; Kundakci, 2025: 175).

For a normal person, the independence of their country is very important. People who love their homeland defend their country. The African people did the same. Like any honorable

person, they retaliated. Although they were healthy and physically strong, they lost the war. Because the enemy was superior in many ways. First of all, they possessed the advanced technology of that era. They had more advanced weapons. They were also cunning in terms of planning. They knew how to organize quickly and systematically. They could easily kill those who did not submit to them. Another strength of theirs was religion. The white man came with his missionaries. That is, he was also powerful in preaching and spreading his own faith. Another strength was that they began to influence some people psycho-socially. Because the pale-faced people did not only carry out physical occupation. Over time, they also increased their psychological and social influence. After a while, the occupiers began to become "settlers". They established their own schools. Teachers came. Health personnel moved in. Agricultural personnel increased. These developments; It also facilitated the work of the invading miners and colonial traders. As a result, the people of the continent began to transform. Freedom fighters decreased. The natives were initially physical slaves. Then, they also collapsed spiritually. Morale and motivation dropped significantly. Submission and acceptance increased. Now, other problems came to the fore. For example, some were assimilated. Collaborator groups formed, albeit in small numbers. Conflicts began between those who sympathized with the invaders and the patriots. Therefore, time worked in favor of the colonialists. One day, the voices of freedom were no longer heard. The continent began to be crushed under the boots of the pale-faced invaders. Now, "Africa does not belong to the Africans".

European powers began to take an interest in Africa from the 15th century onwards, during the Age of Discovery. Over time, they began to claim rights over African lands. Two issues that emerged in the 1490s and especially in 1517 provided the basis and support for these claims (1. The Doctrine of Discovery, issued by the Holy Pope; 2. The Authority to Discover, issued by the Noble King). Initially, "The Doctrine of Discovery" and "Authority to Discover" played dominant roles. In later periods (after February 26, 1885), the decisions of the Berlin Conference or the principles of the Berlin Act also provided support to these two. European interaction with African peoples generally began with trade and the establishment of trade centers, and later with the formation of settlements in the coastal regions of Africa. As colonization increased, more Europeans advanced into the interior of the continent. Initially, there were local reactions to their territorial claims. However, these were suppressed because the imperialists had superior technology and weaponry. They exerted great pressure on traditional leaders or opinion leaders. Ultimately, they seized power. While they granted certain powers to those who made agreements with them, they maintained control. Or, they governed directly through their own subordinates. Imperialists established their own socio-economic order. Their aim was the interests of their own countries. Colonization efforts increased in the new imperialism era, when global powers sought colonies worldwide. That is, it intensified even more in the late 19th century. By 1914, European countries had collectively taken possession of approximately 90 percent of the African continent. Although the First and subsequent Second World Wars brought partial freedoms, the desired situation was never achieved. The 20th century did not provide a solution either. The revolutionary movements of the 1960s rose, partly with support from the USSR (Miller & Stitz, 2021: 1-2, Britannica, 2025).

The exploitative system here has continued to exert its effects to this day. In contemporary Africa, some countries appear to have achieved national freedom and economic independence. However, some African nations are emerging that do not forget their past and wish to shape their future accordingly. These nations are developing resistance against many colonial powers, primarily France. In some African countries, an intellectual class is beginning to emerge,

demonstrating a strong stance through their works and discourse. They use terms such as "ruthless capitalists, occupying exploiters, modern colonialists, postmodern bandits, contemporary colonialists" to describe the imperialists who exploited them. However, complete perfection has not yet been achieved across the continent. Many countries continue to be exploited, openly or covertly. Investments from both the USA and China have increased across the continent. Russia also retains some colonies from the Soviet era. It is beneficial for African countries to develop collaborations with different countries or power centers. This could mitigate some of the problems associated with centralized governance (a unipolar world).

CONCLUSION AND GENERAL EVALUATION

The African continent has belonged to its indigenous people almost since the first humans. Western imperialists attempted to seize the lands that rightfully belonged to them. In doing so, they displayed immoral behavior and disregarded all ethical principles. Consequently, they became a scourge upon the continent, exploiting it. In doing so, they enacted numerous regulations, documenting their actions as if they were entering their own lands. They received orders from kings or rulers to "attack Africa!" Religious significance was also attached to the matter; some who appeared to be religious figures even sanctified colonialism. The "Doctrine of Discovery", issued by the Holy Pope, paved the way for imperialist aims. Another document that triggered these actions was the "Authority to Discover", issued by the Noble King. Later Berlin Conferences and the Berlin Acts also failed to benefit the African people. Furthermore, the industrial revolutions facilitated the work of the colonizers. For example, the 1780s gave rise to the Industry 1.0 approach (the discovery of water and steam power). The 1880s saw the emergence of Industry 2.0 (the discovery of electricity). Imperialist systems were able to implement many socio-economic improvements for their own people. However, they imposed global capitalism and colonial imperialism on less developed societies. The exploitation of the African continent is noteworthy in this regard. As modern business practices developed, socio-economically less developed societies lost even more ground. In Africa, colonialism existed even during the periods of home-based and barter economies. However, economic conditions were still very basic during those periods. The increasing and diversifying human needs over time took the situation to a more advanced level. Workshop systems were perhaps only minimally followed. Factory systems were observed from afar. Industrial facilities were established by people from more socio-economically developed countries. Capitalists brought their expert personnel and top managers with them. The local population was largely valued as a labor-intensive workforce.

The African continent and African societies can be evaluated in a contemporary context. The subject has been approached from two different perspectives. First, attention is drawn to the existing problems and potential threats. Then, the potential benefits or opportunities are shared:

- For the imperialists, not much has changed. The colonial order continues, albeit in a changed form. Exploitation at the global level is carried out under the guise of post-modern approaches. Exploiting natural resources and the human element remains paramount. Imperialism has changed some of its methods and practices. The types of pressure or intervention have begun to differ. There are indirect interventions. Fifth-column activities continue. High-ranking officials or military commanders in some countries can act as representatives of imperialist countries. Primitive colonialism may seem to have lost power. However, they have abandoned their cultural codes. In some African countries, fifth-column activities are still widespread. Because of these, blood and tears do not end. The region's economic and technological deficiencies continue. Health problems and security concerns have not ended. Although they claim to be democratic, authoritarian or totalitarian regimes continue in many countries.

- Some beneficial developments are also observed. These are somewhat more concentrated in socio-cultural areas. For example, communication has improved globally. Access to information has also increased. Nations or societies are able to engage in solidarity. Along with communication, social media literacy has also increased. This poses a risk of unraveling the social fabric. However, it also has beneficial aspects. Significant enlightenments can also be mentioned. National consciousness and national movements have risen in some countries. We also see leaders who prioritize their continent and people. These individuals want to serve their societies and provide public benefit. There are also some voluntary organizations or civil society organizations at the local or national level. These also aim to provide social benefit. Whatever the purpose, organization is necessary. Our era reflects a period in which organization is reaching ever larger dimensions. Naturally, actions that individuals cannot perform alone are carried out by organizations. In this sense, there are those who demonstrate both social solidarity and entrepreneurship. These developments in the social structure can be a source of morale for oppressed and marginalized peoples. Individual and institutional initiatives should be increased. Although not on a global scale, local entrepreneurs are being encountered. Changes in social structure and entrepreneurship have also made environmental regulations more challenging. National or regional business organizations are engaging in various production and marketing activities to meet the needs of local people. Public organizations have begun to take action to create legal regulations and regulate the social structure. Within the framework of the African Union, trade blocs are increasing. They are expanding free trade areas through trade agreements between them. The African Continental Free Trade Agreement is a successful initiative. There are also those who are developing mixed economic collaborations with countries on other continents. South Africa, Egypt, and Ethiopia have become BRICS members. It is also observed that some African countries are turning to more economic collaborations with countries such as China, Russia, Brazil, and India.

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EVOLUTION OF LEARNING IN ORGANIZATIONS: ENLIGHTMENT PHILOSOPHY FROM KANT TO SENGE

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Abstract

Learning is a universal process. It is necessary to follow this process from the perspective of individuals, groups, and societies. The first philosophical assessments of learning date back to antiquity. However, significant systematic studies in this field began to take shape from the 17th century onwards. This is because the Enlightenment emerged and developed largely in the 17th and 18th centuries. Evolutions occurred in the realm of thought. The philosophy of science and scientific thought became more widely discussed. Logic and reasoning were prioritized. Interpretations were developed with the help of intellectual abilities. One of the leading figures of Enlightenment philosophy was Immanuel Kant, who has numerous works. In later periods, more systematic studies emerged. In addition to the individual and society, the dimension of business organizations was also studied. That is, the history of thought, the history of economic thought, and the development of organizational theories were followed. The modern, and even postmodern, periods have witnessed quite new and different studies. The name Peter Michael Senge, in particular, stands out. “The Fifth Discipline” focuses on the organizational dimension of learning and enlightenment. This work first highlights the evolution of learning in organizations. Then, it draws attention to the philosophy of enlightenment, from Kant to Senge. Finally, a general evaluation is made.

Keywords: Immanuel Kant, Enlightenment Philosophy, Peter Senge, Learning Organizations.

INTRODUCTION

This study focuses on the learning dimension in organizations. That is, it concentrates on organizational learning. Learning is a universal process. It has gone through various stages, both individually and organizationally. Human history has encountered quite different methods and principles of learning. The first philosophical evaluations of learning date back to antiquity. Early Greek thinkers are particularly noteworthy. However, significant systematic studies in this field began to take shape from the 17th century onwards. This is because the Enlightenment emerged largely in the 17th and 18th centuries. An evolution occurred in dogmatic power or ideas. Scientific philosophy became popular. Logic and thought were prioritized. Interpretations were developed with the help of intellectual abilities. One of the leading figures of Enlightenment philosophy was Immanuel Kant. In the context of our topic, Kant's works “Critique of Pure Reason” (1781) and “What is Enlightenment” (1784) are noteworthy.

The topics of learning and enlightenment can be examined from the perspective of the history of economic thought and the development of organizational theories. Traditional management theories have been within a classical perspective. Human relations theorists, on the other hand, have aimed at the organic organization. However, both have focused on the internal environment. Modern approaches have changed this. In learning and enlightenment, both the internal and external environments are considered together. Today, postmodern theories are at

play. It is accepted that businesses, being open systems, learn just like people. In this study, the topic of "learning organizations", as a necessity of the information age, is prioritized alongside learning and enlightenment. This concept is comprehensively discussed in Peter Senge's "The Fifth Discipline". Information has gained even more importance with the transition from an industrial society to an information society. This also leads to increased importance of learning and enlightenment. This has further increased the need for learning. Every business organization that wants to succeed in global competition must be aware of this. There is a need for stakeholders to be equipped with the skills to facilitate organizational learning. A learning organization is considered a "dynamic organization that can transform, develop, and renew itself by monitoring changes in environmental conditions". Its fundamental principles are put forward as: "system thinking, individual mastery, mental models, shared vision, and team learning".

This study consists of three separate sections. Within the literature review, "learning, enlightenment, Immanuel Kant and the philosophy of enlightenment, and Peter Senge and The Fifth Discipline" are explained. Then, methodology is introduced. The third section is titled "Findings and Discussion". Here, the place and importance of learning in organizations are primarily discussed. The philosophy of the learning organization is explained in the second subsection. Then, the philosophy of enlightenment, extending from Kant to Senge, is presented. The study concludes with a conclusion and general evaluation.

1. LITERATURE REVIEW

1.1. Learning

The philosophical foundation of learning extends back to ancient times, particularly to ancient Greek thinkers. However, systematic studies began later. The theoretical basis of learning became more distinct from the 18th century onwards, and further developed after the 19th century. Initially, the claim that each individual can learn began to gain general acceptance (Kaynak, 1995: 86). Subsequent periods witnessed even more advanced studies. It was suggested that businesses, like people, can also learn (Budak, 2008: 219). This idea began to gain acceptance, especially with systems thinking. This thought, which gained momentum with modern theories, has become even more prominent today. Learning can be defined as "a relatively permanent change in behavior resulting from reinforced repetition or experience". Learning can also be defined as "relatively permanent or continuous changes in the behavior of an organism through repetition or experience". Whether a behavior is learned or not can be better understood with the following questions (Bacanlı, 2000: 145; Morgan, 2009: 67): "-Has it been formed through repetition or experience? -Has a change occurred in the behavior? -Is the change fairly permanent?".

A person's learning ability depends on intelligence, age, and general arousal level. The higher the intelligence level, the faster the learning. Learning ability increases until early adulthood, then remains stable for a while, and shows a slight decrease in middle and old age. Generally, a high level of arousal, free from anxiety, is required for the best learning. In addition, an individual's previous learning also has an effect on their learning ability. Previously learned information and experiences can play helpful or hindering roles depending on the similarity between stimuli and behaviors. As can be seen, learning is a process that enables adaptation to the environment and the acquisition of new information, and is one of the most important characteristics of humans (Findikci, 1996: 85; Morgan, 2009: 76-119).

1.2. Enlightenment

Enlightenment, first and foremost, requires sufficient accurate information. This information, in turn, needs to be put into practice. The recommended approach is to first acquire knowledge, and then develop ideas. Sometimes, this rule may not be followed. However, verifiable and

scientific information is always important. Enlightenment also has a philosophical aspect. It began as a movement against some traditional doctrines of the Middle Ages. Some have considered certain developments in the 17th and 18th centuries as falling within the scope of the Enlightenment era (TDK, 2025).

The Enlightenment era is a kind of intellectual revolution. It encompasses the period between the last quarter of the 17th century and the last quarter of the 18th century. Fundamentally, it was concerned with new approaches in philosophy, science, and politics. It supported the removal of obstacles to access to knowledge. There was a claim that human and societal capacity could be increased through knowledge. It was believed that when enlightenment was achieved, human happiness could be secured. Undoubtedly, this era did not come about overnight. It developed after many positive and negative emotions and thoughts. The Renaissance period prepared the groundwork (1400-1600). Artists and scientists initiated intellectual stimulation. Demands for free thought, discourses of peace, emphasis on civic consciousness, expectations of social order, and humanist movements began to rise. The Protestant Reformation (1517-1648) came to the fore. Thus, the aim was to limit the influence of the Christian Church in every aspect of life. Reactions and rebellions against scholastic oppression began to activate the journey towards enlightenment.

For philosophers, enlightenment is not something entirely new. Throughout history, philosophers have continuously sought enlightenment. One could distinguish between the pre-Christian (BC) and post-Christian (AD) periods. However, the focus here is on the "post-Christian" era. Some of the famous figures mentioned are: (Hancerlioğlu, 1974: 37-122; Topdemir & Unat, 2008: 4; Simsek, et al 2019: 34-41; Cartwright, 2024); “St. Augustine (354-430); Al-Farabi (870-950); Thomas Acquinas (1227-1274); Ibn Khaldun (1332-1406); Nicholas Copernicus (1473-1543); Thomas More (1478-1535); Tommaso Campanella (1568-1639); Francis Bacon (1561-1626); Thomas Hobbes (1588-1679); Baruch Spinoza (1632-1677); David Hume 1711-1776; (1712-1778);Denis Diderot (1713-1784); (1723-1790); Immanuel Kant (1724-1804); Edmund Burke (1729-1797); Thomas Paine(1737-1809); Mary Wollstonecraft (1759-1797); Robert Owen (1771-1858); John Stuart Mill (1806-1873); Auguste Comte (1798-1857); Emile Durkheim (1858-1917); Karl Marx (1818-1883); Charles Darwin (1809-1882); Herbert Spencer (1820-1903); Francis Galton (1822-1911); Max Weber (1864-1920)”.

As individual discussions and collaborations increased, so did new ideas. Printing became an invention in itself (especially with the use of metal type in printing from the 13th century onwards). The search for innovation increased at both individual and societal levels. Intellectuals, artists, aristocrats, and capitalists found common ground for discussion. Social spaces transformed into formal and/or informal solidarity arenas. Agendas were created for history, economics, sociology, psychology, politics, scientific development, and technology. Critical thinking developed. The interactions between the individual, society, and the state were reviewed. Class conflicts, exploitative systems, and income inequality were discussed. The importance of life, equality of opportunity, participation in governance, and freedom of thought were articulated. Therefore, these initiated the Enlightenment period.

1.3. Immanuel Kant and the Philosophy of Enlightenment

The Enlightenment era was active between the last quarter of the 17th and the last quarter of the 18th centuries. An evolution occurred in dogmatic power or ideas. Scientific philosophy became popular. Logic and thought were prioritized. Interpretations were developed with the help of intellectual abilities. The philosophy of the Enlightenment developed with the support of a large number of thinkers and artists. One of them was Immanuel Kant. The German philosopher Immanuel (Emanuel) Kant (1724-1804) was born in Königsberg (Kingdom of

Prussia, now Kaliningrad, Russia). His family had a craft culture. During his childhood, he witnessed the entrepreneurial characteristics of his family. It is believed that he inherited craft values such as "diligence, honesty, cleanliness, and independence" from his family. Although he faced some problems during his education and adulthood, he became quite famous in later years. He produced notable works within the disciplines of philosophy, epistemology, metaphysics, politics, ethics, and aesthetics. Because of these, he was recognized among the intellectuals of the Enlightenment. He is one of the early writers of modern philosophy. He synthesized early modern rationalism and empiricism. His "Critical Philosophy" is based on the following: "Critique of Pure Reason; Critique of Practical Reason; Critique of Judgment" (Dege, 2024; Kant, 2025).

He drew attention to the distinction between "sensory perception" and "understanding (reason)". He rejected the (rationalist) view that sensory perception is merely a mixed type of intellectual cognition. On the contrary, he argued that sensory perception differs from understanding and brings its own subjective forms of space and time to perception. He stated, "Sensory perception provides access to the sensory world; understanding allows comprehension of a separate rational world". He was a proponent of "Moral Perfection." He argued that moral judgments are based solely on pure understanding. His work, "Critique of Pure Reason" (1781), attracted considerable attention. Here, he attempted to counter the doctrine of philosophical skepticism. Other famous works include: Kant's works include: "Prolegomena to Any Future Metaphysics (1783), What is Enlightenment (1784), Foundations of the Metaphysics of Morals (1785), Metaphysical Foundations of Natural Science (1786), Critique of Practical Reason (1788), Critique of Judgment (1790), Religion Within the Bounds of Plain Reason (1794), Perpetual Peace: A Philosophical Sketch (1795), Groundwork of the Metaphysics of Morals (1797), Metaphysics of Morals (1798), and Lectures on Logic (1800)" (Dege, 2024; Kant, 2025).

1.4. Peter Senge and The Fifth Discipline

When it comes to learning organizations, the name Peter Michael Senge stands out. The author is a prominent figure in the learning organization literature. Peter Senge is a graduate of Stanford University with a Bachelor's degree in Engineering. He also holds master's and doctoral degrees from the Massachusetts Institute of Technology (MIT) / Sloan School of Business. His master's thesis was on "social systems modeling"; his doctoral thesis was on "management". He is the president of SoL (Society of Organizational Learning), a global network of organizations, researchers, and consultants dedicated to the interdependent development of people and organizations. He is a senior faculty member at MIT / Sloan School of Business. He is a founding partner of ASC (Academy for Systemic Change), which aims to accelerate the growth of the global systemic change field. His academic work focuses primarily on: "learning organizations, shared understanding of complex problems, collaborative leadership for healthier human systems, efficiency in global food systems, the impacts of climate change, building regenerative economies, and the future of education." One of the things that made Senge famous is his book, "The Fifth Discipline: The Art and Practice of The Learning Organization", which has received numerous accolades. "Harvard Business Review (one of the most important management books of the last 75 years); Financial Times (one of the five most important management books); Journal of Business Strategy (one of the 24 people who had the greatest influence on business strategy in the 20th century); membership in the China Renzai program (selected for the 1000 Talents Program). This program claims to help China take the lead in systemic change and provide global benefits (Senge, 2025).

Peter Senge started by asking the question; "How do we create the best conditions, including the tools and methods, for enabling learning communities?". He formulated his own answers.

He shared his knowledge and views in his work "The Fifth Discipline". Here, he emphasized the following principles: "1.Systems Thinking, 2.Individual Mastery, 3.Mental Models, 4.Shared Vision, 5.Team Learning" (Senge, 1990: 57-66, 130-217; Bingol, 2006: 242).

2. METHODOLOGY

2.1. Problem, Purpose and Importance of Research

Learning is a universal process. It is also a phenomenon that leads to enlightenment. The subject of learning has been discussed since ancient times. However, significant systematic studies in this field began to take shape from the 17th century onwards. During this period, many prominent thinkers and writers emerged. Their works and ideas accelerated the enlightenment. In particular, Immanuel Kant developed remarkable ideas. Both his contemporaries and followers further developed these ideas. In modern times, the concept of the learning organization has also emerged. Peter Michael Senge stands out as a pioneer of this movement. In this context, the evolution of learning in organizations is first illuminated. Subsequently, the philosophy of enlightenment extending from Kant to Senge is evaluated. Learning organizations, in a sense, have also prepared the ground for internal enlightenment within the organization. Awareness-raising activities regarding internal and external environmental factors have intensified. The goal is a journey from the learning individual to the enlightened individual within the organization. It was believed that this situation would provide many benefits to both the individual and the organization. This study undertook the mission of creating useful theoretical knowledge.

2.2. Research Method

This study clarified the topics of "Immanuel Kant, enlightenment philosophy, Peter Michael Senge, learning organizations". Literature review was preferred in clarifying these topics. Based on this, attention was drawn to the interaction between enlightenment and learning. Various sources were used along with generally accepted literature information. While some popular sources were evaluated, encyclopedias and dictionaries were also consulted. Ultimately, attention was drawn to "the philosophy of enlightenment extending from Kant to Senge".

3. FINDINGS AND DISCUSSION

3.1. The Evolution of Learning in Organizations

The concept of the learning organization began to gain widespread acceptance with its use in Peter Senge's 1990 work, "The Fifth Discipline". With the transition from an industrial society to an information society, information has become a fundamental factor in the success and development of businesses and societies. Information and organizational learning are important elements in the examination of technological and organizational change. For organizations that want to succeed in global competition, being equipped with skills that facilitate organizational learning is of great importance (Senge, 1990: 17-27; Kocel, 2020: 433-434). A learning organization is "a dynamic organization that can transform, develop, and renew itself by monitoring changes in environmental conditions" (Ozalp et al., 2000: 357).

The learning process involves many elements. The subject requires the interaction of the macro and micro environment. In this sense, collaborations between individuals, organizations, society, the state, and voluntary organizations can be evaluated. Distances have also formed in learning and learning itself. Because the human factor is involved. There can be activity as well as hesitancy. In fact, alienation from many social enlightenments, especially learning, has become a topic of discussion. Various hindering factors can even be mentioned in the historical

process. Emile Durkheim addressed these and similar situations in the context of social decay and disintegration. According to the author, societies can be grouped according to their level of development. Developed societies are more likely to strive to overcome social problems. Although capitalist philosophy is dominant, they can also engage in organic solidarity. They possess advanced technology. Their socio-economic infrastructure is developed. Therefore, they have more say in the global order. Developing countries try to take these more advanced countries as role models. However, the situation is different in underdeveloped countries. These are societies that are primarily socio-economically backward. Their culture of solidarity is complex. This is because a mechanically-oriented societal philosophy prevails. They lack new and up-to-date technologies. They have labor-intensive businesses rather than industrial power. Infrastructure has not been provided. They are trying to exist within a colonial system. Naturally, their perspectives on enlightenment were also different. According to the author, if organic or natural solidarity had been achieved, some problems could have been overcome more easily. Many of the evils of capitalism might not have existed. Exploitation would not have been so widespread. Perhaps, labor wouldn't be so alienated (Durkheim, 1933: 49-113; Lukes, 1973: 76-79; Jones, 1986: 24-59; Inda, 2019: 75-79). Many problems have been encountered in every area, primarily socio-psychological factors. Strengthening the social fabric, eliminating alienation, and internalizing learning are in everyone's best interest. All parties have responsibilities in overcoming these obstacles. The specific weight of the modern state must be established. Effective organizations should be established in cooperation with relevant circles. What is important is the resolution of social problems and the achievement of enlightenment (Durkheim, 1933: 49-113; Lukes, 1973: 76-79; Jones, 1986: 24-59; Inda, 2019: 75, 79).

3.2. The Philosophy of Learning Organizations

According to some authors, organizations becoming “learning organizations” is essentially the result of development. According to these, the “learning organization” is one of the final stages of this development process and is related to the following points (Senge, 1990: 57-66; Garvin, 1993: 78-91; KalDer, 1997: 25-27; Dalay, 2001; Cam, 2002; Kocel, 2020: 435-436): “1.The first stage of organizations' relationship with their environment is the “knowing organization” advocated by classical management thought. Rationality is paramount in the knowing organization. The knowing organization dimension was shaped by the representatives of the Classical period. This organizational model can be successful as long as the structure of the market does not change. Knowing organizations have a static structure and resort to learning only when needed. 2.After the knowing organization, there is the “understanding organization”. The understanding organization does not look from the perspective of “the best” and argues that there can be different “good” options. 3.The understanding organization has evolved into the “thinking organization”. Here, organizational shortcomings are questioned and corrected. Necessary measures are taken to prevent these shortcomings from recurring, and systems are developed for this purpose. The deficiency of thinking organizations has been their focus on quick fixes rather than addressing the underlying problem. 4.The most recently emerged “learning organizations” are structures that encourage learning, prioritize employee development, and value open communication and constructive dialogue.

Finally, within the context of the learning organization philosophy, the “principles of learning organizations” can be explained. The basic principles are as follows (Senge, 1990: 57-66, 130-217; Cuceloglu, 1993: 521; Garvin, 1993: 78-91; Findikci, 1996: 53; Senge, 1996: 156-255; Elma & Demir, 2000: 54-56; Dalay, 2001: 414-415; Cam, 2002: 73, Efil, 2006: 334): “1.Systems Thinking: This is systems thinking that brings together disciplines related to learning organizations. Systems thinking strengthens other disciplines and reminds us that the

whole is greater than its parts. 2.Individual Mastery: This discipline focuses on the individual work of employees This refers to individuals expanding their horizons, continuously deepening their analytical and evaluation skills, focusing their energy on specific points, and possessing the ability to objectively perceive reality through patient work. Individual mastery, if it can become a lifestyle and philosophy for the organizational individual, encompasses two underlying dynamics. The first is the continuous enlightenment of the organizational individual, and the second is the continuous learning of how to increasingly clearly see existing validity. 3. Mental Models: Mental models are organized long-term emotional, belief, and behavioral tendencies. These are deeply ingrained assumptions, generalizations, pictures, and images in our minds that influence our understanding and actions. This work begins with the individual turning the mirror to their inner world. Individuals should be taught to uncover and rigorously examine their horizons and visions. 4.Shared Vision: A shared vision is a hope, an ideal, adopted by the organizational individuals. It expresses the members' common views and goals, values, and capacity to form groups and systems regarding the future. A participatory vision allows the organization to... A connected approach is the path to willingly performing one's duties and realizing a participatory vision. 5.Team Learning: Individual learning, beyond a certain level, does not contribute to organizational learning. While individuals may continuously learn, a learning organization may not emerge. However, if teams learn, the entire organization is affected, and the gains can be translated into action.

3.3. The Enlightenment Philosophy Extending from Kant to Senge

Kant and Senge are important figures in the dimension of learning and enlightenment. Their personalities, as well as the understandings and periods they represent, should be analyzed. Kant championed the rule of law and prioritized an international legal order. He developed the concept of world citizenship law and opposed brutal imperialism, rejecting colonialism and imperialism. He asserted that refugees are also human beings and emphasized the need to help those in need. He also developed the concept of the global citizen. That is, he drew attention to the right of a person to travel to any country. According to him, international ethical principles should be developed. Trade should involve moral behavior (Dege, 2024; Kant, 2025). The philosophy of enlightenment, from Kant to Senge, is closely related to various processes. First, there is the aspect of the philosophy of science. Then, there is the dimension of the history of economic thought. Finally, one can also talk about industrial societies and business organizations. From this point, organizational and management theories can also be brought to the agenda. The industrial revolutions, especially their first four dimensions, can be analyzed. When the subject is considered specifically within the context of management theories, organizational theories come to the forefront. Early studies (Taylor, Fayol, Weber) largely incorporated a classical perspective. The early 1900s were a period when physical outputs were, to some extent, revered. Productivity and subsequently profitability were prioritized above all else. However, due to the impact of the economic crisis that began in 1929 and shook the world, and the increasing number of organizational problems in businesses, the shortcomings and inadequacies of classical organizational and management theory became increasingly apparent. The 1930s, with the publication of the results of the Hawthorne Studies, initiated by behavioral scientists, led to the emergence of a new movement in the study of organizations. This movement, which emerged under the name of Human Relations, later formed the basis of the fields of “Human Resources Management” and “Organizational Behavior”. In other words, a kind of search for the social human and the organic organization began. In the first two approaches, learning and enlightenment practices are inward-looking. External environments or external stakeholders have begun to be considered with modern management theories (Simsek & Celik, 2025: 150).

The topic of learning and enlightenment has advanced significantly in recent times, as various postmodern theories have been developed. It is believed that a learning individual will lead to a learning organization. It is also thought that those who effectively manage this process will also foster organizational enlightenment. It is accepted that businesses, being open systems, learn just like people. This topic has become particularly popular after Senge's work, "The Fifth Discipline". Information acquisition and decision-making processes have greatly improved. Accessing accurate information in a timely manner is crucial. Effective learning and enlightenment provide various individual and organizational benefits. Those who know what they are doing and why can focus on their goals more easily. The following are very important for success: "Level management demonstrating leadership in learning, acceptance of open systems thinking, support for individual skills, development of mental models, creating a shared vision, and team learning". For those who internalize these, learning and enlightenment become like a beloved game. The number of individuals who know, understand, think, and question increases. As constantly emphasized, management must demonstrate leadership. All obstacles to learning must be removed. Kant's emphasis on "doing good things for everyone" and "ethical behavior" should not be neglected. The aim should be to "produce better things" together with people, not to exploit them. The subject can be viewed from both Kant's and Senge's perspectives. That is, learning and enlightenment are necessary for the individual, society, and all of humanity.

Before concluding the explanations, a return to Kant from Senge's perspective is possible. In this context, Kant's important contributions can first be summarized. Then, criticisms directed at him can be addressed. Many consider Kant a "pioneer of the enlightenment". In particular, his work "Critique of Pure Reason", in which he raises the four fundamental questions of philosophy (What can I know? What should I do? What can I hope for? What is man?), is considered significant. His teachings and writings solidified the foundations of a new way of thinking. His phrase "Sapere aude" (Dare to know) remains in memory. This intellectual movement declared human reason (rationality) and its correct use to be the standard for all actions. In his writings, the writer called for people to free themselves from any instructions (such as God's commandments) and to take responsibility for their own actions. Even today, countless judgments and prejudices circulate about Kant. For example, the book "Der Weltbürger aus Königsberg" (The World Citizen from Königsberg) by the German author and Kant scholar Otfried Höffe contains noteworthy statements. The author has stated that they are primarily an admirer of Kant. They have emphasized Kant's democratic personality and valued his philosophy and intercultural interactions. However, they have also offered different perspectives on some issues, sharing radical and provocative questions. Initially, they have drawn attention to Kant's European citizenship and subsequently made references to this matter. In other words, it has been stated that Kant did not live in any particular country in the world. Kant's proposal of world citizenship in his works has been appreciated in principle. However, some clues have also been mentioned here. For example, whether or not he was a "Eurocentric racist" has been debated. Another point raised is whether or not he discriminated against women in his works or life (Höffe, 2023, Dege, 2024).

CONCLUSION AND GENERAL EVALUATION

Learning and enlightenment are processes. There are important considerations for both individuals and organizational structures. For individuals, transitioning to a learning organization may not always be easy. In this sense, the following sequence can be suggested: "knowing, understanding, thinking, and learning". These aspects are important for both the

micro-environment and the macro-structure. Approaching the subject from a macro perspective, Immanuel Kant and subsequent thinkers have made significant contributions. The Enlightenment era and its characteristics, which emerged in the 17th and 18th centuries, are noteworthy. Scientific development and technological agendas were established in many fields. Critical thinking began to be given prominence. Institutional interactions between the individual, society, and the state developed. Class conflicts, exploitative systems, and income inequalities began to be discussed loudly. The importance of life, the creation of equal opportunities, participation in governance, and freedom of thought and conscience were also voiced. Therefore, these initiated the Enlightenment period. Kant, considered among the leading thinkers of this era, internalized learning and enlightenment. He frequently emphasized the philosophy of science and scientific thought. The learning and enlightenment of societies and states was seen as very beneficial for the world. For example, attention was drawn to the Enlightenment's ability to alleviate global unrest. This issue was particularly important for ethical and human-centered organizations.

In later periods, more systematic studies came to the fore. In addition to the individual and society, the dimension of business organizations was also studied. That is, micro-structures were also focused on. Here, Peter Michael Senge and his followers can be considered. The authors emphasized the importance of top management support in learning and enlightenment. They pointed out that every organization can have various subsystems within itself. They stated that for success, the factors within the system should be ranked and priorities determined. They emphasized the importance of stakeholders gaining individual expertise. They also touched upon mental models. They called for the institutionalization of learning and enlightenment so that personnel could become analytical individuals. Like this; It is believed that skills in “thinking” and “questioning” will be acquired regarding issues such as task, working group, management style, sector, market structure, and the situation of competitors.

Appropriate strategic plans facilitate learning and enlightenment. However, achievable goals must be set. The internal and external environment of the organization must be well analyzed. Subordinates need to be as participatory as top management in terms of leadership. Collective efforts towards perfection or total development are important. If stakeholders internalize this, a common vision is achieved. Shared vision and common values provide real commitment to success in the organization. Employees can come together around a common identity and sense of destiny (our organizational philosophy). A shared vision creates useful pictures for the future. Good pictures also make it easier for employees to stay in the organization for a very long time. A shared vision also encourages risk-taking and trying new things. Finally, collaborative learning and enlightenment are achieved. Team learning is of strategic importance and is difficult to implement. Individual learning can be achieved by conducting it in line with the interests of individuals and using motivational methods. However, teams with separate goals... Encouraging learning in this direction requires certain skills from managers. These can be listed as “leadership, productivity, participation, openness to continuous improvement, ability to set a vision, openness to delegation of authority and responsibility, problem-solving ability, and imaginatio”.

This study focuses on “Immanuel Kant, Enlightenment philosophy, Peter Senge, and learning organizations”. Based on these, attention is drawn to “Enlightenment philosophy extending from Kant to Senge”. The study primarily relies on a literature review. In addition to generally accepted literature, various sources have been utilized. However, the lack of field research is considered a limitation. It is deemed beneficial to conduct statistical research in business organizations and public institutions in future studies.

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THE IMPACT OF INCOME INEQUALITY, UNEMPLOYMENT, AND ECONOMIC GROWTH ON AIR TRANSPORT DEMAND: EVIDENCE FROM SELECTED LATIN AMERICAN COUNTRIES

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Abstract

This study investigates the impact of income inequality, unemployment, and economic growth on airline demand. The research utilizes annual data for Argentina, Brazil, and Peru covering the period from 1996 to 2021, all of which were obtained from the World Bank (WDI). The Autoregressive Distributed Lag (ARDL) model was employed as the primary methodological framework. The variables consist of air passenger numbers as a proxy for airline demand, the Gini coefficient representing income inequality, GDP for economic growth, and the unemployment rate. While the economic growth variable exhibited a volatile trend, the long-term coefficients derived from the ARDL model indicate that unemployment negatively and statistically significantly affects the number of air passengers. In the long run, increases in both unemployment and income inequality have a diminishing effect on airline demand, and this impact is statistically significant. Conversely, economic growth was found to be statistically insignificant in relation to air passenger numbers in the long term. Short-term results suggest that while unemployment continues to have a negative and significant impact, income inequality surprisingly affects airline demand positively and significantly. Similar to the long-term findings, economic growth remains statistically insignificant in the short term. According to the Pedroni Cointegration Test, although some test statistics did not support the cointegration hypothesis, an overall evaluation confirmed a long-term equilibrium relationship among the variables, consistent with the ARDL findings. Furthermore, the Granger Causality Test results indicate a causal relationship flowing from income inequality and economic growth toward air passenger numbers, as well as from income inequality and economic growth toward unemployment. Additionally, causality was detected from income inequality toward economic growth. The originality of this study lies in its integration of income inequality and the Gini coefficient alongside traditional determinants like unemployment and economic growth in the analysis of airline demand. This study is derived from work conducted within the scope of the "Introduction to Civil Aviation" course led by Asst. Prof. Erkam Emin Ayvaz at Erciyes University, Institute of Social Sciences, Department of Aviation Management.

Keyword: Air Transport Demand, Unemployment, Income Inequality, GDP, ARDL.

THE IMPACT OF TOURISM DEVELOPMENTS ON EMISSIONS: EVIDENCE FROM SELECTED COUNTRIES IN THE MEDITERRANEAN BASIN

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Abstract

The interaction between tourism development and climate change has emerged as a focal point of contemporary academic discourse. This study investigates the impact of tourism advancements on CO_2 emissions—the primary driver of global warming—within the developing economies of the Mediterranean Basin, specifically Tunisia, Egypt, Morocco, and Albania. Utilizing a panel dataset spanning from 2000 to 2019, the research employs the Panel ARDL (Autoregressive Distributed Lag) approach to examine both short- and long-term dynamics following unit root examinations. Empirical findings indicate that economic growth is the most significant determinant of carbon emissions across the selected countries. Long-term coefficients reveal that a 1% increase in GDP leads to a approximately 0.48% rise in CO_2 emissions, suggesting a linear correlation between economic expansion and environmental degradation. Conversely, the impact of tourist arrivals and tourism receipts on emissions was found to be statistically insignificant, indicating that tourism's role in environmental pressure remains secondary in these jurisdictions.

The analysis confirms a robust error correction mechanism, with short-term deviations rapidly reverting to long-term equilibrium. This long-term cointegration, validated by the Pedroni test, is further corroborated by FMOLS and DOLS estimators, which underscore that the prevailing energy-intensive production structures—rather than tourism activities—constitute the primary source of emissions. Furthermore, Pairwise Granger causality results demonstrate a unidirectional link from GDP to tourist arrivals, implying that economic prosperity serves as a precursor to tourism demand. Collectively, these results emphasize the necessity of decoupling economic growth from the carbon footprint and incentivizing green energy investments to ensure sustainable tourism in the Mediterranean. This study is derived from the work conducted within the scope of the 'Department Seminar' course led by Prof. Dr. Alper Aslan at Erciyes University, Institute of Social Sciences, Department of Aviation Management.

Keyword : CO_2 , GDP , Tourism Revenues.

JEL Code : Q56, L83, O44

THE ROLE OF ARTIFICIAL INTELLIGENCE IN NEW EDUCATION MODELS

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Abstract

Artificial intelligence, the latest impressive product of digital technology, is being used in many fields, including education. However, the question here is for what purpose and how it is being used. One of the new opportunities to support the acceleration of technological change and the adaptation of education systems to it is artificial intelligence. In the constantly evolving and changing rhythm of the world, contemporary educational models can be supported by artificial intelligence. Within the transforming structure of the world, education systems also need to be constantly updated with innovative approaches and technologies. Artificial intelligence, which has developed with concepts and theories such as the Turing test, fuzzy logic, and expert systems, now encompasses machine learning and deep learning concepts and continues to learn with big data. Artificial intelligence offers significant transformative opportunities in education to increase efficiency, provide individualized learning experiences, and make learning environments more flexible and accessible.

Keywords: Artificial intelligence, education, technology, communication.

AN EVALUATION OF SURAH AL-HUJURAT FROM THE PERSPECTIVE OF THE SCIENCE OF EXEGESIS

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Abstract

The ability to speak and, more specifically, to express oneself, bestowed upon humans as a unique trait, is an exceptional gift for conveying meaning and truth. Words have anundeniable impact and power in strengthening expression and increasing its permanence. An excellent command of language also forms the backbone of this style of expression. In this context, the statement, “Man is hidden beneath his tongue; he is known by his speech,” emphasizes the importance of words.

The Holy Qur'an, which leads to happiness in this world and the hereafter, is the only guide presented to humanity in terms of meaning and wording. One of the most important tools used to understand its principles and rules correctly is the science of rhetoric. The miraculous nature of the verses of the Qur'an astonished poets and orators, prompting them to study the language and style of the Qur'an. In this context, rhetoric is not a field of knowledge that was invented later, but rather a scientific manifestation of the ability to express oneself, which is inherent in human nature. Within the scope of this study, the Surah al-Hujurat in the Holy Qur'an has been examined in the context of the science of rhetoric and analyzed based on fundamental techniques such as simile, metaphor, and allusion. Thus, the aim is to contribute to the correct and sound understanding of the messages and teachings conveyed in the verses, and in this respect, the study aims to provide a helpful contribution to future research in this field.

Keywords: Holy Qur'an, Surah al-Hujurat, Beyân.

HUCURÂT SÛRESİNİN BEYÂN İLMİ AÇISINDAN DEĞERLENDİRİLMESİ

Özet

İnsana özgü bir haslet olarak bahşedilen konuşma ve özelde söz söyleme kabiliyeti, mana ve hakikati ifade etmede verilmiş müstesna bir nimettir. Anlatımı güçlendirmek ve kalıcılığını artırmak noktasında sözün yadsınamaz bir etkisi ve gücü vardır. Mükemmel bir dil düzeyi de bu ifade biçiminin omurgasını oluşturmaktadır. Bu bağlamda, “İnsan dilinin altında saklıdır, konuştukça tanınır.” ifadesiyle sözün ne derece ehemmiyetli olduğu vurgulanmıştır.

Dünya ve ahiret saadetine ulaştıran Kur’ân-ı Kerîm, mana ve lafız yönüyle insanlığa gönderilmiş yegâne kılavuzdur. Onun ilke ve prensiplerinin doğru bir şekilde anlaşılabilmesi için başvurulan en önemli araçlardan biri ise belâgat ilmidir. Kur’ân âyetlerinin taşıdığı mucizevî özellik, şâir ve hatipleri hayrete düşürmüş; bu durum, onları Kur’ân’ın dil ve üslûbunu incelemeye sevk etmiştir. Bu bağlamda belâgat, sonradan ihdas edilmiş bir bilgi alanı

olmayıp, insan fıtratında meleke hâlinde mevcut bulunan ifade yetkinliğinin ilmî bir tezahürüdür.

Bu çalışmanın sınırları içerisinde Kur'ân-ı Kerîm'de yer alan Hucurât sûresi beyân ilmi kapsamında ele alınmış, özellikle teşbîh, mecâz ve kinâye gibi temel sanatlar esas alınarak tahlil edilmiştir. Böylece âyetlerde verilmek istenen mesaj ve öğretilerin doğru ve sağlıklı bir biçimde anlaşılmasına katkı sağlamak amaçlanmış ve bu yönüyle çalışmanın, bu sahada yapılacak araştırmalara yardımcı nitelikte bir katkı sunması hedeflenmiştir.

Anahtar Kelimeler: Kur'ân-ı Kerîm, Hucurât Sûresi, Beyân.

WAYS TO IMPROVE THE QUALITY OF THE EDUCATIONAL PROCESS IN AZERBAIJANI MILITARY INSTITUTIONS

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Abstract

In the contemporary era, the functioning of military educational institutions holds strategic significance for strengthening national defense capabilities and training professional and intellectual military personnel. Enhancing the quality of education within the Azerbaijani military education system is particularly relevant, as the complexity of modern military operations, rapid technological advancements, and information-driven warfare require that students be equipped not only with theoretical knowledge but also with practical skills, strategic thinking, and decision-making abilities. The core components of the educational process include the transmission of academic knowledge, practical training, and professional ethical-cultural education, which distinguish the military education system from other higher education systems.

Research indicates that traditional teaching methods, such as lectures and seminars, are still widely used; however, these approaches do not fully ensure the development of students' practical skills. Therefore, modern pedagogical approaches, including problem-based learning (PBL), simulations and virtual training platforms, interactive lessons, and project-based training methods, are considered key means of enhancing the quality of education. These methods simultaneously develop students' theoretical knowledge as well as their strategic and analytical thinking abilities.

The application of information and communication technologies (ICT) and innovative technologies directly impacts the quality of education in military institutions. Virtual laboratories, simulators, and interactive learning resources not only foster students' practical skills but also increase their motivation in the learning process. E-learning platforms also contribute to transparency in teaching and enhance the effectiveness of assessment systems. Such approaches enable students to engage with real operational environments in a more prepared and flexible manner.

Nevertheless, several challenges persist in Azerbaijani military educational institutions. These include reliance on traditional methods, insufficient modern training infrastructure, limited faculty competencies in adopting innovative teaching methods, and the absence of a systematic approach to evaluating practical skills. These challenges reduce the overall quality of education and may negatively affect students' future professional performance.

Proposed solutions to these challenges emphasize the modernization of pedagogical methods, the integration of ICT and innovative technologies, continuous professional development of faculty, improvement of assessment systems, and the study of international best practices. Additionally, the creation of multimodal training platforms, the use of simulators and laboratory equipment, and the organization of project-based and team-oriented training aimed at developing collaborative skills will further enhance the quality of military education.

In conclusion, improving the quality of education in Azerbaijani military institutions extends beyond the mere acquisition of knowledge. It also encompasses the development of practical

skills, leadership abilities, strategic thinking, and decision-making competencies. The implementation of systematic and comprehensive approaches will make a significant contribution to the training of future professional military personnel, the strengthening of national defense potential, and the alignment of the military education system with international standards.

Keywords: military education, quality of education, innovative methods, İCT implementation, training of military personnel.

INTRODUCTION

The military education system forms the fundamental basis of a state's defense capabilities and military personnel potential. The complexity of modern military operations, rapid technological advancements, and the increase of information-driven operations necessitate a fundamental reevaluation of the structure and content of military education. Military education is not limited to the transmission of theoretical knowledge; it must also ensure the development of students' practical skills, strategic thinking, and decision-making abilities. In this regard, the educational process is considered a complex system that integrates academic, practical, and ethical-professional components.

The functioning of Azerbaijani military educational institutions directly affects the country's defense and security policy. The training and educational process must encompass all the knowledge, skills, and competencies required for the preparation of professional personnel suitable for modern combat and operational conditions. The quality of education is evaluated not only by students' academic achievements but also by their practical readiness, leadership skills, teamwork abilities, and adherence to ethical and cultural standards of professional conduct.

One of the main challenges faced by contemporary military educational institutions is enhancing the effectiveness of instruction. Although traditional methods remain widely applied, achieving the required level of training is impossible without the adoption of new pedagogical approaches and innovative technologies. In this context, methods such as problem-based learning, simulation and virtual training platforms, project-based training, and interactive lessons serve as key tools for improving the quality of modern military education.

Improving the quality of instruction in military institutions also requires enhancing faculty professionalism, optimizing training resources, and upgrading assessment systems. Achieving this goal necessitates the application of comprehensive and systematic approaches at all stages of the educational process, ensuring a balance between theoretical, practical, and ethical-cultural components. Such approaches not only ensure the high-level preparation of future military personnel but also strengthen the country's strategic security interests and promote the development of the military education system in accordance with contemporary standards.

Thus, improving the quality of education in Azerbaijani military institutions should be understood as a complex process that goes beyond merely increasing knowledge; it also encompasses the development of students' practical skills, strategic thinking, and leadership abilities. From this perspective, the topic holds scientific, practical, and strategic significance.

METHOD

The military education system holds significant strategic importance in strengthening a country's defense capabilities and preparing professional personnel. The objective of military training extends beyond the mere transmission of theoretical knowledge; it also encompasses the development of students' practical skills, strategic thinking, decision-making abilities, and

ethical-professional behavior. This process is regarded as a complex system that integrates academic knowledge, practical training, and professional ethical-cultural education. The complexity of modern military operations and the rapid advancement of technologies necessitate a fundamental reconsideration of the structure and content of education in military institutions. Consequently, improving the quality of instruction is measured not only by the depth of knowledge but also by students' practical competencies, leadership and teamwork abilities, problem-solving skills, and strategic planning capabilities.

While traditional teaching methods, such as lectures and seminars, play an important role in knowledge transmission, they are insufficient for developing the broad range of skills required in contemporary military operations. Therefore, the application of modern pedagogical approaches in military education is essential. Problem-based learning methods enable students to develop decision-making abilities, resource management skills, and effective communication within a team in real-world military scenarios. Simulation and virtual training platforms allow for the enhancement of practical skills in a safe and controlled environment while providing opportunities for situational analysis and strategic planning across diverse scenarios. Team-based project work serves as an effective tool for fostering both collaborative skills and leadership abilities.

The integration of information and communication technologies (ICT) further enhances the efficiency and effectiveness of instruction. Virtual laboratories, simulation platforms, and interactive learning materials systematically develop students' knowledge and skills. The use of digital learning resources also increases transparency in the educational process and facilitates the monitoring of students' progress, optimizing the performance of both instructors and learners and supporting continuous improvement in teaching quality.

Nevertheless, several challenges remain in Azerbaijani military educational institutions, including reliance on traditional methods, insufficient application of modern technologies, limited faculty competence in innovative teaching methods, and the lack of systematic assessment of practical skills. Addressing these challenges requires the implementation of strategic and systematic approaches throughout the educational process.

Modernizing pedagogical methods is central to this effort. The application of problem-based learning, simulations, project-based learning, and interactive methods enhances students' analytical thinking, decision-making abilities, leadership skills, and collaboration within teams. Such approaches ensure that students enter real operational environments better prepared, achieving a balance between theoretical and practical training.

The application of ICT and innovative technologies further improves educational quality. Virtual training platforms, simulators, and digital resources strengthen both theoretical knowledge and practical skills, increasing interactivity, student motivation, and learning outcomes. Continuous professional development of faculty, international experience exchange, and scientific-methodological support enhance instructors' competencies, ensuring high-quality teaching.

Improving the assessment system also plays a crucial role in enhancing educational quality. Evaluation should go beyond written and oral examinations, incorporating practical skills, problem-solving capabilities, and teamwork competencies. Portfolio assessments, simulation tests, and project-based evaluations allow for a more accurate determination of students' real abilities and readiness.

Practical recommendations include the establishment of multimodal training platforms, the integration of modern simulators and laboratory equipment, continuous faculty development programs, the study of international practices, and the implementation of electronic systems for ongoing monitoring of educational quality. These measures facilitate a comprehensive and

systematic training process, the development of both theoretical and practical competencies, and the alignment of military educational institutions with international standards.

Thus, enhancing the quality of education in Azerbaijani military institutions is a multifaceted process encompassing practical skills, leadership and strategic thinking abilities, and teamwork-oriented behavior. The application of systematic and comprehensive approaches contributes to improving the quality of military education, preparing future professional personnel, safeguarding national strategic security interests, and ensuring the development of the military education system in accordance with modern standards.

RECOMMENDATIONS

In conclusion, enhancing the quality of education in Azerbaijani military institutions represents a matter of scientific, practical, and strategic significance. Improving the quality of instruction should not be limited solely to the transmission of theoretical knowledge; it must also focus on developing students' practical skills, problem-solving and decision-making abilities, teamwork competencies, and leadership potential. The complexity of modern military operations and the rapidly evolving nature of technologies necessitate that the military education system be adaptive, flexible, and integrative. This, in turn, requires the modernization of teaching methods, the application of ICT and innovative technologies, the enhancement of faculty professionalism, and the improvement of assessment systems.

Modernizing pedagogical approaches within the educational process enables students to develop analytical thinking, strategic planning, and practical operational skills. Problem-based learning, simulation, and project-based training methods provide students with practical decision-making experience in real military scenarios and strengthen their operational readiness. At the same time, interactive lessons and team-based projects foster leadership and collaboration skills, reinforcing students' understanding of cooperation and shared responsibility.

The application of ICT and digital technologies further enhances instructional effectiveness, making the learning process more interactive and motivating while systematically and efficiently developing students' knowledge and skills. Virtual laboratories, simulators, and electronic learning resources allow students to gain experience in diverse operational scenarios and improve their adaptability to military activities. The integration of these technologies also optimizes faculty performance and ensures transparency in the educational process.

Implementing practical recommendations, such as the creation of multimodal training platforms, the study and application of international best practices, continuous professional development programs, and the enhancement of assessment procedures, further improves the quality of instruction. When applied systematically, these approaches enable military educational institutions to provide students not only with academic knowledge but also with professional preparedness, ethical conduct, and the development of strategic thinking abilities.

Thus, enhancing the quality of education in the Azerbaijani military education system should be understood as a complex and multifaceted process. The successful implementation of this process contributes significantly to the formation of highly professional future military personnel, strengthens the country's defense potential, and ensures the development of the military education system in accordance with contemporary standards. Improving the quality of instruction goes beyond academic achievement and practical skills, encompassing the development of critical components such as leadership, strategic thinking, teamwork, and ethical behavior, thereby fully preparing students for their future professional responsibilities.

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THE MIDDLE ADOLESCENCE PERIOD (AGES 14–17) FROM THE PERSPECTIVE OF RELIGIOUS EDUCATION

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Abstract

Human beings have reflected on and conducted research on existential issues since the earliest periods of history. In this way, human curiosity about both the self and the surrounding environment led to the emergence of knowledge, and individuals' interactions with themselves and their environments gave rise to many fields of study. The individual has often been the focal point of these fields of research and has been examined by being developmentally categorized from the moment of conception in the mother's womb, both physiologically and psychologically. One of these categories is the period of adolescence. There are various sources that define adolescence in different ways. According to UNESCO, adolescence is considered to span the ages of 15 to 25. The definition of adolescence by the United Nations also includes individuals between the ages of 12 and 25. According to the World Health Organization (WHO), adolescence is defined as the period covering the ages of 10 to 19. Although the age boundaries of adolescence do not differ significantly, they may include varying age ranges.

As can be seen, the period of adolescence covers a relatively long process. Therefore, the characteristics observed in the early stages of adolescence differ from those that emerge toward its later stages. In this context, adolescence—one of the most important phases of life—has been examined by being divided into three stages: early, middle, and late adolescence. Early adolescence occurs between the ages of 13 and 15 for males and between 11 and 14 for females; middle adolescence occurs between the ages of 15 and 17 for males and between 14 and 16 for females; and late adolescence occurs between the ages of 17 and 21 for males and between 16 and 21 for females.

In individuals experiencing middle adolescence, a process of identity exploration and self-discovery develops. During this period, considerable importance is attached to physical appearance. With the intensification of abstract thinking, more complex problems begin to emerge in middle adolescents. At this stage, as concerns about the future start to arise, peer influence becomes particularly strong in decision-making processes and in the formation of value judgments. Due to the high level of peer influence, an increase in family-related conflicts is also observed.

Adolescence is a highly important stage in an individual's religious education and should not be neglected. Middle adolescence, in particular, is especially significant because biological development largely reaches its final stage during this period, while psychologically it is considered the first step toward adulthood. It can be said that emotional development reaches its highest levels during this age range of adolescence. The increasing concerns individuals experience regarding adulthood and responsibilities are fundamentally rooted in their search for identity. According to Erikson, the emotional confusion experienced during adolescence must be resolved in a healthy manner throughout the process of identity formation. Individuals

who are able to overcome the challenging processes of adolescence will develop strong personalities and become self-confident adults. Otherwise, identity confusion may persist into later stages of life. During this period, the adolescent individual must cope with all of these challenging phases.

When all of these issues are examined from the perspective of religious education, it can be stated that individuals within this age range have a particular need for a comprehensive form of religious education that encompasses all aspects of life. During this emotionally turbulent period of adolescence, religious education can help address individuals' psychological, social, and cognitive challenges and contribute to the development of a fundamental sense of security that is essential from a human perspective. Indeed, one of the greatest contributions of religion to human life is its supportive role in social and psychological terms. A believing individual can establish a more constant and healthier relationship with the Creator by feeling secure. Through this spiritual connection, the fundamental sense of security that individuals need can be fostered. Middle adolescence, in which the crises that emerge during adolescence reach their peak, is a critical stage in which individuals experience difficulties in many respects.

In this study, the conditions of individuals in the 14–17 age range during middle adolescence are examined from the perspective of religious education. The study aims to contribute to the development of religious education for individuals in middle adolescence, who occupy a critical position in the adolescent period. After providing some general information about adolescence, the study focuses on middle adolescence, which is considered the most challenging phase of this developmental stage. In addition, various educational methods that can be implemented during this period are discussed, and some important approaches in terms of practical application are addressed.

Keywords: Adolescence, Religious Education, Development, Religion, Psychology.

DİN EĞİTİMİ AÇISINDAN 14-17 YAŞ ORTA ERGENLİK DÖNEMİ

Özet

İnsan, varoluşsal konular hakkında ilk dönemlerden itibaren üzerinde düşünmüş ve araştırmalar yapmıştır. Böylece insanın çevresine ve kendisine olan merakı bilginin doğuşunu beraberinde getirmiş, bireylerin kendileriyle ve çevreleriyle olan etkileşimleri pek çok araştırma alanını ortaya çıkarmıştır. Birey, çoğu zaman bu araştırma alanlarının odak noktası olmuş, fizyolojik ve psikolojik açıdan anne rahmine düştüğü andan itibaren gelişimsel olarak farklı kategorilere ayrılarak incelenmiştir. Bu kategorilerden birisi de ergenlik dönemidir. Ergenlik dönemini farklı şekillerde tanımlayan kaynaklar bulunmaktadır. Ergenlik dönemi Unesco'ya göre 15-25 yaşları arasında gösterilir. Birleşmiş Milletlerin ergenlik tanımı da 12-25 yaşları arasını kapsamaktadır. Dünya Sağlık Örgütü (DSÖ)'ne göre ergenlik dönemi, 10-19 yaşları arasını kapsayan bir dönem olarak belirlenmiştir. Ergenlik dönemi yaş sınırları çok büyük farklar olmamakla birlikte değişik yaş sınırlarını içerebilmektedir.

Ergenlik dönemi görüldüğü gibi uzunca bir süreci kapsamaktadır. Dolayısıyla ergenliğin ilk kısımları ile sonlarına doğru oluşan özellikler farklılıklar içermektedir. Bu bağlamda yaşamın en önemli evrelerinden biri olan ergenlik dönemi, üç kısma ayrılarak; ilk, orta ve geç ergenlik dönemi şeklinde incelenmiştir. Ergenliğin başları (ilk ergenlik dönemi) erkeklerde 13-15 yaş, kızlarda 11-14 yaş; ergenliğin ortaları (orta ergenlik dönemi) erkeklerde 15-17 yaş, kızlarda

14-16 yaş; ergenliğin sonları (geç ergenlik dönemi) ise erkeklerde 17-21 yaş, kızlarda 16-21 yaş olarak belirlenmiştir.

Orta ergenlik dönemi bireylerinde kimlik arayışları ve kendini tanımaya yönelik bir süreç gelişmektedir. Bu dönemde, dış görünüşe oldukça önem verilir. Soyut düşüncenin yoğunlaşması ile orta ergen bireylerde daha komplike problemler kendini göstermektedir. Bu dönemde, gelecek hakkında endişelerin oluşmaya başlamasıyla beraber, karar vermede ve değer yargılarının oluşumunda akran etkisi oldukça fazladır. Yüksek düzey akran etkisinin bulunmasıyla aile içi sorunlarda artış yaşanmaktadır.

Bireyin din eğitimi konusunda ergenlik dönemi oldukça önemli ve ihmal edilmemesi gereken bir evredir. Özellikle orta ergenlik dönemi, bireylerde biyolojik olarak gelişimin son noktaya ulaştığı, psikolojik açıdan ise yetişkinliğe adımın ilk basamağı sayılması sebebiyle ayrıca önemlidir. Bu yaş aralığı ergenlik döneminde duygusal olarak gelişimin en üst seviyelere çıktığı söylenebilir. Bireylerin yetişkinlik ve sorumluluklar hakkında kaygılarının yükselmeye başlamasının temelinde kimlik arayışları bulunmaktadır. Erikson'a göre, ergenlik dönemindeki duygusal karışıklıkların kimlik oluşum sürecinde sağlıklı bir şekilde çözülmesi gerekmektedir. Ergenliğin zorlu süreçlerini atlatabilen bireyler, sağlam kişilikler oluşturarak kendine güvenen yetişkinler olacaklardır. Aksi halde bireylerin ilerleyen yaşlarına rağmen kimlik karmaşası devam etmektedir. Bu dönemlerde, ergen birey tüm bu zorlu aşamalarla mücadele etmek durumundadır.

Tüm bunları din eğitimi açısından irdelediğimizde, bireylerin bu yaş aralığında, hayatın bütününü kapsayan din eğitimine özellikle ihtiyacı vardır denebilir. Ergenlik döneminin duygusal olarak bu en çalkantılı döneminde din eğitimi ile bireylerin psikolojik, sosyal ve zihinsel sorunlarına cevaplar bulunarak; insanî açıdan ihtiyaç duyulan temel güven duygusunun geliştirilmesine yardımcı olunabilir. Nitekim, dinin insana sağladığı en büyük katkılardan birisi de sosyal ve psikolojik açıdan kişiyi desteklemesidir. İnanan insan, kendini güvende hissederek yaratıcıyla daima ve daha sağlıklı bağ kurabilir. Kurulan manevi bağ ile, bireyin ihtiyaç duyduğu temel güven duygusu sağlanabilmektedir. Ergenlik döneminde ortaya çıkan bunalımların zirvede olduğu orta ergenlik dönemi, bireylerin pek çok açıdan sorun yaşadıkları kritik bir evredir.

Bu araştırmada, din eğitimi açısından 14/17 yaş orta ergenlik dönemi bireylerinin durumları incelenmiştir. Kritik bir konumda olan orta ergenlik dönemi bireylerinin din eğitimi açısından geliştirilmesine katkı sağlanması amaçlanmıştır. Ergenlik dönemi hakkında bazı bilgiler verilerek, ergenlik döneminin en zorlu kısmı olan orta ergenlikten bahsedilmiştir. Ayrıca bu dönemde gerçekleştirilebilecek farklı eğitim metotlarına yer verilmiş, uygulama açısından bazı önemli yöntemlere değinilmiştir.

Anahtar Kelimeler: Ergenlik Dönemi, Din eğitimi, gelişim, din, psikoloji.

AN EXAMINATION OF PARENTAL EXPECTATIONS TOWARDS PRESCHOOL EDUCATION INSTITUTIONS IN THE TURKISH REPUBLIC OF NORTHERN CYPRUS

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Abstract

The aim of this study is to determine the level of parental expectations regarding preschool education institutions in the Turkish Republic of Northern Cyprus (TRNC) and to examine whether these expectations differ according to various variables. Determining parents' expectations from early childhood education institutions is crucial for enhancing the quality and efficiency of education. Active parental involvement and continuous communication with educational institutions are key factors in improving preschool education quality. Therefore, preschool institutions should consider parents' expectations and value their opinions to ensure a high-quality educational environment. The study group consisted of 133 parents whose children were attending preschool education institutions in the 2020–2021 academic year in TRNC. The sample was selected using the simple random sampling method. This research was conducted using a quantitative research model, and data were collected through the "Parents' Expectations from Preschools" questionnaire developed by Zeynep Ceren Yeşilyurt (2011). The reliability coefficient (Cronbach's Alpha) of the scale was reported as 0.70. The questionnaire consists of two sections: the first section gathers demographic information, while the second section includes 20 items related to parents' expectations. Data were analyzed using SPSS 22. Independent Samples T-Test and ANOVA were used to determine differences based on demographic variables, and frequency analyses were also performed. The findings revealed that parents' expectation levels from preschools were high ($\bar{x}$=4.0918). Moreover, no statistically significant differences were found in parents' expectations according to age, gender, education level, or the type of school (public/private) their children attended.

Key Words: Preschool period, preschool education, preschool education institutions, total quality, parental expectations.

KUZEY KIBRIS TÜRK CUMHURİYETİ'NDE OKUL ÖNCESİ EĞİTİM KURUMLARINA YÖNELİK EBEVEYN BEKLENTİLERİNİN İNCELENMESİ

Özet

Bu araştırmanın amacı, Kuzey Kıbrıs Türk Cumhuriyeti (KKTC)'nde okul öncesi eğitim kurumlarına yönelik ebeveyn beklentilerinin düzeyini belirlemek ve bu beklentilerin çeşitli değişkenlere göre farklılık gösterip göstermediğini incelemektir. Çocukları erken çocukluk eğitim kurumlarına devam eden ailelerin beklentilerinin belirlenmesi, eğitimde verimliliğin ve

kalitenin artırılması açısından büyük önem taşımaktadır. Ailelerin eğitim kurumlarına aktif katılımı ve kurumlarla kurdukları sürekli iletişim, okul öncesi eğitimde kaliteyi artıran temel unsurlardandır. Bu nedenle okul öncesi eğitim kurumlarının ebeveynlerin beklentilerine duyarlılık göstermesi ve görüşlerine değer vermesi, nitelikli bir eğitim ortamı oluşturulması açısından kritik öneme sahiptir.Araştırmanın çalışma grubunu, 2020-2021 eğitim-öğretim yılında KKTC'de çocukları okul öncesi eğitim kurumlarına devam eden 133 ebeveyn oluşturmuştur. Örneklem, basit rassal örnekleme yöntemiyle belirlenmiştir. Nicel araştırma yöntemiyle yürütülen bu çalışmada, veri toplama aracı olarak Zeynep Ceren Yeşilyurt (2011) tarafından geliştirilen "Ailelerin Okul Öncesi Eğitim Kurumlarından Beklentileri" anketi kullanılmıştır. Ölçeğin güvenirlik katsayısı (Cronbach Alpha) 0,70 olarak rapor edilmiştir. Anket iki bölümden oluşmaktadır: birinci bölümde katılımcıların demografik bilgileri, ikinci bölümde ise 20 maddeden oluşan beklenti ölçeği yer almaktadır.Elde edilen veriler SPSS 22 programı ile analiz edilmiştir. Katılımcıların demografik özelliklerine göre anlamlı farklılıkların belirlenmesinde Bağımsız Örneklemler T-testi ve ANOVA testleri kullanılmış, ayrıca frekans analizlerinden yararlanılmıştır. Araştırma bulgularına göre, ebeveynlerin okul öncesi eğitim kurumlarından beklenti düzeylerinin yüksek ($\bar{x}$=4,0918) olduğu saptanmıştır. Bununla birlikte, ebeveynlerin beklenti düzeylerinin yaş, cinsiyet, öğrenim düzeyi ve çocuklarının devam ettiği okul türü (devlet/özel) değişkenlerine göre anlamlı bir farklılık göstermediği belirlenmiştir.

Anahtar Kelimeler: Okul öncesi dönem, okul öncesi eğitim, okul öncesi eğitim kurumları, toplam kalite, ebeveyn beklentileri.

THE IMPACT OF SOCIAL MEDIA INCENTIVES ON CONTINUITY AND SUSTAINABILITY IN FOREIGN LANGUAGE LEARNING AND TEACHING: A CASE STUDY

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Abstract

In this technological era, remarkable impacts of social media incentives on the private and professional life of people has attracted an extensive attention from educators in terms of teaching and instructional issue. Hence, this qualitative case study guides inquiry into the influence of social media incentive-based continuance on the viability for foreign language learning and teaching. The study employed semi-structured interviews for data collection and the participants were university students who used social media platforms namely Instagram, YouTube, and TikTok to learn languages. It investigates learners' perceptions, motivations and sustained learning practices. Results show that social media could provide an inspiring and supportive learning context in which participants are encouraged by sustained participation to develop enduring language-learning habits. In addition, findings highlight the value of including digital social tools in language education not just as additional technological means, but as real and powerful spaces for ongoing learning and future educational practice.

Keywords: language learning, social media, sustainability, motivation, qualitative research, learner experience.

YABANCI DİL ÖĞRENİMİ VE ÖĞRETİMİNDE SÜREKLİLİK VE SÜRDÜRÜLEBİLİRLİK ÜZERİNDE SOSYAL MEDYA TEŞVİKLERİNİN ETKİSİ: BİR VAKA ANALİZİ

Özet

Günümüz teknoloji çağında, sosyal medya teşviklerinin bireylerin kişisel ve mesleki yaşamları üzerindeki geniş kapsamlı etkileri, öğretme ve öğrenme perspektifleri açısından

araştırmacıların yoğun ilgisini çekmektedir. Bu doğrultuda, bu nitel durum çalışması, yabancı dil öğrenimi ve öğretiminde süreklilik ve sürdürülebilirlik üzerinde sosyal medya temelli teşviklerin etkisini incelemektedir. Yarı yapılandırılmış görüşmeler aracılığıyla, Instagram, YouTube ve Tik Tok gibi sosyal medya platformlarını yabancı dil öğrenme amacıyla aktif olarak kullanan üniversite öğrencilerinden veriler toplanmıştır. Çalışma, öğrenenlerin algılarını, motivasyonel unsurlarını ve uzun vadeli öğrenme davranışlarını ele almaktadır. Bulgular, sosyal medya platformlarının öğrenenler için motive edici ve destekleyici bir öğrenme ortamı sunduğunu; bu ortamın sürdürülebilir katılımı teşvik ettiğini ve kalıcı dil öğrenme alışkanlıklarının gelişimine katkı sağladığını göstermektedir. Ayrıca sonuçlar, dijital sosyal araçların dil eğitimine yalnızca teknolojik birer ek unsur olarak değil, sürekli öğrenme ve gelecekteki eğitim uygulamaları için özgün ve etkili öğrenme alanları olarak entegre edilmesinin önemini vurgulamaktadır.

Anahtar Kelimeler: Yabancı dil öğrenimi, sosyal medya, sürdürülebilirlik, motivasyon, nitel araştırma, öğrenen deneyimi.

INTRODUCTION

Learning a foreign language is increasingly understood to be a dynamic, socially situated, and long-term process of which learners need to have sustained exposure to the target language, meaningful interaction in it, and ongoing motivational support. Although formal instruction offers learners the benefit of treated input and pedagogical scaffolding, it is also subject to time and institutional constraints, and it affords limited possibilities for genuine communication. Consequently, learners may find it challenging to practice regularly and stay motivated in the long run, which may hinder their ability to cultivate sustainable language-learning habits. Amidst the proliferation of digital technologies, social media have become an integral part of learners' daily practice, influencing the ways in which input is accessed, communication is instantiated, and learning opportunities are created (Andujar, 2016). Websites such as Instagram, YouTube, TikTok, and Discord give access to multimodal, authentic materials, as well as to communities of practice in which interaction, feedback, and social recognition are part of the engagement. These affordances make social media more than a source of entertainment, but an informal learning space that facilitates learner autonomy, identity formation, and sustained engagement. This study is theoretically grounded in Self-Determination Theory (Deci & Ryan, 2000) a conceptualization of motivation as a function of whether needs for autonomy, competence, and relatedness are satisfied or thwarted, and sociocultural theories of learning, which highlight the mediated, social-interactive nature of learning (i.e., engagement in social practices, participation in knowledge construction; Vygotsky, 1978). Within this frame, social media incentives, such as peer feedback, visible progress markers, participatory challenges, and community support, are also to be considered relational and motivational elements that promote the internalization of learning goals and the establishment of long-lasting language learning habits. While there is an increasing number of studies that have illustrated the potential pedagogical benefits of social media tools for increasing learner engagement with authentic language use, much of the literature to date has centered on short-term effects, on particular linguistic skills, or on task-based activities. Relatively little research has considered the role of social media and its related incentives in promoting the persistence and sustainability of language learning practices over time, particularly from the standpoint of what learners experience. To fill this gap, the current qualitative study investigates university learners' perceptions and experiences of social media

incentives and the role these play in building sustained engagement, developing motivation, and shaping daily language learning activities.

RESEARCH DESIGN

In this study, a qualitative research design was used to represent learners' actual experiences and perceptions of using social media in foreign language learning environments. The case study method lends itself well to investigating learners' everyday engagement with motivational incentives, peer communication and sustained participation in digital practices. The participants were 12 undergraduate students (6 female, 6 male) from two public universities in Türkiye who were conducted in the studies, and they were all English Language Teaching and directly related programs. The participants were between the ages of 18 and 23, and had been using social media platforms as language learning tools for at least a year prior to conducting the study. Patton, 2002) was applied to select information-rich cases that allow for robust insights into sustained language learning practices in digital contexts. Data were gathered through semi-structured interviews online using Zoom. An interview guide was prepared in line with the research question and the relevant literature on social media–enabled language learning and motivation. The protocol addressed participants use of particular platforms, perceived motivational incentives, such as likes, comments, participatory challenges and peer interaction, and also the perceived influence of these factors in continuity and sustainability of learning-related activities. Interviews were audio-recorded with informed consent from participants and each took approximately 10 to 15 minutes. Consent to participate in the study was obtained from the parents and ethical clearance was sought from university. confidentiality and anonymity were promised to the participants. All interviews were transcribed word for word and reflective field notes were written to record contextual observations and initial analytical impressions. The rigor of the study was accomplished through the use of methods consistent with the evaluation of data proposed by Lincoln and Guba's (1985) standards. The credibility was strengthened by piloting the interview questions and through the use of verbatim participant quotations in the results. An audit trail of decisions made during coding and developing themes contributed to dependability. Tokens of confirmability were to write reflexive memos to recognize and track the researcher's interpretive role. Transferability was achieved through detailed, contextualized descriptions of the research environment and participants. Data were analyzed using reflexive thematic analysis across Braun and Clarke's (2006, 2019) six phases. To begin with, the researcher read the data (the transcripts) repeatedly to become familiar with them. Second, initial codes were generated inductively to capture salient features of motive, peer contact, routinization, and challenges. Codes were then collated into potential themes by gathering all relevant data extracts within identified codes. Fourth, themes were reviewed and refined to ensure consistence and uniqueness. Themes were subsequently defined and named in terms of what they cover conceptually. Finally, the results were narrated with exemplary quotes from participants to demonstrate each theme.

FINDINGS

The analysis produced four interconnected themes. The first theme, motivational contagion and perceived relatedness, relates to how participants portrayed social media as a motivating environment, wherein monitoring peers' learning and providing and receiving feedback motivated their own learning. Participants also highlighted that they felt a sense of connection and that they were motivated to keep participating after coming across language-learning

materials, tasks, and success narratives. Sub-theme 2: Regularized interaction and habit formation To the users, interacting with the target language on social media had become a matter of routine. Learners said that watching short videos, leaving comments on posts, or taking part in online debates were all informal but regular opportunities to practice the language. Theme 3: Social Belonging and Peer-Mediated Persistence. underscores the role of online communities and peer groups in sustained engagement. They shared that being members of language-learning communities on platforms like Discord and WhatsApp helped build a sense of accountability, support system and collective desire to keep practicing. The last theme, attention fragmentation and sustainability tensions address the tension and associated challenge with 'double-layered' social media dynamic. Although participants recognized the motivational advantages of digital tools, they also described challenges such as distraction, fragmented attention, and blurred line between entertainment and education. This tension speaks to the importance of guided and reflective engagement with social media in schools.

DISCUSSION AND CONCLUSION

The study's results indicate that social media-facilitated incentives are influential in maintaining and sustaining higher MOT (motivation) in EFL learners' foreign language learning, especially through cognition (routinized engagement) and affect (social belonging and social emotion). Learners customize their learning through participating in digital communities and extending language use to nonacademic activities in everyday settings. This is aligned with what Dörnyei and Ryan (2015) indicate that motivation toward second-language learning is becoming increasingly conceptualized in terms of socially distributed, identity-orientated practices, particularly in digitally mediated contexts. In a similar vein, Hafner (2020) argues that participatory digital spaces encourage learner agency and sustained engagement by positioning students as active contributors. From a pedagogical point-of-view, the findings suggest that social media-related tasks for discussing in teacher education and for as a means for support to learners also in their language learning should take the form of guided social media activities fostering learner autonomy, critical digital literacy and reflective engagement of the target language rather than unguided participation in platforms. Consistent with Benson's (2011) conceptualization of autonomy as a socially embedded process, such integrations can facilitate learners to become reflective, self-regulated, and ethically aware practitioners of digital language learning. From an analytical stance, this pattern also exemplifies how reflexive TA facilitates the discovery of meaning-making processes that connect lived experiences to wider sociocultural mechanisms (Braun & Clarke, 2019). This kind of approach may assist learners in capitalizing on the motivational benefits of social media while protecting against the potential distracting and shallow engaging hazards. Subsequent research may consider employing a longitudinal, multiple-site design to investigate the extent to which continued digital involvement may be reflected in classroom practice, learner identity development as well as long-term language gains in varying institution and country contexts. However, the implications may be regarded as substantive rather than statistically generalized because the study was case-based.

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SOCIAL MEDIA AS A TOOL FOR ENGLISH LANGUAGE LEARNING: ADULTS' LEARNERS PERCEPTIONS AND PRACTICES

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Abstract

The common nature of social media in daily life has made these platforms important tools for English language learning. Notwithstanding the popularity of these platforms, research on learners' conceptualizations of social media as a tool for improving their language skills remains underdeveloped. This study analyses how frequently adult learners use English on social media, which platforms they prefer, which language skills they believe improve, and the obstacles they face while learning through digital platforms. Data were gathered from 33 adult EFL learners aged 18–60 via an online survey that investigated social media use and English exposure, vocabulary and pronunciation learning, speaking confidence, and general perceptions of digital learning. Results provide an anchor for "everyday" English exposure between users and non- users indicating that regardless of daily exposure, participants are online users of platforms like YouTube, TikTok, and Instagram. More than 70% participants reported positive effects on vocabulary, pronunciation, and listening skill, and almost 60% participants felt more confident about speaking as a result of regular exposure to authentic materials. Learners also added that social media gives real-life expressions, idioms, and natural speech examples. Although some difficulties, such as distraction, slang, and excerpts of accents were met with the participants, findings indicate that social media is a resourceful and effective means of motivating learners to acquire the English language continually beyond the walls of institution. This study contributes to the informal SLA literature by highlighting the distinction between quantitative exposure to English on social media and the qualitative nature of learners' engagement in shaping adult EFL learners' confidence and participation.

Keywords: Social media, adult learners, informal learning, English language development, digital platforms.

YETİŞKİN ÖĞRENCİLERİN ALGILARI VE UYGULAMALARINDAN İNGİLİZCE DİL ÖĞRENİMİ İÇİN BİR ARAÇ OLARAK SOSYAL MEDYA

Özet

Sosyal medyanın günlük yaşamdaki yaygınlığı, bu platformları İngilizce öğrenimi için önemli bir araç haline getirmiştir. Ancak, öğrencilerin sosyal medyayı dil becerilerini geliştirme aracı olarak algılamalarına ilişkin araştırmalar yeterince gelişmemiş durumdadır. Bu çalışma, yetişkin öğrencilerin sosyal medyada İngilizceye ne sıklıkla maruz kaldıklarını, hangi platformları kullanmayı tercih ettiklerini, hangi dil becerilerinin geliştiğine inandıklarını ve dijital platformlar aracılığıyla öğrenirken karşılaştıkları engelleri analiz etmektedir. Veriler, sosyal medya alışkanlıkları, İngilizceye maruz kalma, kelime dağarcığı ve telaffuz gelişimi, konuşma özgüveni ve dijital öğrenmeye yönelik genel tutumları inceleyen çevrimiçi bir anket aracılığıyla 18 ila 60 yaş arası 33 yetişkin İngilizce öğrenicisinden toplandı. Araştırma bulguları, katılımcıların özellikle YouTube, TikTok ve Instagram gibi platformlar aracılığıyla günlük olarak İngilizceye maruz kaldıklarını vurgulamaktadır. Katılımcıların %70'inden fazlası kelime bilgisi, telaffuz ve dinleme becerilerinde ilerleme kaydettiklerini belirtirken yaklaşık %60'ı ise özgün içeriklere düzenli maruziyetin konuşma özgüvenlerini artırdığını ifade etmiştir. Öğrenciler ayrıca sosyal medyanın gerçek hayat ifadelerine, deyimlere ve doğal konuşma örneklerine erişim sağladığını vurgulamıştır. Dikkat dağıtıcı unsurlar, argo kullanımının fazlalığı ve zorlayıcı aksanlar gibi bazı sorunlar bildirilmiş olsa da, sonuçlar sosyal medyanın sınıf ortamının dışında sürekli İngilizce öğrenmeyi destekleyen motive edici ve etkili bir araç olduğunu ortaya koymaktadır .Bu çalışma, sosyal medyada İngilizceye nicel maruz kalma ile yetişkin EFL öğrenicilerinin özgüvenini ve katılımını şekillendirmede öğrenicilerin katılımının niteliksel doğası arasındaki farkı vurgulayarak, gayri resmi SLA literatürüne katkıda bulunmaktadır.

Anahtar Kelimeler: Sosyal medya, yetişkin öğrenciler, informal öğrenme, İngilizce dil gelişimi, dijital platformlar.

INTRODUCTION

Nowadays, social media has become an essential part of our lives. Many people of all ages frequently use this technology. The students are very familiar with social media. They use social media for many purposes, such as accessing information, sharing ideas, and seeking entertainment. (Savitri, M., Yuliyani, A., Hamid, F., & Suliaman, A., 2022) Recently, many social media applications have been launched with a range of features and purposes. Twitter is a microblogging platform for creating short messages to be posted and shared with its audience online. Social networking sites like Facebook allow users to connect with others by inviting them, creating, and sharing personal information. YouTube was created to let users find and share content, such as sharing videos and photos (Dabbagh & Kit Santas, 2012; Savitri, M., Yuliyani, A., Hamid, F., & Suliaman, A., 2022). Even though social media was not created for educational purposes, it has drawn educators' attention, especially in English language learning. Many studies have examined the use of social media in English language teaching. (Savitri, M., Yuliyani, A., Hamid, F., & Suliaman, A., 2022). In the EFL context, the use of social media provides some opportunities to develop students' English language skills. It is a fact that English is one of the most widely used languages on social media, as it is an

international language used worldwide to communicate. Based on preliminary research, university students in the English Education Study Program are not interested in reading English books in the library, discussing English topics with their friends, or learning English through other media, such as watching TV or educational videos. However, the data showed that most students in this major use social media, such as Facebook, Twitter, Instagram, and YouTube, to find English words and sentences they can use. Sometimes, the students can use the words and sentences when they speak with their friends. Those words are the words that usually appear on social media. In addition, this might happen because social media settings are mostly in English. Then, because college students mostly use social media, they use it most of the time. This, in turn, makes it easier for people to learn this language by memorizing words instead of relying on other materials (books, libraries, newspapers, etc.). (Al Arif, T. Z. Z. 2019). From an SLA perspective, such informal contact with English in social media is analyzable by input-based and interactionist perspectives. Krashen's (1985) Input Hypothesis and Long's (1996) Interaction Hypothesis draw attention to the need for meaningful interaction, with the former focusing on comprehensible input and the latter on noticing and interaction facilitation of language development. Consequently, it is argued that social media platforms can serve as semi-authentic contexts in which mature language learners obtain both linguistic input and opportunities to interact outside the confines of formal classrooms.

Based on the above background, this article investigates to what extent social media can be a worthwhile and effective supplementary material for adult learners of English as a Foreign Language (EFL). In particular, the study investigates which social media tools are accessible to adult EFL learners and how suitable these tools are. Learners' preferences and perceptions are brought into focus with this study which provides a fuller picture of the impact of social media for English language learning of EFL learners. In the end, the purpose is to examine the answers of the following questions: How often do adult learners come across English on social media? Which ones do they prefer? What language skills do they consider that help them the most? And What are the biggest challenges in learning through digital media? In this frame, the present study seeks answers to the following research questions;

How frequently do adult learners encounter and use English on social media?

Which platforms do they use most for English learning?

What English language skills (vocabulary, listening, speaking, pronunciation) do they believe social media helps improve?

Does social media increase their confidence in using English?

What challenges or limitations do they experience?

2. MATERIAL AND METHODS

2.1 Participants

The study was carried out with 33 adult EFL students with ages ranging between 18 and 60. This varied population allowed the study to address patterns in social media usage, exposure to English, advancement in vocabulary and pronunciation, confidence while speaking, and attitudes in general toward digital learning.

2.2 Instrument

A web-based survey was designed with a mix of closed-ended and open-ended questions. The survey was centered on the following aspects: the frequency of adult learners using English on social media, the most popular social media platform among adult learners, the language skills that can be improved the most through English learning on social media, and the barriers to using social media as a means of learning. Cronbach's alpha (α) was used to assess the internal consistency of the questionnaire items.

2.3 Procedure

The online questionnaire was piloted with 33 adult EFL learners. It was carried out online on Google Forms. The data were gathered through Google Forms. Descriptive statistical techniques and thematic interpretative analysis were used to analyse the quantitative and qualitative data.

2.4 Validity and Reliability

The questions of the online questionnaire were based on literature concerning social media and language learning, and therefore the questions were directly related to the research areas i.e. use of the platform, the language skills, confidence, and challenges), ensuring content validity. The face validity was tested with unambiguous questions. Construct validity was ensured by focusing on particular content (such as vocabulary learning, pronunciation, confidence in speaking, and listening to English). The reliability was increased by introducing terminology and examples from social media to make sure that the respondents fully understood the questions. Content validity was also established through expert review by two English language teaching and educational measurement faculty members.

Ethical Considerations

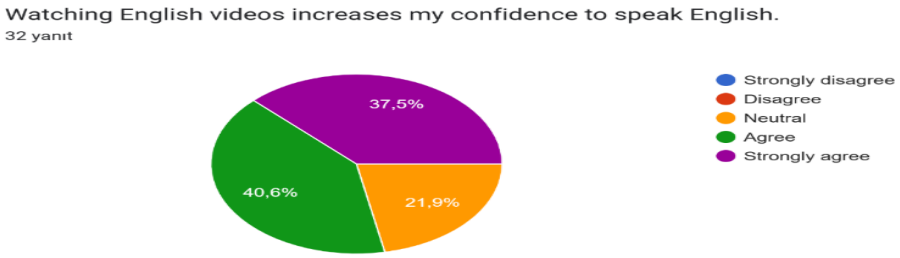
The study was voluntary, and informed consent was obtained from all participants before the data collection. There were no identifying details collected, and responses were anonymous. The data were kept confidential and were used for academic purpose only.

3. RESULTS AND DISCUSSION

3.1 General Attitudes Toward Social Media on English Learning

Results showed 40.6% of the respondents indicated "agree" that confidence to speak in English is increased by watching English videos. A further 37.5% responded that they "strongly agree" and 21.9% that they felt "neutral". That statistic indicates that social media had a positive impact on self-confidence in learning English. This is consistent with Rao (2019) that postulates that greater exposure to genuine digital materials may increase learners' confidence to communicate more in EFL environment.

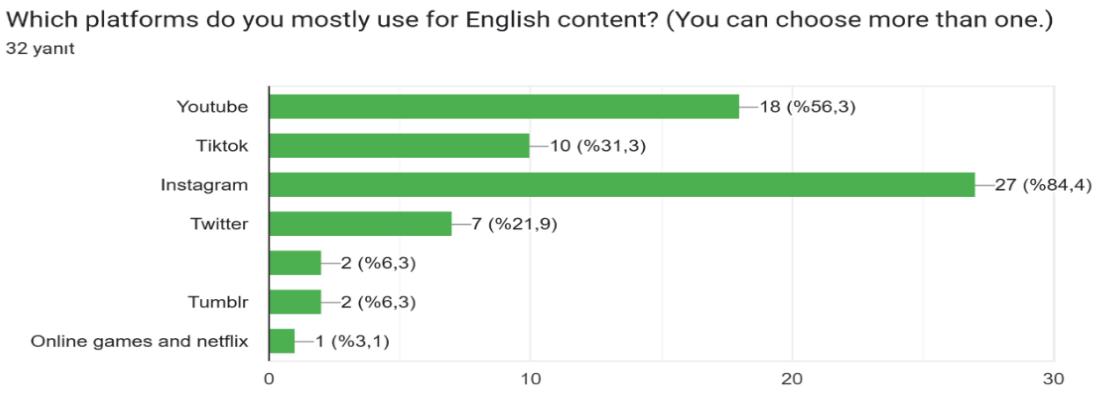
Table 1. Self-confidence results



3.2 Preferences of Social Media Learning English

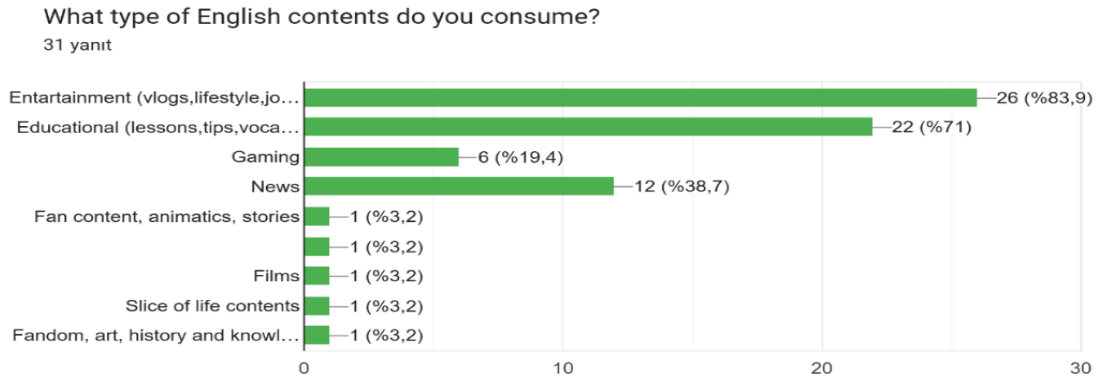
Participants preferred "Instagram" (84.4%), "YouTube" (56.3%) and "TikTok" (31.3%). Also 21.9% was given for Twitter. These tastes indicate that some social media are positive effects for learning English. It is a similar trend in the research results that is taken by Safitri et al. (2022) that found that entertaining-based contents acted as gateway contents to continued use of English in the online realm.

Table 2. Platform Preferences



Entertainment content was the most favored by (83.9%). The following educational content received 71%. News had 38.7 % and gaming 19.4%. It indicates that adult EFL English learners seem to have similar way in watching entertaining as well as informative programs.

Table 3. Content Preferences



4. CONCLUSION

This research indicates that social media can be a good and effective supplementary resource for EFL learners. The findings indicate that regular consumption of social media English (SME) can contribute to learners' improvement in key language skills, particularly vocabulary, pronunciation, listening comprehension and speaking confidence. With its portfolios of authentic language, YouTube, TikTok, Instagram appear to captivate learners' interest and to foster continual language learning outside the traditional classroom environment. Although participants identified some disadvantages, such as distractions, informal language and foreign accents, these concerns did not markedly diminish the perceived benefits of learning via social media. Rather, they indicate that digital literacy/digital learner autonomy need to be promoted so as to make full use of the educational potentials of these platforms. In general, the findings indicate that social media may be a vital source of informal language learning for adult language learners. Further research with a larger sample size and longer study duration is recommended in order to gain better insight on how to capitalise on social media in the English language teaching and learning context. In a broad sense, this research contributes to the expanding field of informal language learning research by underscoring that adult learners' confidence and competence development are influenced more strongly by the quality of their social media experiences than the quantity of their social media experiences.

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A POETIC HISTORICAL DOCUMENT CONCERNING THE LIBERATION OF EGYPT FROM FRENCH OCCUPATION

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Abstract

Egypt came under Ottoman rule during the reign of Sultan Selim I (1512-1520) as a result of victories against the Mamluks (1516-1517). After the conquest, Egypt was organized as a province subordinate to Istanbul, a status it held from 1517 to 1914. Towards the end of the 18th century, when the Ottoman Empire's military, political, administrative, and economic power had significantly weakened, Egypt was occupied by the French (1798-1801). This occupation, which coincided with the reign of Sultan Selim III (1789-1807), was carried out in July 1798 by the French army under the command of Napoleon Bonaparte. From the beginning of the 18th century, the Ottoman Empire, having suffered heavy defeats and significant territorial losses in wars with Russia, was no longer able to protect its territorial integrity on its own. Therefore, faced with the occupation of Egypt, it was forced to act with the support of powerful European states. England, uneasy about France's imperialistic military initiatives, sided with the Ottoman Empire and provided military aid. Thanks to this, the Ottoman Empire was able to liberate its Egyptian territories after a three-year occupation.

In the Ottoman Empire, poetic works describing historical events were widespread, with a significant portion focusing on conquests and victories. Analyses of these historiographical poems, which also possess literary merit, help in understanding this type of historical writing in the Ottoman Empire. The Ottoman recapture of Egypt was not only a military success but also of great importance in reinforcing the Sultan's power and the state's authority in the eyes of the people. In commemoration of this victory, poems were written and historical accounts were recorded during the reign of Sultan Selim III. Thus, both the historical event and the euphoria of victory were passed on to future generations. In this study examine and introduce a poetic historical document prepared on the occasion of Egypt's liberation from French occupation, in terms of its form and content. The poem titled “Târîh-i Fütûhât-ı Mısır” (History of the Conquest of Egypt), dated 1216/1801, expresses the joy and satisfaction felt at the successful recapture of Egypt. In this poem, whose author is unknown, a couplet mentioning Sultan Selim gives the year 1216 (Hijri) when Egypt was liberated, according to the abjad numerology system. This study attempts to analyze historical knowledge produced through a literary text by explaining the concepts and discourses used to describe the liberation of Egypt from enemy occupation, which is characterized as a conquest in the aforementioned document written as a product of the Ottoman tradition of historical record-keeping.

Keywords: Islamic History, Ottoman State, Sultan Selim III, Egypt, French Occupation, Defining a date.

MISIR'IN FRANSIZ İŞGALİNDEN KURTARILIŞINA DAİR MANZUM BİR TARİH VESİKASI

Özet

Mısır, Sultan I. Selim'in iktidarı döneminde (1512-1520) Memlûklülere karşı kazanılan zaferler (1516-1517) neticesinde Osmanlı Devleti'nin hâkimiyetine girmiştir. Fetihten sonra İstanbul'a bağlı bir eyalet olarak teşkilatlandırılan Mısır'ın bu statüsü, 1517-1914 yılları arasında devam etmiştir. Osmanlı Devleti'nin askerî, siyasî, idarî ve ekonomik açıdan gücünün iyice zayıfladığı XVIII. yüzyıl sonlarına gelindiğinde ise Mısır, Fransızların (1798-1801) işgaline maruz kalmıştır. Sultan III. Selim dönemine (1789-1807) tekabül eden bu işgal, Temmuz 1798 tarihinde Napolyon Bonapart'ın idaresindeki Fransız ordusu tarafından gerçekleştirilmiştir. XVIII. asrın başlarından itibaren Rusya ile ağır mağlubiyetlerle neticelenen ve büyük toprak kayıplarına mal olan savaşlar yaşayan Osmanlı Devleti, artık toprak bütünlüğünü kendi başına koruyamayacak hale gelmiştir. Dolayısıyla Mısır'ın işgali karşısında yanına Avrupalı güçlü devletlerin desteğini almak suretiyle harekete geçmek durumunda kalmıştır. Fransa'nın emperyal nitelikli askerî girişimlerinden rahatsız olan İngiltere, Osmanlı Devleti lehine tavır alarak askerî yardımlarda bulunmuştur. Bu sayede Osmanlı Devleti, üç yıl süren bir işgal süreci sonrasında Mısır topraklarını kurtarabilmiştir.

Osmanlı'da tarihî olayları anlatan manzum eserler yaygın olup bunların önemli bir kısmı, fetihler ve zaferler üzerine yazılmıştır. Edebî yönü de bulunan manzum tarihlerin analizleri, Osmanlı'daki bu türden tarih yazıcılığının anlaşılmasına yardımcı olmaktadır. Mısır'ın Osmanlı tarafından geri kazanılması, askeri bir başarı olmanın ötesinde, padişahın kudretinin ve devletin gücünün halk önünde pekiştirilmesi açısından büyük bir öneme sahiptir. İşte bu zaferin anısına da, Sultan III. Selim döneminde şiirler yazılmış, tarihler düşürülmüştür. Böylece hem tarihî olayın hem de zafer coşkusunun gelecek nesillere aktarılması sağlanmıştır. Bu çalışmada Mısır'ın Fransız işgalinden kurtarılışı vesilesiyle hazırlanmış manzum bir tarih vesikası, şekil ve muhteva açısından incelenerek tanıtılmıştır. 1216/1801 tarihli *Târîh-i Fütûhât-ı Mısır* başlıklı manzume, Mısır'ın geri alınışı başarısından duyulan sevinç ve memnuniyeti dile getirmektedir. Şairi belli olmayan manzumede Sultan Selim ifadesinin de geçtiği beyit, ebced hesabıyla Mısır'ın kurtarıldığı hicrî 1216 yılını vermektedir. Osmanlı tarih düşürme geleneğinin bir ürünü olarak yazılan mezkûr vesikada fetih olarak nitelenen Mısır'ın düşman işgalinden kurtarılışının hangi kavramlar ve söylemler aracılığıyla ifade edildiği açıklanarak edebî bir metin yoluyla üretilen tarih bilgisi analiz edilmeye çalışılmıştır.

Anahtar Kelimeler: İslam Tarihi, Osmanlı Devleti, Sultan III. Selim, Mısır, Fransız İşgali, Tarih Düşürme.

GİRİŞ

Mısır, Osmanlı tarihinde Sultan I. Selim'in hükümdarlık döneminde (1512-1520) fethedilmiş ve müteakiben İstanbul'a bağlı bir eyalet olarak teşkilatlandırılarak Osmanlı Devleti'nin Afrika topraklarındaki bir idarî birimi olmuştur. Osmanlı Devleti'nin siyasî, askerî ve iktisadî bakımdan stratejik eyaletlerinden olan Mısır, 1517-1914 yılları arasında Osmanlı idaresine tabi olmakla

birlikte (es-Seyyid, 2004: 29/563; Görgün, 2004: 29/570) XVIII. yüzyılın sonlarında Fransa'nın yayılmacı politikaları çerçevesinde işgale uğramıştır. Napolyon Bonapart (ö. 1821) komutasındaki Fransız ordusunun 1798 yılında Mısır'ı işgali, yalnızca bölgesel bir askerî harekât olmayıp, Osmanlı Devleti'nin Doğu Akdeniz'deki hâkimiyetini ve dönemin uluslararası güç dengelerini doğrudan etkileyen önemli bir tarihî kırılma noktasıdır. Üç yıllık bir işgal döneminden sonra 1801 yılında Fransızların Mısır'dan çekilmesi ve bölgenin yeniden Osmanlı hâkimiyetine girmesi ise, dönemin müellifleri tarafından mensur ve manzum metinlerle kayıt altına alınmıştır. Bu bağlamda, Mısır'ın Fransız işgalinden kurtarılışına dair kaleme alınmış tarih vesikaları, söz konusu hadisenin Osmanlı zihniyet dünyasındaki algılanış biçimini yansıtması bakımından ayrı bir önem taşımaktadır.

Bu çalışmanın amacı, Mısır'ın Fransız işgalinden kurtarılışını konu edinen manzum bir tarih vesikasını tarihsel bağlamı içerisinde inceleyerek, metnin birincil kaynak niteliğini ve tarih yazımı açısından taşıdığı değeri ortaya koymaktır. *Târîh-i Fütûhât-ı Mısır* başlıklı manzum vesika, şekil ve muhteva açısından değerlendirilecektir. Osmanlı tarih düşürme geleneğinin bir ürünü olan mezkûr vesikada fetih olarak nitelenen Mısır'ın düşman işgalinden kurtarılışının hangi kavramlar ve söylemler aracılığıyla ifade edildiği açıklanarak edebî bir metin yoluyla üretilen tarih bilgisi analiz edilmeye çalışılacaktır.

Araştırmanın birincil kaynağını teşkil eden manzum vesika, Türkiye Cumhuriyeti Cumhurbaşkanlığı Osmanlı Arşivi'nde TS.MA.e. 362 fon kodlu dosyada yer almaktadır. Söz konusu belgenin arşiv kayıtları içerisinde yer alması, metnin yalnızca edebî bir ürün değil, aynı zamanda tarihî bir vesika niteliği taşıdığını göstermektedir. Manzum vesikanın muhtevası (Mısır'ın işgal ve kurtarılışı hadisesi) hakkında genel bilgileri sunmak üzere Ahmed Cevdet Paşa'nın (ö. 1895) *Târîh* ve Mustafa Behcet Efendi'nin (ö. 1834) *Terceme-i Târîh-i Mısır* adlı eserlerinden istifade edilmiştir. Ayrıca ikincil kaynak olarak güncel akademik literatür çalışmaları da göz önünde bulundurulmuştur.

Çalışmada yöntem olarak, arşiv belgesi temelli tarihsel analiz ile metin incelemesi birlikte kullanılmıştır. Konunun işlenişinde öncelikle dönem kronikleri çerçevesinde Mısır'ın işgal süreci özetlenecek; ardından manzum belge, içerik ve söylem açısından incelenerek, dönemin siyasi algısını ve tarih anlayışını nasıl yansıttığı ortaya konulmaya çalışılacaktır. Bu sayede, manzum tarih vesikasının edebî yönünün ötesinde, tarih yazımı açısından taşıdığı belge değeri değerlendirilmiş olacaktır.

ARAŞTIRMA VE BULGULAR

Tarihî Arka Plan: Fransızlar'ın Mısır'ı İşgali (1798-1801)

Fransa, 1789 İhtilali sonrası, emperyal hedeflerle Avrupa ve Akdeniz üzerinde askerî faaliyetlere yönelmiştir. Sömürgecilik yolunda en büyük rakibi olan İngiltere'nin Akdeniz'deki hâkimiyet emelleri, Fransa'yı rahatsız etmiştir. Dolayısıyla İngiltere'nin sömürgesi olan Hindistan ile ulaşım bağlantısını kesmek ve bölgede gücünü artırmak için önemli bir stratejik nokta olan Mısır'ı ele geçirmek istemiştir. Bu amaçla Napolyon Bonapart, otuz savaş gemisi, dört yüzden fazla nakliye gemisi ve çok sayıda askerden oluşan Fransız donanması [2] ile Akdeniz'de konumunu

[2] Napolyon Bonapart'ın donanmasını oluşturan gemi ve asker sayısı hakkında başka veriler de mevcuttur. Bk.: Cevdet Paşa, 1309: 6/325.

sağlamlaştıran hamlelerden sonra[3] Mısır'a doğru harekete geçmiştir (Cevdet Paşa, 1309: 6/323-324). Bonapart, 17 Muharrem 1213/1 Temmuz 1798 tarihinde İskenderiye'ye asker çıkartmış; ardından donanmanın asıl kısmını ve mühimmatını Ebûhur Limanı'na demirleyip az sayıdaki küçük çaplı gemilerden tertip ettiği ince donanma ile 6 Temmuz'da Reşid'e gelmiş; Nil Nehri üzerinden ilerleyerek 13 Temmuz'da Rahmâniyye'de ve 21 Temmuz'da Ehramlar bölgesinde (Piramitler Savaşı) direniş gösteren yerel unsurları etkisiz duruma getirmiş ve Kahire'ye girmiştir (Cevdet Paşa, 1309: 6/325, 327-328, 334-337; Zinkeisen, 2011: 6/612; Çolak, 2008: 150-151).

Fransızların İskenderiye'ye çıkarma yaptıklarını gören bir Rum gemisi, limandan hızla uzaklaşıp Rodos açıklarına kadar gelmiştir. Bölgede istihbarat amaçlı seyreden Osmanlı donanma unsurları, gemidekilerle irtibat kurduklarında Mısır'daki durumdan haberdar olmuşlar ve işgal haberini, 3 Safer 1213/17 Temmuz 1798 tarihli ve mühürlü bir arîza ile Dersaâdet'e iletmişlerdir (Cevdet Paşa, 1309: 6/329). Fransa'nın gerek Avrupa'da gerek Akdeniz'de bir süredir devam eden saldırgan faaliyetleri Osmanlı yönetimince kuşkuyla takip edilmekle birlikte bu askerî müdahalesi, hayretle karşılanmıştır. Zira Fransa'nın Mora ya da Arnavutluk sahilleri gibi başka hedeflere saldırı ihtimali öngörülmekte[4], bunun yanı sıra Paris sefiri Seyyid (Moralı) Ali Paşa'dan İstanbul'a gelen bilgiler de Mısır'a saldırı fikrini zayıflatmaktaydı (Cevdet Paşa, 1309: 6/290, 319; Karal, 1999: 5/27-29; Çolak, 2008: 146). Diğer taraftan Fransa, Osmanlı Devleti'nin Avrupalı devletler arasında dostluk derecesinde ilişkilerinin olduğu bir devletti. Fransız elçisinin diğer ülkelerin elçilerine göre üstünlüğü, Fransız tüccar ve vatandaşlarının ayrıcalıkları vardı. İhtilal sonrası Fransızlar her taraftan kovulurken ve kendilerine nefretle bakılırken Osman topraklarında serbestçe dolaşabilmekte ve ticaret yapabilmekteydiler. Osmanlı Devleti, krallığın kaldırıldığı bir devlet de olsa Fransa'yı Avusturya ve Rusya'ya karşı kendine daha yakın görmekteydi. Hatta bu durum, İngiltere'nin serzenişine neden olmuştu. Ayrıca devrin padişahı III. Selim de, Fransız etkisinde bir ıslahat politikası takip etmekteydi. Dolayısıyla Fransızlardan bu denli dostluğu ayaklar altına alan bir hareket beklenmemekteydi (Cevdet Paşa, 1309: 6/331-332).

Osmanlı Devleti, Mısır işgal edildiğinde, bir iç mesele olan Pasbanoğlu isyanı ile uğraşmakta olduğundan (Cevdet Paşa, 1309: 6/329); ayrıca bu asrın başlarından itibaren Rusya ile ağır mağlubiyetlerle neticelenen ve büyük toprak kayıplarına mal olan savaşlar yaşamış olup artık toprak bütünlüğünü kendi başına koruyamayacak hale geldiğinden dolayı Fransa'ya hemen güçlü bir karşılık verememiştir. Mısır'ın işgali karşısında denge politikası güderek yanına Avrupalı güçlü devletlerin desteğini almak suretiyle harekete geçmek durumunda kalmıştır. 28 Temmuz'da İstanbul'da Fransa'ya karşı başlatılan ittifak görüşmeleri sonucunda 23 Kasım 1798'de Rusya; 5 Ocak 1799'da İngiltere ile anlaşma imzalanmıştır (Cevdet Paşa, 1309: 6/332; Karal, 1999: 31). Osmanlı Devleti, özellikle İngiltere'den aldığı askerî yardımlar sayesinde Mısır topraklarını işgalden kurtarabilmiştir. Bu bağlamda işgal hadisesinde önemli bir gelişme, İskenderiye yakınındaki Ebûhur Limanı'nda demirlenmiş Fransız donanmasının, Amiral Nelson önderliğindeki İngiliz donanması tarafından 1 Ağustos 1798'de yakılıp imha edilmesidir (Cevdet Paşa, 1309: 6/341-342; Mustafa Behcet, 1222: 39-40; Zinkeisen, 2011: 6/612). Bonapart'ın gemisinin de bulunduğu donanmanın yok edilmesi sonrasında Fransızların Mısır'da tutunması

[3] Fransız donanması, Tolun (Toulon) Limanı'nda askerî hazırlıklarını tamamladıktan sonra ilk olarak Akdeniz'de stratejik açıdan çok önemli olan Malta Adası'nı ele geçirmiştir. Bk.: Cevdet Paşa, 1309: 6/323.

[4] Fransa İtalya savaşlarında Venedik Cumhuriyetini yok edip Osmanlı Devleti ile sınır komşusu olmuş; Mora ve civarındaki halkın arasında milliyetçilik fikirlerini yaymaktaydı. Bk.: Cevdet Paşa, 1309: 6/331.

zorlaşmıştır. Zira Fransa ile bağlantısı kesilen Bonapart ve ordusu adeta Mısır'a hapsolmuştur. Osmanlı Devleti, Ebûhur'da yaşatılan zayiat sonrasında 2 Eylül 1798'de Fransa'ya savaş ilan etmiştir[5] (Cevdet Paşa, 1309: 6/356).

Donanmasını kaybeden Bonapart, bundan sonraki süreçte Mısır'da tutunabilmek için askerî gücün ötesinde ulemâ, eşraf ve halk ile ilişkilerini güçlendirmek üzere bazı adımlar atmıştır. Örneğin Fransızların Allah'a inandıklarını, Kur'ân-ı Kerim'e ve Hz Peygamber'e saygılı olduklarını, hatta müslüman olduklarını belirten yazılı ilannâmeler hazırlatarak Mısır'ın çeşitli yerlerinde halka okunmasını sağlamıştır.[6] Vefâ-i Nil mevsimi etkinliklerini yaptırmış; Mevlid-i Nebi merasimine katılmış; emîr-i hac tayin ederek hac harcamaları için düzenlemeler ortaya koymuş; Mısır ulemâ ve meşâyihini sarayına davet edip onlara iltifatta bulunmaya çalışmıştır (Cevdet Paşa, 1309: 6/343, 346, 402-405; Mustafa Behcet, 1222: 38-40, 42-44). Ancak tüm bu çabalar, Mısır halkı nezdinde karşılık görmemiş; hatta öfkeli tepkilere yol açmıştır. Zira halk, gün geçtikçe işgalin olumsuz etkilerine ziyadesiyle maruz kalmaktaydı. Fransızlar, halkın örfüne uyum sağlayamadıkları için yaptıkları işler tasvip edilmemiştir. Özellikle kadınların yüzleri açık olarak gezmelerini istemeleri, gece her evin önünde kandil yakılması zorunluluğunu getirmeleri, çarşı genişletme ve araba yolu açma gerekçesiyle insanların işyerlerini ve bazı cami ve mescidleri yıkmaları, Fransa ordusunun ihtiyaçlarını karşılamak için halka ağır vergi yüklemeleri, İskenderiye eşrafından Seyyid Muhammed Küreyyim'i idam etmeleri, Mısır halkının Fransızlara karşı nefret ve şikâyetlerini artırmıştır. Fransa Cumhuriyeti'nin kurulduğu güne denk gelen Mevsim-i İ'tidâl-i Harîfî'de kendilerine özgü bir takım kutlamalar yapmaları, İskenderiye ve Kahire'de halka Fransa simgesi beyaz, kırmızı ve lacivert renklerden oluşan kokartı takma zorunluluğunu getirmeleri halk tarafından hoş karşılanmamıştır (Cevdet Paşa, 1309: 6/344-345; Mustafa Behcet, 1222: 42-45). Fransız ordusunun Mısır'a girişi, Sultan III. Selim'in iradesi gibi gösterilmeye çalışılmış; ancak bu söylemle halk ancak üç ay oyalanabilmiştir. Zaman geçmesine rağmen Devlet-i Aliyye'den Fransızların varlığını onaylayan kimsenin Mısır'a gelmemesi, hatta aksi haberlerin ulaşması üzerine halk Fransızlara karşı isyan hareketleri ile tepkisini göstermiştir. Büyük çaplı kitlesel bir isyan, 10 Cemâziyelevvel 1213/20 Ekim 1798'de Ezher Camii'nde toplanan halk tarafından başlatılmıştır. Fransız güçlerini şaşkına çeviren bu isyan, ancak üç günde bastırılabilmiştir (Cevdet Paşa, 1309: 6/345, 348-349).

Bonapart, Mısır'da kalıcılığı sağlayabilmek için Suriye'nin alınmasını zaruri görmüş; bu doğrultuda Akka'da bulunan Cezzâr Ahmed Paşa'ya (ö. 1804) birkaç defa mektup göndererek onu yanına çekmeye çalışmıştır (Mustafa Behcet, 1222: 41; Karal, 1999: 5/39-40; Çolak, 2008: 157). Bir mektubunda Fransa'nın Devlet-i Aliyye ile müttefik olduğunu, İngilizlerin Fransa'nın Hind'deki yerlerini istila ettiğini ve onlarla aralarında düşmanlık bulunduğunu, bu sebeple Devlet-i Aliyye'nin de izniyle Mısır'a gelmek zorunda kaldıklarını, Mısır'daki maksatlarının asi kölemenleri cezalandırmak ve Mısır'ın ıslahını sağladıktan sonra İngilizlerden yerlerini kurtarmak için Hind'e gitmek olduğunu bildirmiştir. Kölemenlerle mücadele ettiklerini, burada ehl-i İslâm'ı himaye ve şe'âir-i İslâm'ı i'lâ ettiklerini, mahmil-i şerîfi sevk ettiklerini, sikke basımı ve hutbe i'radını padişah adına yaptıklarını, kendilerinden emin ve mutmain olunmasını belirtmiştir. Cezzâr

[5] Fransa'ya karşı savaş ilanı beyannamesi için bk.: Cevdet Paşa, 1309: 6/408-412; Savaş ilanına cevaz veren fetva metni için bk.: Karal, 1999: 5/30.

[6] Napolyon Bonapart'ın İskenderiye zabtı sonrasında bilâd-ı Mısır halkına duyurulmak üzere hazırlattığı ilannâme metni için bk.: Cevdet Paşa, 1309: 6/402-405; Mustafa Behcet, 1222: 12-20.

Paşa'nın mektubu getireni kovması ve mektubu iade etmesi Bonapart'ı kızdırmış ve ordusuyla birlikte onun üzerine gitmiş; Gazze, Remle ve Yafa'yı almak suretiyle Akka önlerine kadar ilerleyen Bonapart, burada Ahmed Paşa'nın güçleri karşısında yenilgiye uğrayarak geri çekilmek zorunda kalmıştır (Cevdet Paşa, 1309: 6/345-346, 7/17-27; Zinkeisen, 2011: 6/613-614).

Akka yenilgisinden sonra Mısır'a dönen Bonapart, yerel beyler, Osmanlı güçleri ve halkın birlikte mukavemet göstermesi karşısında daha fazla dayanamayarak Mısır'dan ayrılmaya karar vermiştir. Yerine vekil bırakarak Eylül 1799'da Fransa'ya gitmiştir (Zeikesen, 2011: 6/614; Çolak, 2008: 160). Her ne kadar yardım göndermeyi vadetse de bunun mümkün olamayacağını gören Fransız ordu yetkilileri anlaşma yaparak çekilmeye karar vermişler; ancak anlaşma görüşmelerinde mutabakat sağlanamayınca çatışmalar bir müddet daha devam etmiş, işgal süreci uzamıştır. Bu süreçte Mısır'da yaşananlara bizzat tanık olan Abdurrahman Cebertî (ö. 1825), işgalin üç tam yıl ve yirmi bir gün sürdüğünü haber vermektedir (Mustafa Behcet, 1222: 254). Sonuç olarak İngilizlerin desteğiyle ve bölgedeki yerel direnişlerle işbirliği yapılarak, 1801 yılında Fransızlar Mısır'dan çıkarılmıştır. 9 Ekim 1801'e Paris'te ön barış antlaşması; 25 Haziran 1802'de de esas barış antlaşması yapılmıştır (Zeikesen, 2011: 6/622-623; Çolak, 2008: 181-182). Osmanlı Devleti bu zafer neticesinde toprak bütünlüğünü yeniden tesis etmiş ve merkezi otoritesini belirli ölçüde güçlendirmiştir.

Târîh-i Fütûhât-ı Mısır Başlıklı Manzum Tarih Vesikası

Osmanlı'da tarihî olayları anlatan manzum eserler yaygın olup bunların önemli bir kısmı, fetihler ve zaferler üzerine yazılmıştır (Yakıt, 2022: 122-126). Manzum tarihler, genel olarak bir hadiseyi tespit etme ve onun tarihini verme bakımından diğer tarih kaynaklarında anlatılan bilgileri tamamlayıcı işleve sahip iken (Özergin, 1960: 161-162) hakkında yeterli bilgi bulunmayan olay veya konularda ise, eşsiz tarih kaynağı durumuna gelmektedirler. Edebî yönü de bulunan manzum tarihlerin analizleri, Osmanlı'daki bu türden tarih yazıcılığının nasıl şekillendiğinin anlaşılmasına yardımcı olmaktadır.

Mısır'ın Osmanlı tarafından geri kazanılması, askerî bir başarı olmanın ötesinde, padişahın kudretinin ve devletin gücünün halk önünde pekiştirilmesi açısından büyük bir önem taşımaktadır. İşte bu zaferin anısına da, Sultan III. Selim döneminde şiirler yazılmış, tarihler düşürülmüştür (BOA TS.MA.e 360/21; 362/42). Böylece hem tarihî olayın hem de zafer coşkusunun gelecek nesillere aktarılması sağlanmıştır. Bunlardan biri *Târîh-i Fütûhât-ı Mısır* başlıklı tarihî vesikadır (BOA, TS.MA.e 362/44). Bu vesika, konuyla ilgili diğer manzum tarih metinlerinden[7] farklı olarak görsel ve sanatsal tarafı ön planda tutularak hazırlanmıştır. Görseli hazırlayanın adı ve onun içine yerleştirilen şiirin müverrihi[8] bilinmemektedir. Görsel, 11 dilimli dairevî bir çiçek figüründen oluşmaktadır. Şiir metni, bu çiçek figürünün iç içe geçmiş 11 yaprağına yazılmıştır. Dairenin tüm dilimlerinin birleştiği orta kısımda küçük bir daire içinde mim harfi yer almaktadır. Şiirin beyitleri belirli bir usulde çiçek figürüne yerleştirildiği gibi okuyuşta da bu usulün takip edilmesi gerekmektedir. Buna göre, her beyit, ortada yer alan mim harfinden başlamakta, çiçeğin

[7] Örneğin Hazine Altıncı Kâtibi Arif'e ait manzum tarih herhangi bir görsel unsur kullanılmaksızın beyitler şeklinde kayda geçirilmiştir. Bu şiirin son mısraındaki "Bugün iklim-i Mısr'ı Şeh Selîm aldı bi-hamdillâh" ifadesi hicrî olarak 1215 yılına tekabül etmektedir. Bk.: BOA, TS.MA.e. 360/21-10.

[8] Ebced hesabıyla manzum olarak tarih düşürme işini yapan kişiye müverrih denilir. Bk.: Devellioğlu, 2006: 790; Yakıt, 2022: 86).

bir yaprak diliminin etrafı boyunca dolanarak devam etmekte ve sonunda yine ortadaki mim harfinde tamamlanmaktadır. Birbirini takip edecek şekilde bu işlem, 11 defa yapıldığında dairevî tanzim edilmiş manzume sona ermektedir. Her bir yaprakta bir beyit yer almakta olup manzume toplamda 11 beyit 22 mısradan meydana gelmektedir. Manzum vesikanın metni şu şekildedir:

Târîh-i Fütûhât-ı Mısır

Meyl-i Mısr itdi França olmağı reîs-i mukîm

Anda bâkî itmedi hamden te‘âlâ ol Kerîm

Meyl ider kâfir bu dünyâ gülşenîn-i bülbül ola

Hamden li’llâh kılmadı bünyâdını Bâkî Rahîm

Mil çekâsin çeşm-i a‘dâ hâl-i akvâmın görüb

Nush olur böyle gazâdan cümle a‘dâ-yı kadîm

Meydenî ‘irfâna şâd itdi fünûn-ı târîhin

Çekdi ‘asker-i Mısrı aldı lutfla Sultân Selîm (Târîh-i Mısra‘ li-sene 1216)

Mihalot tîğını hamden küşâd itdi bu dem

Dîn ‘adûsün bes nişîn itdirdi Kahhârî ‘Alîm

Mey makarr meyhâneler bünyâdını tutmuş iken

Saf kılıçla hâkrîz itdi Hudâyî ol ‘Alîm

Meyl idüb şâhım gazâya ‘avn-ı yâ Mevlâ deyüb

Virdi nusret-i hâmisin Hak çekdi tuğrâsın Nedîm

Mîbnâh itdi Hudâya aldı tîğın destine

Darb-ı Yûsuf’dan França miskîn itdi cahîm

Mîr u mîrân-ı post-nişîn olmak diler bed-likâ

İnkisârı ümm-i dünyâ eyledi hâk-i Rahîm

Mey himâyet perdesin itdi gazâda ref‘-i mât

Ol elest peymânımız a‘dâya virdi gamm-ı elîm

Meydenî merdâneye çekdi sancağın tutub

Dîn eri meydânın itdi tutdu ol a‘dâyı bîm

Şekil ve Muhteva İncelemesi

Târîh-i Fütûhât-ı Mısır başlıklı manzum tarih, klasik Osmanlı şiir geleneğine uygun olarak aruz vezniyle yazılmıştır. Metnin bütününe bakıldığında tarih düşürme amacıyla oluşturulmuş manzumelerin genel özelliklerini (Yakıt, 2022: 530) taşıdığı görülmektedir. Beyitlerin vezin ve söyleyiş bakımından tarih manzumelerinde sıkça rastlanan, anlamı öne çıkaran ve didaktik yönü ağır basan bir yapıya sahip olduğu anlaşılmaktadır. Nazım birimi beyit olmakla birlikte, metinde

belirgin bir gazel ya da kaside düzeninden ziyade, olay merkezli bir üslup tercih edilmiştir. Kafiye düzeni büyük ölçüde tutarlıdır; ancak bazı mısralarda anlamın öncelenmesi sebebiyle ses estetiğinin ikinci planda kaldığı söylenebilir.

Metnin en dikkat çekici özelliklerinden biri, tarih düşürme tekniğinin açık biçimde uygulanmış olmasıdır. *"Çekdi 'asker-i Mısrı aldı lutfla Sultân Selîm"* mısraı, tarih düşürme çeşitlerinden "mânen tarih" kategorisinin "tam tarih/tarih-i tam" türüne (Yakıt, 2022: 415-416, 423-424; Yakın, 1969: 555) uygun olarak ebced hesabıyla 1216 (1801) tarihini vermekte ve Mısır'ın Fransız işgalinden kurtarılışını tarihleyen anahtar ifadeyi oluşturmaktadır. Bu yönüyle manzume, tarih düşürme geleneğine uygun biçimde hem olayı hem de tarihini aynı anda kayıt altına almaktadır.

Manzum tarihe muhteva açısından bakıldığında, metnin merkezinde Fransa'nın Mısır'ı işgali ve bu işgalin ilahî yardım ve Osmanlı otoritesi sayesinde sona erdirildiği fikrinin yer aldığı görülmektedir. Osmanlı topraklarına saldırmak suretiyle düşmanlıklarını açığa çıkaran Fransızlar şiirde, kâfir olarak nitelenmekte "miskîn, bed-likâ" gibi ifadelerle küçültücü bir dille anılmakta, "reîs-i mukîm, mîr u mîrân-ı postnişîn" olma tutkusuyla hareket ettikleri ve dünya hırsına kapıldıkları belirtilmektedir. Bâkî olan Allah'ın lütfu sayesinde düşmanın Mısır'da tutunamayıp bâkî olamadığı ve bundan dolayı Allah'a hamd ve şükür edildiği anlaşılmaktadır. Bu söylem, dönemin Osmanlı zihniyet dünyasını ve işgal güçlerine yönelik algıyı yansıtması bakımından önemlidir.

Metinde sıkça "Hak", "Hudâ", "Rahîm", "Kerîm", "Alîm" gibi ilahî sıfatlara yer verilmesi; Fransızlar'ın din adûsu (düşmanı), Osmanlı askerlerinin gazâ yapan din eri (askeri) olarak nitelenmesi Mısır'ın kurtuluşunun dünyevî bir askerî başarıdan ziyade kutsal bir zafer olarak algılandığını göstermektedir. Bu durum, Osmanlı tarih yazımında sıkça karşılaşılan din merkezli yorum anlayışıyla örtüşmektedir. Metin, yalnızca işgalin sona erdiğini bildirmekle kalmamakta; aynı zamanda "fetih", "gazâ", "sancak", "asker" ve nusret" kavramları etrafında bir zafer anlatısı kurmaktadır. Bu yönüyle manzume, dönemin resmî tarih anlatısıyla paralel bir dil kullanmakta ve devlet merkezli tarih algısını desteklemektedir. Dolayısıyla söz konusu şiir, hem olayın kronolojisine işaret eden bir tarih vesikası hem de Osmanlı siyasal ve dinî söylemini yansıtan tarihî bir belge niteliği taşımaktadır.

Şekil ve muhteva birlikte değerlendirildiğinde, bu manzum vesikanın Mısır'ın Fransız işgalinden kurtarılışını kayıt altına alan önemli bir birincil kaynak olduğu görülmektedir. Metin, estetik kaygıdan ziyade belge değeri ön planda tutularak kaleme alınmış olup, Osmanlı tarih düşürme geleneğinin XIX. yüzyıl örneklerinden biri olarak dikkat çekmektedir. Bu yönüyle manzume, Osmanlı tarih kaynaklarını tamamlayan ve dönemin zihniyet dünyasını yansıtan özgün bir tarihî vesika olarak değerlendirilebilir.

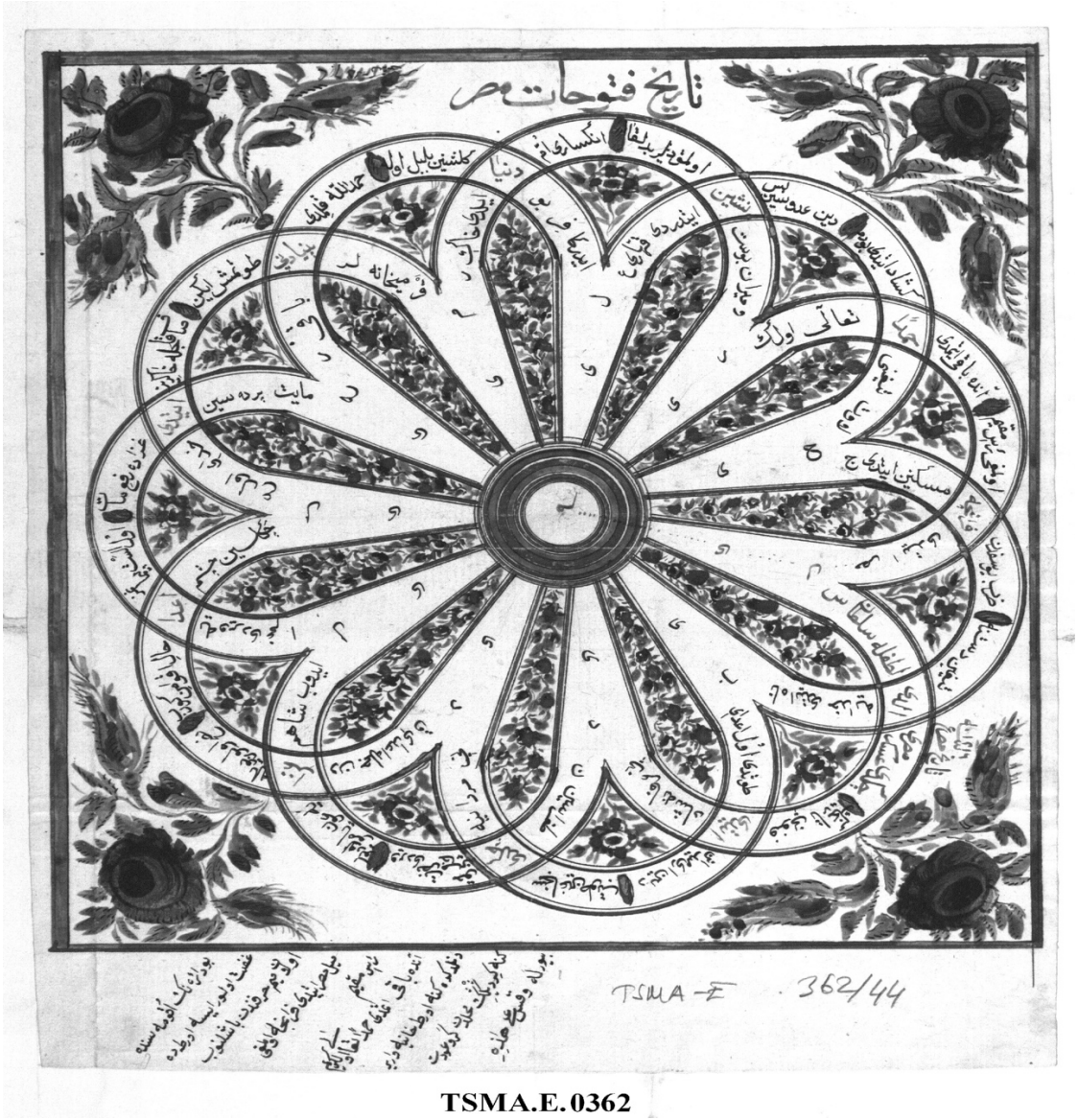
SONUÇ

Bu çalışma, Mısır'ın Fransız işgalinden kurtarılışını konu alan manzum bir tarih vesikasını tarihsel ve metinsel açıdan inceleyerek, eserin hem birincil kaynak niteliği hem de tarih yazımı açısından taşıdığı önemi ortaya koymuştur. Manzum metin, klasik Osmanlı tarih düşürme geleneğine uygun biçimde, hem olayı hem de tarihini aruz vezni ve ebced hesabı ile kayıt altına almıştır.

Yapılan metin incelemesi, vesikanın biçimsel açıdan tarihî bir olayı belgeleme amacı taşıyan, anlamı ön planda tutan didaktik bir yapı sunduğunu göstermiştir. Manzum vesika, tarihî olayı kayda geçirirken aynı zamanda padişahın kudretini ve devletin gücünü halk önünde yüceltmekte; zaferi manevî ve ahlakî bir çerçevede sunmakta (Allah'ın inayeti) ve düşmanı olumsuz bir biçimde tasvir ederek Osmanlı'nın üstünlüğünü vurgulamaktadır. Bu çerçevede vesika hem edebî bir değer taşımakta hem de tarihsel, politik ve dini mesajlar içermektedir.

Sonuç olarak, bu manzum tarih vesikası, Mısır'ın Fransız işgalinden kurtarılış sürecine dair tarihî gerçekliği edebî bir metin formunda yansıtması bakımından değerli bir kaynak olmanın ötesinde, Osmanlı tarih geleneği ve siyasal ideolojisi hakkında da önemli ipuçları vermektedir. Böylece çalışma, hem Osmanlı dönemi tarih metinlerinin incelenmesine hem de Mısır tarihinin dönüm noktası olan bir hadisenin anlaşılmasına katkıda bulunmaktadır.

EK-1



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IN SILICO TARGET PREDICTION AND PHARMACOLOGICAL PROFILING OF A NOVEL DRUG-LIKE MOLECULE USING SWISSTARGETPREDICTION

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Abstract

In this study, the potential biological targets of a novel drug-like molecule were predicted using the SwissTargetPrediction computational platform. Target prediction is a key step in early-stage drug discovery, as it provides valuable insight into the possible mechanism of action of candidate compounds. The computational analysis revealed that the molecule exhibits potential interactions with multiple target classes, including G protein–coupled receptors (GPCRs), enzymes, kinases, nuclear receptors, ion channels, transporters, and proteases. Among these target families, GPCRs and enzymes represented the most prominent predicted target groups. This diversified target profile suggests that the molecule may exert multi-pathway pharmacological effects. The presence of kinase and nuclear receptor predictions further indicates possible involvement in intracellular signaling and gene regulation pathways. The predicted interaction with ligand-gated ion channels suggests a potential effect on cellular excitability and ion transport mechanisms. Furthermore, transporter-related targets indicate that the molecule may influence membrane transport processes. The broad distribution of target classes reflects the structural complexity and functional versatility of the compound. Such multi-target activity may enhance therapeutic efficacy but can also increase the risk of off-target effects. Therefore, early identification of possible molecular targets is essential for balancing efficacy and safety. SwissTargetPrediction provides a rapid and cost-effective strategy for preliminary target identification prior to experimental validation. The results

of this study provide a strong computational foundation for future in vitro and in vivo biological assays. Overall, the investigated molecule demonstrates promising multi-target pharmacological potential and represents a viable candidate for further experimental drug development studies.

Keywords- SwissTargetPrediction, target prediction, drug discovery, G protein–coupled receptors, kinases, enzymes, in silico pharmacology, multi-target activity.

INVESTIGATION OF THE BIOPHARMACEUTICAL IMPACT OF TPSA AND LOGP PARAMETERS ON A NOVEL DRUG CANDIDATE

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Abstract

In this study, the biopharmaceutical suitability of a novel molecular structure was evaluated based on its topological polar surface area (TPSA) and lipophilicity (LogP) parameters using in silico methods. TPSA is one of the key determinants of passive membrane diffusion and plays a crucial role in predicting intestinal absorption. The obtained TPSA value indicates that the molecule possesses favorable polarity for efficient oral absorption. This suggests that the compound has the potential to cross biological membranes through passive diffusion mechanisms. LogP analysis demonstrated that the molecule exhibits moderate lipophilicity, which is essential for achieving an optimal balance between aqueous solubility and lipid membrane permeability. This balanced distribution allows the compound to remain sufficiently soluble in physiological fluids while maintaining strong membrane penetration ability. The combined interpretation of TPSA and LogP provides valuable insight into the expected bioavailability of the molecule. The interaction between these two parameters strongly influences drug transport, dissolution behavior, and tissue distribution. In addition, the results suggest that the molecule may demonstrate favorable pharmacokinetic properties following oral administration. However, slight deviations from the optimal range indicate that formulation optimization strategies may further enhance absorption efficiency. The study highlights the significance of early-stage computational screening in

predicting biopharmaceutical performance. Overall, the in silico findings indicate that the investigated compound represents a promising candidate for further pharmaceutical development and experimental validation.

Keywords- TPSA, LogP, biopharmaceutical profiling, membrane permeability, oral bioavailability, in silico prediction.

DIAGNOSIS OF VERTICAL ROOT FRACTURES: AN UPDATE

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Abstract

Vertical root fracture (VRF) is a complication that can occur during or after endodontic root canal treatment and usually requires tooth extraction. VRFs can develop after the placement of retention pins or screws, especially in mandibular molars and premolars. Excessive occlusal force in restored teeth and endodontically treated, uncrowned posterior teeth is a significant etiological factor for VRFs. Early detection of VRFs is crucial in order to prevent extensive damage to the supporting periodontal and alveolar tissues. However, VRFs often present a diagnostic challenge due to the fact that patients may show mild or no symptoms. Dentists typically use a variety of methods to diagnose VRFs, including patient history, clinical examination, and radiological evaluation. Vertical root fractures are defined as longitudinal fractures that begin at the apical portion of the root from the root canal wall and extend towards the outer surface and crown of the root. Due to the absence of specific signs and symptoms, the definitive diagnosis of these fractures may be difficult. In this presentation we will focus on the basic radiological techniques utilized in the diagnosis of VRF along with selected cases. In addition, applications of periapical radiography, panoramic radiography, cone beam computed tomography, ultrasonography and artificial intelligence-based diagnosis will be comparatively discussed in terms of VRF diagnosis.

Key words: Vertical Root Fracture; Diagnosis; Radiology; Diagnostic Techniques.

Introduction

Vertical root fractures (VRFs) refer to fractures that run longitudinally in the root, extending from the inner canal wall to the periodontium. They are considered as cracks that begin at the root and extend vertically up the crown. They may go undetected and undiagnosed because they typically don't show any signs or symptoms. VRFs have the strong potential to lead to an infection in the surrounding bone and jaws, which can be noticeable and painful for the patient. They can occur in teeth with or without root canal treatment. This complication may occur during or after endodontic root canal treatment and usually requires tooth extraction in order to prevent further damage to tooth and surrounding bone (1,2). VRFs can develop after the placement of retention pins or screws, especially in mandibular molars and premolars. Typically, there are no specific signs or symptoms, therefore, in cases where a vertical root fracture is suspected, a comprehensive clinical, radiographic, and periodontal examination should be performed. In addition, symptoms and radiological features can mimic the signs of failed endodontic treatments or periodontal disease (1-4).

Clinically, direct visualization of the fracture line, the presence of a sinus tract, and the depth and mobility of deep, narrow, isolated periodontal probing are indicative. Radiologically, a halo or 'J'-shaped radiolucency around the fracture root, or complete separation of the fracture root, are indicative. The combination of these clinical and radiological signs and symptoms is the basic feature of VRF (1-7).

Radiographic Techniques

Basic radiographic technique utilized to diagnose VRF in routine dental practice is intraoral periapical images. Radiographic appearance is well-defined yet soft radiolucent band where central x-ray beam cuts fracture line obliquely. The objective radiographic finding of VRF is the observation of the radiolucent fracture line. In most cases, it has been stated that the fracture is in the bucco-lingual direction and extends along the root. If X-rays pass through the fracture line, the fracture line in this direction is observed as a radiolucent line. Generally, 2 or 3 periapical radiographs taken from different angulations are suggested for better detection and visualization of root fractures (1-7). **Figure** 1 shows a radiolucent VRF line in oblique direction in a left maxillary 1st molar tooth with root canal treatment.

In most cases, due to projection geometry, magnification, distortion and two-dimensional nature of periapical images it is difficult to visualize the fracture and make a definitive diagnosis based on the signs and symptoms. The prolonged diagnosis and treatment process leads to various complications. The dentist should be able to consider the possibility of a vertical root fracture in the differential diagnosis based on the patient's history, main complaint, signs, and symptoms, and inform the patient about this hopeless complication. Clinical experience and training is an integral part of diagnosis as several anatomical landmarks or dental structures or restorations may be confused with VRF. Thus, these misdiagnosis issues may lead to medicolegal issues (1-7). **Figure 2** shows periodontal ligament space of a left 1st maxillary molar tooth with root canal treatment misinterpreted as VRF and referred for extraction.



Figure 1: Radiolucent VRF line in oblique direction of a left maxillary 1st molar tooth with root canal treatment. Thin radiolucent line(s) extending through any portion of tooth.



Figure 2. Periodontal ligament space of a left 1st maxillary molar tooth with root canal treatment misinterpreted as VRF and referred for extraction.

In cases where two-dimensional periapical radiographs taken from different angulations are insufficient to reveal accurate information for the diagnosis of VRF referral for cone beam computed tomography (CBCT) examination may be necessary. This may help to avoid unnecessary treatment interventions based on incorrect diagnosis, and determine the indication for extraction as soon as possible in order to prevent further bone and tooth destruction. CBCT offers submillimeter accuracy high resolution images in axial, coronal and cross-sectional multireformatted sections without superposition. Accurate detection of VRF with acceptable radiation dose may be possible by using CBCT images, however; beam hardening artifacts caused by dental restorations, pins, posts and implants may limit observer ability to diagnose VRF and reveal false positive response by mimicking fracture lines (1-9). **Figure 3** shows axial CBCT images showing radiolucent vertical root fracture lines adjacent to root canal treatment in a mandibular premolar tooth. **Figure 4** shows cross-sectional CBCT image showing radiolucent vertical root fracture line in a maxillary premolar tooth. **Figure 5** shows axial, coronal and sagittal CBCT images of a maxillary 1st molar tooth with root canal treatment. Axial CBCT image show beam hardening artfefacts caused by root canal filling materials mimicking fracture lines.

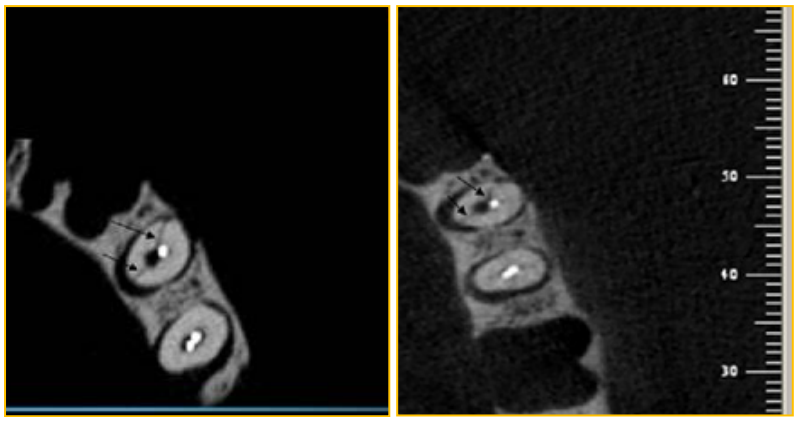


Figure 3: Axial CBCT images showing radiolucent vertical root fracture lines adjacent to root canal treatment in a mandibular premolar tooth.

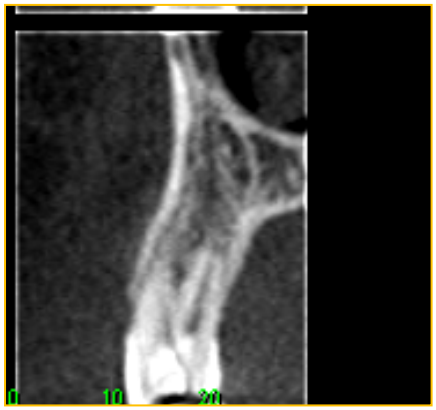


Figure 4 shows cross-sectional CBCT image showing radiolucent vertical root fracture line in a maxillary premolar tooth.

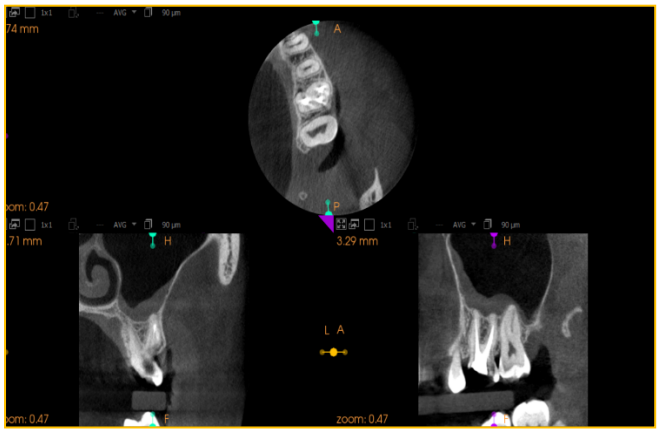


Figure 5: Axial, coronal and sagittal CBCT images of a maxillary 1st molar tooth with root canal treatment. Axial CBCT image show beam hardening artfefacts caused by root canal filling materials mimicking fracture lines. In coronal and sagittal sections mucosal thickening of maxillary sinus is visible.

Discussion and Conclusion

In studies where authors evaluated maxillary premolars and mandibular molar mesial roots with endodontic treatment, it was stated that the most common radiographic finding in teeth with VRF was 'halo' radiolucency. Researchers defined 'halo' radiolucency as "periradicular radiolucency located on the lateral surface of the root and extending periapically to the side of the root (mesial, distal, or both). Periradicular radiolucency also appears to hold an important place in other studies. Periodontal radiolucency, defined as "lateral radiolucency extending apically from the crestal bone (mesial, distal, or both) but not affecting the apical third of the root," has also been a typical finding. In some cases, lateral and periapical radiolucency have been observed together. When the boundaries of these radiolucent lesions seen in association with VRF teeth were examined, it was observed that these lesions in VRF teeth could be diffuse or well-defined, but very few had radiopaque cortical borders (1-7). Other techniques commonly utilized in routine dental practice is panoramic radiography. Although it offers wide and large view of both jaws it is not the preferred modality for detailed diagnosis of caries, resorption and fractures due to its low resolution. Ultrasonography is a relatively new technique for dental practice, however; its use is limited to superficial tissues and it is difficult to assess VRF in bone and dental structures as ultrasound waves are unable to penetrate thick hard tissues (1-7).

Recently, studies have focused on improving diagnosis in dentistry by using artificial intelligence and deep learning algorithms. Researchers have used transfer learning methodologies by leveraging leading deep learning models such as DenseNet, ConvNext, Inception121, MobileNetV2, DenseNet + Inception, DenseNet + ConvNeXt, and DenseNet + MobileNet fusion networks. The resulting findings have high strong potential to be implemented in clinical practics. DenseNet + Inception exceeded the critical threshold of 70%, achieving a significant level of sensitivity and specificity. The potential of transfer learning paradigms for VRF diagnosis is acknowledged. Furthermore, image enhancement techniques can significantly improve the accuracy of VRF diagnosis (8). The authors developed machine learning-based diagnostic models for VRF detection in endodontically treated teeth. These models demonstrated superior accuracy, especially in cases of challenging angular or J-shaped bone defects. The proposed nonlinear machine learning framework for VRF diagnosis in endodontically treated teeth was found to be reliable. The shape and location of bone defects, tooth type, age, and the quality of root canal treatment have been identified as important determinants in the diagnosis of VRF. It should be noted that mandibular molars and mandibular incisors with angular or J-shaped defects need to be carefully diagnosed. This model has also shown excellent sensitivity for teeth with angular or J-shaped defects. Therefore, it shows that the model is successful and valuable in improving the clinical decision-making process to prevent erroneous tooth extractions (9).

In the diagnosis of VRF, the clinical examination of the patient, along with the patient history, and the selection of the appropriate radiographic technique are extremely important. Clinical experience and knowing the advantages and disadvantages of the techniques to be applied will increase the probability of accurate diagnosis and prevent further tissue loss that may occur due to VRF (1-9).

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DIAGNOSTIC IMAGING AND TEMPOROMANDIBULAR JOINT ASSESSMENT

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Abstract

The temporomandibular joint (TMJ) is a complex joint containing various sections including bones, cartilage, ligaments, muscles, and a small shock-absorbing disc located between the articulating bones. Its complex structure and frequent use make it vulnerable to different disorders. TMJ-related diseases encompass a variety of medical conditions that affect the TMJ and its associated structures. These conditions can cause pain in jaw movement, dysfunction, discomfort and surrounding areas. Temporomandibular Disorder (TMD) is a broad term that contains different conditions affecting the TMJ, such as joint inflammation, disc displacement, and degenerative changes. These conditions can cause symptoms such as jaw pain, restricted jaw movement, clicking or popping sounds, and muscle stiffness. TMD is most common in female and young adults. Temporomandibular joint (TMJ) osteoarthritis is a degenerative joint disorder characterized by the deterioration of the cartilage in the jaw joint. (JIA) is a chronic inflammatory disease that can affect the jaw joint in children and adolescents. This disease can potentially impair jaw function, causing pain, inflammation, and joint deformities. Diagnosing temporomandibular joint disorders generally requires a comprehensive evaluation by healthcare professionals including dentists. The evaluation typically includes reviewing the patient's medical history, performing a physical examination, and using diagnostic imaging techniques. This presentation will discuss basic diagnostic imaging techniques in the evaluation of TMJ including Panoramic Radiography, Magnetic Resonance Imaging, Cone Beam Computed Tomography, Ultrasound Imaging and innovative techniques along with selected cases.

Key Words: Temporomandibular Joint; Diagnostic Imaging; Temporomandibular Disorders.

Introduction

The temporomandibular joint (TMJ) is a complex joint composed of various structures including bones, cartilage, ligaments, muscles, and discs. Its complex structure and constant frequent use make it susceptible to trauma and disorders. TMJ-related disorders can lead to pain, dysfunction, and discomfort in the jaw joint and surrounding areas. This includes all abnormal conditions that disrupt the normal structure or function of the TMJ. Typical TMJ-related disorders and diseases include various conditions affecting the TMJ, such as joint inflammation, disc displacement, and degenerative changes. These conditions can cause symptoms such as jaw pain, restricted jaw movement, clicking or popping sounds, and muscle stiffness (1-9). Developmental abnormalities result in deformities in the bone or soft tissue structures of the joint. Acquired abnormalities

include dysfunction of the disc, ligaments, and muscles, joint arthritis, inflammatory lesions, trauma, and neoplasms. TMJ and/or ear pain, headache, muscle tenderness, joint stiffness, joint sounds, restricted movement, locking, subluxation, joint dysfunction is more common in women. The etiology is not fully known. Clinical signs and symptoms are often temporary. Patient reassurance and education are usually sufficient. Only a few group of patients experience severe functional impairment and pain. Both jaws should always be examined and compared. In addition to clinical examination, various imaging methods are used in the evaluation of TMJ disorders (1-9).

Imaging of TMJ

Panoramic radiography remains the most widely used radiographic method for comprehensive evaluation of dental structures and adjacent anatomical regions in general dentistry practice, due to its low radiation dose, affordability, ease of acquisition, and ease of application. In many dental settings, panoramic radiographs are routinely taken before clinical examination. While diagnostic limitations such as magnification and distortion are known in two-dimensional panoramic radiographs, they can be useful in the preliminary diagnosis of TMJ changes (1-6). Panoramic radiographs provide an overview of the general appearance of both jaws and condyles. It is possible to evaluate bone structures, symmetry, severe erosion, extensive osteophyte, tumor, fracture, and dental problems with relatively lower resolution compared to intraoral images. However, panoramic radiography is unable to provide sufficient information about condyle position and function as the mandible is partially open and anterior (1-6). Moreover, due to superposition of the skull base and zygomatic arch, only significant changes in the eminence can be observed. In order make detailed assessment further techniques are needed and also TMJ programs of panoramic devices provides thick and distorted images. Therefore, further three dimensional techniques are essential in order to make accurate assessment (1-6). **Figure 1** shows condylar hyperplasia along with asymmetry detected by using panoramic radiography. **Figure 2** shows a cropped panoramic radiographic image demonstrating degenerative bony changes in left condylar region.



Figure 1. Condylar hyperplasia along with asymmetry detected by using panoramic radiography.



Figure 2. Cropped panoramic radiographic image demonstrating degenerative bony changes in left condylar region.

CBCT (Cone Beam Computed Tomography) is able to provide submillimeter accuracy volumetric multireformatted images in axial, sagittal, coronal, crossectional and parsagittal sections. It is possible to assess TMJ in every plane without superposition. Classically coronal and sagittal

planes, panoramic and 3D reformatted images are utilized. Generally, images are taken with mouth closed position, but devices with mouth open option are also available. CBCT devices give lower radiation dose than MDCT (multidetector computerized tomography) (1-6). Degenerative Joint Disease, ankylosis, neoplasm, and fracture cases can be assessed three dimensionally. Beam hardening artifacts may interfere with diagnostic ability in cases where metallic implants are within the region of interest. Soft tissue contrast is not sufficient in the detection of disc problems and soft tissue involvement. MDCT (multidetector computerized tomography) offers better soft tissue contrast than CBCT, however; it has higher radiation dose than CBCT. It is considered insufficient for the imaging of the disc. It is generally indicated in cases where neoplasm is thought to have spread beyond osseous structures (1-6). **Figure 3** shows degenerative bony changes in the temporomandibular regions in axial and coronal views of CBCT sections.

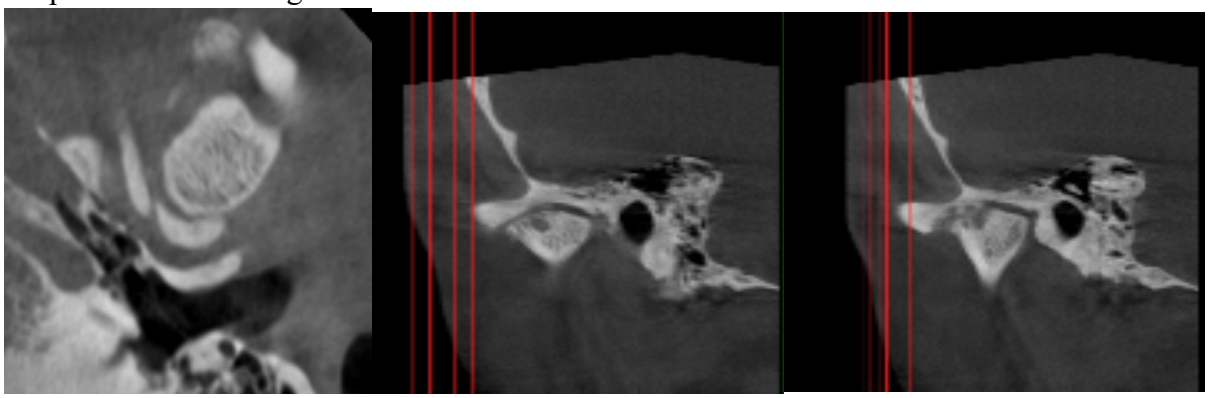


Figure 3. Degenerative bony changes in the temporomandibular regions in axial and coronal views of cropped CBCT sections.

MRI (Magnetic Resonance) imaging is the preferred and suggested gold standard modality for the evaluation of soft tissue components of TMJ. Suspected disc displacement with pain and dysfunction if no response to classical treatment is indicative of MR. There is no ionizing radiation with MR. In addition, joint effusion along with disc and joint soft tissues can be evaluated (1-6). Hard tissue assessment is not preferred with MR. Sagittal and coronal images are utilized in general assessment. T1 and Proton-Weighted (discal and osseous tissues) and T2-Weighted (inflammation and effusion) are also other preferred modes of assessment. Contraindications of the technique are pacemaker, intracranial clip, claustrophobia, and inability to remain immobile. Metal artifacts distort the image and heat may be harmful for the tissues although this issue is under discussion. However, it is beneficial to remove orthodontic bands before MR imaging (1-6). **Figure 4** shows left TMJ T2 weighted sagittal closed MR image indicative of hyper-intense joint effusion.

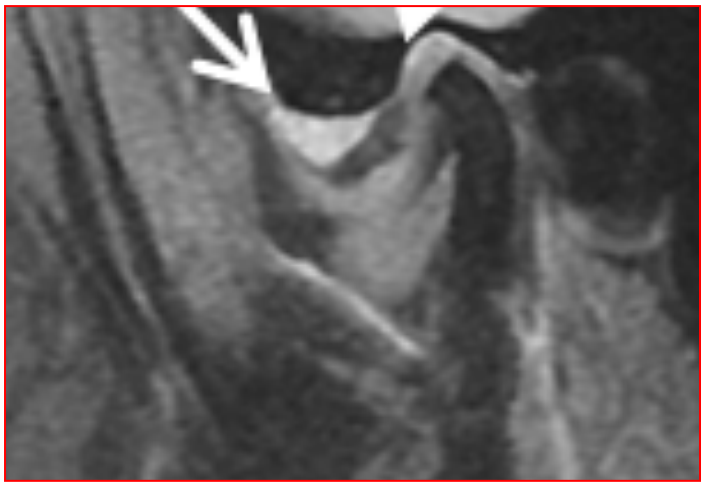


Figure 4. Left TMJ T2 weighted sagittal closed MR image showing hyper-intense joint effusion.

Ultrasonographic evaluation of TMJ was proposed by use of appropriate probes. Many studies to date have observed that ultrasound and MRI evaluations in the diagnosis of TMJ disorders are performed by medical radiologists. We believe that it would be more beneficial for oral, dental, and maxillofacial radiologists, who also have dental training, to perform ultrasound and MRI evaluations of TMJ disorders (1-4). It is thought that ultrasound can be a complementary technique to CBCT for bone structure such as degenerative changes and to MRI for soft tissue aspects such as anterior disc displacement and effusion in TMJ disorders. Due to its easy accessibility, provision of instantaneous images, lack of ionizing radiation, and low cost, ultrasonography is recommended to be used as an auxiliary imaging technique in temporomandibular joint (TMJ) examinations by dentomaxillofacial radiologists (1-4).

Discussion and Conclusion

In recent years, emphasis has been placed on studies aimed at accelerating the transition of imaging methods used in TMJ assessment to clinical practice by integrating artificial intelligence applications and machine learning into medical applications. The goal of these studies is to automatically report TMJ images obtained by different methods in a short time and to prevent differences in interpretation depending on observer performance and experience. These methods can also be used for post-treatment evaluation and follow-up. Studies aimed at diagnosing TMD from CBCT, US, and MR images using different architectures and interpreting the success of models according to images diagnosed by observers can shorten the diagnosis time and provide acceptable and high accuracy in diagnosis (7-9). It is important to encourage researchers to conduct studies on applying different deep learning-based approaches to solve the TMJ diagnosis problem. Knowing the advantages, limitations, and disadvantages of the imaging techniques used is extremely important. Clinicians should consider the characteristics of the tissue to be examined, the diagnostic goal, and the indications for the use of the technique when choosing a technique. Clinical examination and patient complaints should be evaluated together, and appropriate imaging methods should be used to reach a definitive diagnosis when necessary. The use of artificial intelligence and deep learning models, which have been implemented in recent years, has the potential to make significant contributions in terms of observer compliance, diagnosis speed, and accuracy (7-9).

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INCIDENTALLY DETECTED ASYMPTOMATIC JAW LESIONS ON ROUTINE PANORAMIC RADIOGRAPHS: A CASE SERIES OF SIX PATIENTS

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Abstract

Lesions of the jawbones presenting with radiolucent, mixed, or radiopaque appearances are often asymptomatic and may be detected incidentally during routine radiographic examinations. Due to the lack of clinical symptoms, such findings may mimic periapical pathologies and therefore require careful radiological assessment for appropriate differential diagnosis. This case series retrospectively evaluated the radiographic findings of six female patients who presented to our clinic for routine dental examination between 2024 and 2025. The patients ranged in age from 39 to 72 years (mean age: 50.3) and had no known systemic diseases. Panoramic radiographs obtained based on the patients' chief complaints revealed incidental radiolucent–radiopaque lesion-like appearances within the jawbones. Clinical examination demonstrated no associated symptoms such as swelling, redness, pain, or tenderness, and no evidence of bone expansion or cortical destruction was observed. When the clinical and radiographic findings were assessed together, the lesions were considered to be possibly associated with benign fibro-osseous processes. However, a definitive diagnosis was intentionally avoided, and regular clinical and radiological follow-up was recommended. This case series highlights the value of routine panoramic radiography in the incidental detection of asymptomatic jaw lesions and emphasizes the importance of clinical–radiological correlation in preventing misdiagnosis and unnecessary treatment.

Keywords: Panoramic radiography, Asymptomatic lesions, Benign.

RUTİN PANORAMİK RADYOGRAFİLERDE TESADÜFİ OLARAK SAPTANAN ASEMPTOMATİK ÇENE LEZYONLARI: ALTI OLGULUK BİR VAKA SERİSİ

Özet

Çene kemiklerinde izlenen radyolusent, mikst veya radyopak görünümlü lezyonlar, çoğunlukla asemptomatik seyirli olup rutin radyografik incelemeler sırasında tesadüfi olarak saptanabilmektedir. Bu tür lezyonlar, klinik bulgu vermemeleri nedeniyle periapikal patolojilerle karışabilmekte ve ayırıcı tanı açısından dikkatli değerlendirme gerektirmektedir. Bu olgu serisinde, 2024–2025 yılları arasında kliniğimize rutin diş muayenesi amacıyla başvuran, yaşları 39 ile 72 arasında değişen (ortalama 50,3), sistemik hastalığı bulunmayan altı kadın hastaya ait

radyografik bulgular retrospektif olarak değerlendirilmiştir. Hastalardan başvuru şikâyetleri doğrultusunda alınan panoramik radyografilerde, çene kemiklerinde tesadüfi olarak radyolusent–radyopak karakterde lezyon benzeri görünümler izlenmiştir. Klinik muayenede ilgili bölgelerde şişlik, kızarıklık, ağrı veya hassasiyet gibi semptomlar saptanmamış; ayrıca kemik dokuda ekspansiyon veya kortikal destrüksiyon bulguları gözlenmemiştir.Klinik ve radyografik bulgular birlikte değerlendirildiğinde, lezyonların benign seyirli fibro-osseöz süreçlerle ilişkili olabileceği düşünülmüş, ancak kesin tanıdan kaçınılarak düzenli klinik ve radyolojik takip önerilmiştir. Bu olgu serisi, rutin panoramik radyografilerin asemptomatik lezyonların saptanmasındaki rolünü ve klinik–radyolojik korelasyonun yanlış tanı ve gereksiz tedavilerin önlenmesindeki önemini vurgulamaktadır.

Anahtar kelimeler: Panoramik radyografi, Asemptomatik lezyonlar, Benign.

USE OF FLURALANER FOR ECTOPARASITIC PURPOSES IN POULTRY

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Abstract

Ectoparasites are a global problem in the poultry sector, causing significant economic losses. Licensed ectoparasitic drugs applied directly to chickens are extremely limited or nonexistent. The problem of drug residues from the applied drugs can be a significant problem. Treatment is generally carried out by spraying the poultry coops rather than directly on the poultry. While various ectoparasites exist in poultry, the poultry red mite (*Dermanyssus gallinae*) in particular can cause serious health problems. The lack of permanent ectoparasites in poultries complicates treatment. These parasites are nocturnal and, after feeding at night, leave their hosts during the day to hide in walls, poultry equipment, or the surrounding environment. This makes control extremely difficult. These parasites can survive for months without feeding on blood. In Turkey, in recent years, fluralaner (Exzolt oral solution), an oral solution effective against poultry red mites, has been licensed for use in poultry (chickens, breeders, and layers). This group of drugs was first licensed for use in pet clinics worldwide for dogs and cats, and high clinical ectoparasitic activity was observed. Fluralaner is administered to poultry at a dose of 0.5 mg/kg (PO, administered twice at 7-day intervals). If repeated treatment is necessary, a three-month interval is required. The pre-slaughter holding period is 14 days for meat and 0 (zero) days for eggs. The drug is highly effective against external poultry parasites, with activity observed within the first hours after the first application. When the drug reaches a blood-sucking ectoparasite, it affects the ectoparasite's nervous system. This review aims to provide information on the use and efficacy of fluralaner, which is licensed for ectoparasitic use in poultry in Turkey.

Keywords: Poultry, ectoparasite, fluralaner.

TAVUKLARDA EKTOPARAZİTER AMAÇLI FLURALANER KULLANIMI

Özet

Tavukçuluk sektöründe ektoparazitler global bir sorundur ve ciddi ekonomik kayıplara neden olurlar. Ektoparazitlere karşı doğrudan tavuklara uygulanan ruhsatlı ektoparaziter ilaç oldukça sınırlıdır veya bulunmamaktadır. Uygulanacak ilaç veya ilaçlardan oluşacak ilaç kalıntı sorunu önemli bir problem oluşturabilmektedir. Tedavi genellikle doğrudan tavuklar yerine kümeslerin

ilaçlanması yapılmaktadır. Tavuklarda farklı ektoparazitler olmakla birlikte, özellikle kanatlı kırmızı akarı (*Dermanyssus gallinae*) çok ciddi sağlık sorunlarına neden olabilmektedir. Kanatlı kırmızı akarlarının sürekli ektoparazit olarak tavuklarda bulunmaması tedaviyi güçleştirmektedir. Bu parazitler geceleri aktiftir ve gece kan emdikten sonra gündüzleri konaktan ayrılarak duvarlarda, kümes ekipmanlarında veya çevrede saklanırlar. Bu durum mücadeleyi oldukça güçleştirmektedir. Bu parazitler kan ile beslenmeden aylarca hayatta kalabilmektedir. Ülkemizde son yıllarda tavuklar (piliç, damızlık piliç, yumurtacı tavuk) için kanatlı kırmızı akarlarına etkili oral kullanıma uygun fluralaner (Exzolt oral çözelti) ruhsatlandırılmıştır. Bu grup ilaçlar dünyada ilk önce pet kliniğinde köpek ve kediler için kullanımı ruhsatlandırıldı ve klinik yönden yüksek ektoparaziter etkinlik gözlendiği belirlendi. Fluralaner tavuklara 0.5 mg/kg (PO, 7 gün ara ile 2 sefer) dozunda uygulanır. Tedavi tekrarı gerektiğinde üç ay ara verilmelidir. Et için kesim öncesi bekletme süresi 14 gündür ve yumurta için 0 (sıfır) gündür. İlaç kanatlı dış parazitlerine karşı yüksek derecede etki gösterir ve ilk uygulamadan sonraki ilk saatler içinde etkinlik gözlenir. İlaç kan emen ektoparazite eriştiğinde ektoparazitin sinir sistemini etkiler. Bu derlemede Türkiye'de tavuklarda ektoparaziter amaçlı satışı ruhsatlandırılan fluralanerin kullanımı ve etkinliği hakkında bilgiler verilmeye çalışılmıştır.

Anahtar kelimeler: Tavuk, ektoparazit, fluralaner.

1.Giriş

Kanatlı kırmızı akarı (*Dermanyssus gallinae*) Mesostigmata takımına ve Arachnida sınıfına ait tavuklarda yaygın gözlenen ektoparazittir. Parazitin tavukçuluk sektöründe gözlenme oranının çok yüksek oranlarda olduğu, Avrupa'da %80'nın üzerinde gözlenme oranı olduğu bildirilmiştir. Parazit global düzeyde ciddi ekonomik kayıplara neden olabilmektedir. Parazit çoğunlukla tavukların gece dinlenme esnasında tavuğa yakın saklandıkları yerlerden (çatlak, yarıklarda, kümes ekipmanları, vs) çıkarak kanlarını emerler. Kümeslerde oluşan yüksek sıcaklık ve nem bu parazit için oldukça uygun yaşam ortamı sağlayabilmektedir. Bu ortamda parazitin üreme döngüsü bir hafta içinde tamamlanabilmektedir ve bu durum çok kısa zaman içinde yüksek sayılara erişmelerini sağlayabilmektedir. Enfeste tavuklarda huzursuzluk, saldırganlık, şiddetli tüy yolma, anemi ve ölümler gözlenir. Kanatlı kırmızı akarının insanlar için zoonotik (insanlarda deri lezyonları) özellik gösterebileceği ve bazı bakteriyel patojenleri insanlara taşıyabileceği bildirilmektedir (Decru ve ark 2020).

Pet kliniğinde ektoparaziter (pire, kene, uyuz) amaçlı kullanılan izoksazolin grubu bir ektoparaziter olan fluralaner (Comas ve Armstrong 2018, Yazar 2018, Yazar 2024), Türkiye'de son yıllarda tavuklarda kanatlı kırmızı bitine karşı oral çözelti (Exzolt™ oral çözelti) şeklinde ruhsatlandırılmıştır. Üretici firma tavuklarda fluralanerin oral uygulama sonrasında yüksek oral biyoyararlanıma (>%90) sahip olduğunu, proteinlere yüksek düzeyde bağlandığını, bütün vücuda dağılım gösterdiğini ancak karaciğer, deri ve yağda birikim gösterdiğini bildirmişlerdir. İlaç esas olarak karaciğerden belirgin metabolitlerine dönüşmeden atılmaktadır. Fluralaner tavuklara oral yolla 0.5 mg/kg dozunda 7 gün ara ile 2 sefer uygulanır. Enfestasyonda tedavi tekrarı gerektiğinde ise ikinci uygulama için üç ay ara verilmesi gerekmektedir. Et için kesim öncesi bekletme süresi 14 gündür ve yumurta için 0 (sıfır) gündür. İlaç kanatlı dış parazitlerine karşı ilk uygulamadan

sonraki saatler için yüksek derecede etki gösterebilmektedir. İlaç parazitlerde sinir sistemine karşı yüksek seçiciliğe sahip, ligand kapılı klorür kanallarını inhibe ederek etki gösterir (Pavlicevic ve ark 2018, HBS-tarbil 2025, MSD 2025).

Amerika Birleşik Devletleri'nde tavuklarda fluralaner etiket dışı olarak ektoparaziter amaçlı kullanılmakta olduğu, ancak yumurtalarda oluşturduğu rezidü ile ilgili detaylı bilgiler bulunmadığı bildirilmiştir. Tavuklara damar içi 0.5 mg/kg veya transdermal olarak 58.7 mg/kg dozunda uygulandığında, yumurta sarısında yarı ömrün intravenöz için 3.7 gün ve transdermal için 14.3 gün olduğu belirlenmiştir (Enomoto ve ark 2024). Tavuklara fluralanerin tek doz intravenöz (0.5 mg/kg) veya transdermal (58.7 mg/kg) uygulanması sonrasında kusma, ishal, iştahsızlık veya deri reaksiyonları gelişmediği, damar içi ve transdermal uygulamalarda yarı ömrün sırası ile 80.5 saat ve 179.6 saat olduğu bildirilmiştir (Elliot ve ark 2024). Yumurta tavuklarında yem tüketiminin veya su sertliğinin fluralanerin farmakokinetik profilini değiştirmediği ve tavukçuluk endüstrisinde yemlemeden önce veya sonra kullanılabileceği belirlenmiştir (Sari ve ark 2022). İlacın önerilen dozlarda yan etkilere neden olmadığı bildirilmiştir (HBS-tarbil 2025). Kemirgenler çok yüksek dozlarda oral toksisite çalışmalarında tüylerde karışıklık, karaciğer, böbrek ve timüs üzerine olumsuz etkilere neden olduğu belirlenmiştir (EMA 2017).

2.Ektoparaziter Kullanımı

Akarlar ile yoğun enfekte tavuklarda fluralaner uygulaması sonrasında haftalarca akarlardan arınma gözlendiği, ilacın günlük yem alımını etkilemediği, ölüm gözlenmediği ve enfekte tavuklarda gelişen davranış bozukluklarında azalma gözlendiği bildirilmiştir (Nguyen ve ark 2021). Tavuklarda farklı dozlarda (0, 0.5, 1.5, 2.5 mg/kg) ve sürelerde fluralaner uygulamasının güvenilirliğinin incelendiği çalışmada, ciddi klinik veya patolojik yan etkiler gözlenmediği, tavuklarda fluralanerin önerilen dozun 15 katına kadar güvenlik marjına sahip olduğu ifade edilmiştir (Prohaczik ve ark 2017). Damızlık tavuk ve horozlarda fluralanerin önerilen dozun 3 katı ve önerilen sürenin 2 katı dozunda üreme performansı üzerine etkileri incelendiğinde, tedavisi süresince klinik olumsuzluk gözlenmediği, üreme performansı ve civcivlerde hayatta kalma üzerine olumsuz etkisinin bulunmadığı ifade edilmiştir (Huyghe ve ark 2017).

Tavuklarda ***kanatlı kırmızı akarına*** (*Dermanyssus gallinae*) karşı fluralanerin yüksek (0.1 ml/kg), orta (0.05 ml/kg) ve düşük (0.025 ml/kg) dozlarda etkinliği ve güvenilirliğinin incelendiği çalışmada, ilacın 0. ve 7. günlerde oral uygulama sonrasında etkili dozun bir hafta ara ile iki sefer 0.5 mg/kg (0.05 mL'ye eşdeğer) dozunda uygulanmasının önerildiği ve klinik gözlemler ve kan biyokimyasal değerlendirmeleri sonucunda bütün dozların güvenli olduğu bildirilmiştir (Sun ve ark 2025). Serbest dolaşan ve kafes tavukçuluğu yapılan iki çiftlikte kanatlı kırmızı akarına karşı fluralanerin (0.5 mg/kg, PO, 7 gün ara ile 2 sefer) uygulandığında, etkinliği her iki grupta da yaklaşık %100 olduğu, tavukların davranışlarında düzelmeler gözlendiği, stres faktörlerini azalttığı, kırmızı kan hücresi sayıları ile hematokrit değerlerinin arttığı ve sonuçta tavuklarda refah düzeyinin yükseldiği ve tedavi oldukları belirtilmiştir (Petersen ve ark 2021). Deneysel olarak D. gallinae ile enfekte tavuklar iki gruba (kontrol, enfekte) ayrılarak fluralanerin (0.5 mg/kg, PO, 7 gün arayla iki sefer) etkisi araştırılan çalışmada, ilk uygulama sonrasında saatler için parazitlerde ölümler gözlendiği, çalışmada %100'e yakın oranlarda akarlarda ölüm geliştiği, akarlarda

yumurtlama ve nimf üretiminde yüksek oranlarda düşme oluştuğu ifade edilmiştir (Brauneis ve ark 2017). Kanatlı kırmızı akarla doğal enfekte tavuk çiftliklerde fluralaner uygulamasının ilk uygulamadan sonra %95 üzerinde etkinlik sağlandığı, yumurtlama oranının arttığı ve tedavi sırasında olumsuz etkiler gözlenmediği rapor edilmiştir. Araştırma sonucunda bir hafta ara ile 2 sefer 0.5 mg/kg dozunda fluralaner uygulamasının akarla doğal enfekte tavuklarda yüksek potansiyeline sahip olduğu ifade edilmiştir (Thomas ve ark 2017). Kanatlı kırmızı akarı ile enfekte tavuklara fluralaner (0.5 mg/kg, PO, bir hafta ara ile iki sefer) uygulamasının 5. günde %90 ve 17. günde %100'e ulaşan etkinlik sağlandığı ve etkili bir tedavi yöntemi olabileceği bildirilmiştir (Raeisi ve ark 2024).

Yapılan çalışmalarda fluralanerin kanatlı kırmızı kanatlı akarı üzerine etkileri dışında başka artropodlara etkinliği de incelenmiştir. ***Kuzey tavuk akarı*** (*Ornithonyssus sylviarum*) ile enfekte yumurtacı tavuklara 0. ve 7. günlerde 0.25, 0.5 veya 1.0 mg/kg dozlarında (PO) fluralaner uygulamasının kuzey tavuk akarı istilasını doza bağlı olarak hızla kontrol etmede güvenli ve etkili olduğu ve pestisit uygulamasının yükünü ortadan kaldırma potansiyeline sahip olabileceği ifade edilmiştir (Hinkle ve ark 2018). Tavuklarda ***tahta kurularına*** (*Cimex lectularius*) karşı fluralanerin etkinliği incelendiğinde, uygulamadan sonraki ilk saatler içinde tahta kurularına karşı yüksek oranlarda etkinliği olduğu ve araştırma sonucunda fluralanerin en az 28 gün süre ile tahta kurularına karşı etkili olabileceği ifade edilmiştir (Gonzalez-Morales ve ark 2023).

Dermanyssus gallinae ile enfekte kanaryalarda selamektin (0.02 mg/kg, transdermal) ile fluralanerin (0.5 mg/kg, PO) etkinliği karşılaştırıldığında, selamektinin tedavi etkinliği %80 olarak belirlenirken, fluralanerin %90 oranında olduğu ve her iki ilacın kanaryalarda ektoparaziter amaçlı kullanılabileceği ifade edilmiştir (Esin ve ark 2022).

Bir tür ***sivrisinek*** olan *Culex quinquefasciatus,* Batı Nil virüsünü kuşlardan alarak insanlara nakletmektedir. *Culex quinquefasciatus* popülasyonlarını kontrol etmek ve insanların maruz kalma riskini azaltmak için fluralanerin etkinliği incelendiğinde parazit kontrolünde kullanılabileceği bildirilmiştir (Knape ve ark 2024). Yapılan başka bir çalışmada fluralanerin çevrede bulunan sineklere karşı etkili bir pestisit olarak kullanılabileceği belirtilmiştir (Burgess ve ark 2020). Tavuklar Chagas enfeksiyonunun (*Trypanosoma cruzi*) naklinde rol alan *Triatoma spp* türleri için önemli bir kan besin kaynağıdır. Yapılan çalışmada tavuklara uygulanan fluralanerin Chagas enfeksiyonunu nakleden etkenlere karşı insektisit etkinliği incelendiğinde, tavuklara fluralaner uygulanmasının, uygulamadan sonraki 28 güne kadar etkenlere karşı etkili olduğu ve endemik bölgelerde Chagas hastalığının kontrolünde düşünülebileceği rapor edilmiştir (Pereira ve ark 2024).

3.Sonuç ve Öneriler

İzoksazolin grubu (afoksolaner, esafoksolaner, fluralaner, sarolaner) ektoparaziterler pet kliniğinde oldukça etkili ve güvenli bir antiparaziter ilaç grubudur. Etkisini parazitlerde klor kanallarını etkileyerek sinir sistemini üzerine etki ederek gösterir. Tavuklarda kanatlı kırmızı akarı ciddi sağlık ve üretim problemlerine neden olmaktadır ve tedavisi oldukça zor ve masraflıdır. Son yıllarda kanatlı kırmızı akarı tedavisinde tavuklarda izoksazolin grubu fluralaner kullanımı

onaylanmıştır. İlacın önerilen dozlarda oldukça etkili ve güvenli olduğu anlaşılmaktadır. Tavuklarda kanatlı kırmızı akarı dışında diğer ektoparazitlere de etkili olma potansiyeli bulunmaktadır. Tavuklar dışında diğer kanatlılarda, özellikle de egzotik kuşlarda da kullanım alanı bulabileceği ve pestisit amaçlı kullanılabileceği anlaşılmaktadır. Ancak yumurtacı tavuklarda yumurtada kalıntı süresi sıfır gün olarak belirlenmekle birlikte, yeni çalışmalara ihtiyaç duyulabilir.

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ANTICOCCIDIAL AND ANTIBACTERIAL USE IN CHICKENS

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Abstract

In the poultry sector, due to the large number of animals being crowded together, an infection can cause severe economic losses. The short lifespan of the animals and/or the daily egg collection necessitates restrictions on the use of many medications. Despite strict management and vaccinations, infections caused by protozoa, viruses, and bacteria can still occur in chickens. Viral infections can be prevented through a controlled and planned vaccination program. Among protozoan infections, coccidiosis caused by *Eimeria* spp. is the most common. Many bacterial infections can also develop. This report aims to provide information on coccidiosis and bacterial infections observed in chickens, as well as their treatment.

Keywords: Chicken, coccidiosis, antibiotics.

TAVUKLARDA ANTİKOKSİDİYAL VE ANTİBAKTERİYEL KULLANIMI

Özet

Kanatlı sektöründe, hayvanların çok yüksek sayılarda bir arada bulunması nedeni ile gelişebilecek bir enfeksiyon ağır ekonomik kayıplara neden olabilmektedir. Hayvanların yaşam sürelerinin kısa olması ve/veya her gün yumurta alınması ise birçok ilaç için kullanım kısıtlaması gerekmektedir. Uygulanan sıkı yönetim ve aşılamalara rağmen, tavuklarda protozoon, virüs ve bakteri kaynaklı enfeksiyonlar gözlenebilmektedir. Viral enfeksiyonlar kontrollü ve planlı bir aşılama programı kullanılarak önlenebilmektedir. Protozoon enfeksiyonlarından ise en fazla *Eimeria* spp. kaynaklı koksidiyoz gözlenebilmektedir. Ayrıca birçok bakteriyel kaynaklı enfeksiyon gelişebilmektedir. Bu bildiride tavuklarda gözlenen koksidiyoz ve bakteriyel enfeksiyonlar ile tedavileri ile ilgili bilgiler verilmeye çalışılmıştır.

Anahtar kelimeler: Tavuk, koksidiyoz, antibiyotik.

1.Koksidiyoz

Tavuklarda koksidiyoz (Coccidiosis, Eimeriosis) en önemli protozoon enfeksiyonlarından biridir. Etkenler *Eimeridae* ailesine bağlı *Eimeria* spp. türleridir. Etkenler zorunlu hücre içi parazitlerdir. Etkenler arasında *E. tenella*, *E. necatrix*, *E. acervulina*, *E. brunetti*, *E. maxima*, *E. mitis* ve *E. praecox* yer almakta olup, bunlar arasında *E. tenella* ile *E. necatrix* en patojen türler olarak bilinmektedir. Etkenler konak tavukların bağırsak epitel hücrelerinde birkaç aseksüel (merozoit) çoğalma döngüsünün ardından ookistlerin oluşumu ile yaşam döngülerini tamamlarlar. Enfeksiyon subklinik ve klinik olarak gözlenebilir. Hasta tavuklarda yemden yararlanmada düşüş, malabsorpsiyon, kilo alımında azalma, kanlı dışkı, kabarık tüyler, ölümler ve sekonder enfeksiyonlara yatkınlık gözlenir (Abebe ve Gugsa 2018, Altınsoy ve Gökpınar 2025). Tanı tavuklarda lezyonların karakteristik görünümü ve yerleşim bölgelerinden alınan mukozal örneklerden çok sayıda parazitin mikroskobik tespiti ile kolayca yapılabilmektedir. Civcivlerde ishal, kabarık tüyler, kümelenme ve ölümler gözlendiğinde koksidiyozdan şüphelenilebilir. Ancak, kesin tanı duodenum, jejunum, ileum ve sekum örneklerinin mikroskobik incelenmesi ile konur (Mathis ve ark 2025). Etkenler yaşam döngüleri boyunca üç üreme aşamasından geçerler; eşeysiz (aseksüel, şizogoni), eşeyli (gametogoni, seksüel) ve sporlanma (sporogoni) evreleri. Bu aşamalardan ilk ikisi konakçı organizmada gerçekleşirken, sporlanma evresi doğada meydana gelir. Doğada sporlanmış ookistlerin konakçı tarafından alınmasıyla enfeksiyon başlar. Konakçı tarafından sporlanmış ookistler sindirim kanalında sporozoitlere dönüşür. Bu sporozoitler bağırsak epitel hücrelerine girerek trofozitleri oluşturur. Trofozoitler eşeysiz olarak çoğalarak (sizogoni) çok sayıda çekirdek oluşturur ve bu aşamada parazitler birinci nesil şizont olarak adlandırılır. Kısa sürede çekirdeklerin etrafında protoplazma oluşturarak birinci nesil merozoitlerin gelişimini sağlar. Bağırsak epitel hücrelerinin parçalanmasıyla bu merozoitler serbest kalır. Serbest kalan merozoitler tekrar bağırsak epitel hücrelerine girerek ikinci nesil şizontları, bu şizontlarda ikinci nesil merozoitleri oluşturur. Bazı *Eimeria* spp. türlerinde benzer şekilde üçüncü nesil şizontların oluşumu da gözlenir. Bu aşamadan sonra parazitler bağırsak epitel hücreleri içinde eşeyli üreme evresine geçer ve dişi (makrogamet) ile erkek (mikrogamet) hücrelerini oluşturur. Mikrogametin makrogamete girmesi ile zigot meydana gelir ve bu yapı ookist adını alır. Ookistler bağırsak epitel hücrelerinin parçalanmasıyla dışkı ile dış ortama atılır ve uygun çevresel koşullarda sporlanarak enfektif hale gelir, böylece yaşam döngüsü yeniden başlar (Kaya ve Pirinççi 2002). Koksidiyoz patojenitesinde sekal mikrofloradaki *E. coli, Lactobacillus spp., Mucor* spp., *Streprococcus faecalis, Bacteriodes* spp., *Clostridium perfringens* ve *Candida* spp. gibi diğer mikroorganizmalarda katlı sağlar (Yurdakök Dikmen ve ark 2017). Önceki yıllarda profilaksi amaçlı ilaç içeren yemlerle beslenme yapılabilmekteydi. Ancak rezistans gelişim sorunları nedeni ile uygulamadan kaldırılmıştır (Mathis ve ark 2025) ve Türkiye'de antiprotozoon katkılı yem satışı yapılmamaktadır.

1.2.Antikoksidiyal Tedavi

Tedavide direnç oluşumunu engellemek için mekik veya rotasyon (döndürme) programları uygulanmalıdır. Mekik programında farklı etki mekanizmalarına ait ilaçlar parazitin genç olduğu dönemde birlikte uygulanırken, rotasyon programında mevsimsel (yetiştirme dönemleri) olarak birbiri ardına kullanılarak tedavi yapılır (Yurdakök Dikmen ve ark 2017). Türkiye'de özellikle damızlıklarda koksidiyozun oluşumunu engellemek için satışı ruhsatlı aşılar (*Evalon oral, spray süsp, Evanovo enj, Evant oral süsp, Hipracox oral, spray süsp, Hipracox oral, spray süsp,*

Immucox for Chickens II oral süsp, Livacox içme suyu, oral süsp, Livacox Q içme suyu, oral süsp, Paracox 5 oral süspansiyon Paracox 8 içme suyu, oral, spray süsp) da bulunmaktadır (HBS-tarbil 2025a).

Sülfonamidler 1950'lerde ruhsatlandırılmıştır (Peek ve Landman 2011) ve etkili olduğu mikroorganizmalarda folik asit sentezini engelleyerek etki gösterir. Koksidiyoz etkenleri yanında sindirim sisteminde gram negatif bakterilere de etki gösterirler. Oksitetrasiklinle kombine preparatın, antibakteriyel etkinliği belirgindir (Yazar 2024). Koksidiyoz tedavisinde çok fazla kullanılan sülfonamidler ikinci nesil şizontlar ve merozoitlere etki gösterir (Kaya ve Pirinççi 2002). Günümüzde tavuklarda koksidiyoz tedavisinde sülfonamidler [sülfakilozin, sülfakuinoksalin, sülfadimidin (sülfametazin)], ambroksol ve toltrazuril kullanımı ruhsatlandırılmıştır. Sülfadimidin (sülfametazin)'in oksitetrasiklinle, amprolyumun ise vitamin K3 ile birlikte preparatları bulunmaktadır (HBS-tarbil 2025b). Amprolyum ikinci nesil şizontlarda, tiamin (vitamin B1) alımını engelleyerek etki gösterir (Yurdakök Dikmen ve ark 2017). Amprolyum 1960'lardan günümüze kullanılan antikoksidiyal ilaçlatır. Uzun yıllardır kullanılması, direnç sorunlarının görülmesine neden olmaktadır. Bazı ülkelerde sülfanamidlerle kombine preparatlarının satışı yapılmaktadır (Chapman ve Rathinam 2022). Türkiye'de amprolyumun tek başına veya vitamin K3 ile birlikte preparatı bulunmaktadır. Vitamin K3 ilavesi ise koksidiyozun neden olduğu kanamalara karşı etkili olurken, amprolyumun tiamin üzerinden oluşturabileceği olası yan etkilerini engeller (HBS-tarbil 2025b). Benzenasetonitril grubu antikoksidiyal ilaç olan toltrazuril, parazitlerde solunum zinciri ile primidin sentezinde görevli bazı enzimleri engelleyerek etki gösterir (Canbar ve Yazar 2024). Toltrazuril, tavuklarda tüm önemli *Eimeria* spp. türlerinin tüm hücre içi evrelerine (şizogoni ve gametogoni) karşı etkilidir (Peek ve Landman 2011). *E. tenella* ile şiddetli koksidiyozlu doğal enfekte broyler tavuklara 7 mg/kg dozunda içme suyu ile toltrazuril kullanımının ookist atılımını önemli düzeyde azalttığı (>99%) ve klinik olarak iyileşmelerine katkıda bulunduğu bildirilmiştir. Araştırmada tek doz toltrazuril uygulamasının etkili olduğu tespit edilse de 5 gün sonra ikinci uygulamanın yararlı olabileceği ifade edilmiştir (Uslu ve Ceylan 2020). Halofuginonun koksidiyoz etkenlerine nasıl etkidiği bilinmemekle (Peek ve Landman 2011) birlikte, çoğu *Eimeria* spp. türünün eşeysiz evrelerine karşı etkilidir. Hem koksidiyostatik hem de koksidiyosidal etkileri vardır, ancak *Eimeria* spp. türlerinin uzun süreli maruziyetten sonra direnç geliştirebildiği belirlenmiştir (Gerhold ve Abuelo 2024).

3.Antibakteriyel Tedavi

Bu bölümde tavuklarda en fazla gözlenen bakteriyel enfeksiyonlar ve tedavileri ile ilgili bilgiler verilmeye çalışıldı.

Uzun yıllar antibiyotikli yemler profilaksi amaçlı kullanılmışken, günümüzde bunların hemen hemen tamamının kullanımı direnç gelişimi ve rezidü sorunları nedeni ile yasaklanmıştır. Türkiye'de bir aminoglikozit olan paromomisin dışında antibiyotikli yem ruhsatlandırılmamıştır (HBS-tarbil 2025b). Kanatlı hekimliğinde antibiyotik kullanımı bölgelere göre farklılık göstermekle birlikte florokinolonlar, tetrasiklinler ve sülfonamidlerin en fazla kullanılan ilaçlar olduğu düşünülmektedir (Mohamed ve ark 2021, Kariuki ve ark 2023).

Tavuklarda salmonelloz, kolera, mikoplazmoz ve kolibasilloz en ciddi enfeksiyonlar olarak tanımlanır.

Salmonelloz (*Salmonella* spp.) tavuklarda en fazla gözlenen enfeksiyondur. Gençler pullorum hastalığına, yetişkinler ise tifoya duyarlıdır (Serbessa ve ark 2023). Genellikle bulaşıcı veya eş zamanlı immünosüpresif bir hastalık olmadığı sürece tavuklarda klinik hastalığa neden olmamaktadır (AVA 2025). Tedavide sülfonamid + trimetoprim kombinasyonları [sülfametoksazol + trimetoprim, sülfaklorpridazin + trimetoprim, sülfadimetoksin + trimetoprim, sülfadiazin + trimetoprim), amoksisilin + kolistin, aminoglikozitler (paromomisin, apramisin, neomisin), amfenikoller (florfenikol, tiamfenikol) veya florokinolonlar (flumekuin, enrofloksasin, danofloksasin, sarafloksasin] kullanılabilir (Yazar 2018, Yazar 2024, HBS-tarbil 2025b).

Kolera etkeni olarak *Pasteurella multocida* tanımlanır. Tavuklarda septisemiye neden olur. Yetişkin tavuklar gençlere göre daha duyarlıdır. Hastalarda hırıltılı solunum, öksürük, burun akıntısı (Serbessa ve ark 2023), ateş, ağızdan mukus akıntısı, ishal ve ani ölümler gözlenir. Otopside hiperemi, peteşi ve ekimotik kanamalar, karaciğerde çok sayıda küçük nekrotik noktalar gözlenir (AVA 2025). Tedavide amoksisilin + kolistin, linkomisin, tetrasiklinler [tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin, doksisiklin + bromheksin, oksitetrasiklin + sülfadimidin (sülfametazin), neomisin + oksitetrasiklin, oksitetrasiklin + sülfadimetoksin] veya sülfonamid + trimetoprim kombinasyonları [sülfametoksazol + trimetoprim, sülfaklorpridazin + trimetoprim, sülfadimetoksin + trimetoprim, sülfadiazin + trimetoprim, oksitetrasiklin + sülfadimidin (sülfametazin), oksitetrasiklin + sülfadimetoksin, neomisin + sülfadiazin + trimetoprim] kullanılabilir (Filazi ve ark 2017, Yazar 2024, HBS-tarbil 2025b).

Tavuklarda *Mycoplasma* spp. kaynaklı mikoplazmal enfeksiyonlar [Kronik solunum sistemi enfeksiyonları, Chronic respiratory disease (CRD), *Mycoplasma spp*] sık gözlenen solunum sistemi enfeksiyonlarındandır. Özellikle *E. coli* ile birleştiğinde daha ağır hastalığa neden olmaktadır. En önemli bulaşma yolu yumurtadır. Tavuklarda *Mycoplasma synoviae* ile *Mycoplasma gallisepticum* en patojen türlerdir. Hastalarda kornea ve konjonktival tahriş, yüzde ödem, gözde akıntı, öksürük, solunum yetmezliği, yumurta veriminde azalma ve kalitesinde bozulma, gaganın hafifçe açılması ve iştahsızlık en yaygın belirtilerdir (Serbessa ve ark 2023). Tedavide florokinolonlar (flumekuin, enrofloksasin, danofloksasin, sarafloksasin), linkozamidler (linkomisin), makrolidler (eritromisin, tilmikosin, tilozin, tilvalosin), amfenikoller (florfenikol, tiamfenikol) veya tetrasiklinler [tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin, doksisiklin + bromheksin, oksitetrasiklin + sülfadimidin (sülfametazin), neomisin + oksitetrasiklin, oksitetrasiklin + sülfadimetoksin] kullanılabilir (Yazar 2018, Yazar 2024, HBS-tarbil 2025b).

Kolibasilloz, Enterobacteriaceae ailesinden *Escherichia coli*'nin (APEC) neden olduğu enterit ile karakterize bir hastalıktır. *E. coli*, kümes hayvanları dahil bütün sıcakkanlı hayvanların normal mikroflorasında bulunur. *E. coli* suşları, gastrointestinal sistemde bulunmalarına rağmen genelde patojenik özellik göstermez. Ancak immünite baskılandığında enfeksiyona neden olurlar. Kanatlılarda *E. coli* ile ilişkili olarak yumurta kesesi enfeksiyonu, omfalit, solunum yolu enfeksiyonu, septisemi, poliserozit, enterit, selülit ve salpenjit gözlenir (Serbessa ve ark 2023). Tedavide florokinolonlar (flumekuin, enrofloksasin, danofloksasin, sarafloksasin), penisilinler

(amoksisilin, ampisilin, amoksisilin + kolistin), sülfonamid + trimetoprim kombinasyonları [sülfametoksazol + trimetoprim, sülfaklorpridazin + trimetoprim, sülfadimetoksin + trimetoprim, sülfadiazin + trimetoprim, oksitetrasiklin + sülfadimidin (sülfametazin), oksitetrasiklin + sülfadimetoksin, neomisin + sülfadiazin + trimetoprim], aminoglikozidler [paromomisin, apramisin**,** neomisin, neomisin + oksitetrasiklin, bizmut subkarbonat + neomisin**,** neomisin + sülfadiazin + trimetoprim] veya kolistin kullanılabilir (Filazi ve ark 2017, Yazar 2024, HBS-tarbil 2025b).

Tavukların sindirim sisteminde bakteriyel enfeksiyonlar sıklıkla gözlenir. Taşlıklarında klostridial enfeksiyon (*Clostridium perfringens),* ince ve kalın bağırsaklarında nekrotik enterit *(Clostridium perfringens)* ile spiroketoz (*Brachyspira* spp.), benekli karaciğer hastalığı (*Campylobacter hepaticus*), salmonelloz (*Salmonella* spp.), kolera (*Pasteurella multocida*), kolibasilloz (*Escherichia coli*), kolangiohepatit (*Clostridium perfringens*) ve stafilokokal (*Staphylococcus* spp.) enfeksiyonlar gözlenebilmektedir. Nekrotik enterit sıklıkla koksidiyoz ile birlikte gözlendiği için koksidiyoz kontrolü, tedavi kadar önemlidir (AVA 2025). Nekrotik enterit ve kolangiohepatit tedavisinde birinci seçenek olarak penisilinler (fenoksimetilpenisilin, amoksisilin, ampisilin, amoksisilin + kolistin), ikinci seçenek olarak tetrasiklinler (tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin, neomisin + oksitetrasiklin kombinasyonu), tilozin veya linkozamidler (linkomisin, linkomisin + spektinomisin, linkomisin + neomisin) kullanılabilir. Koksidiyoz ile birlikte tedavi düşünüldüğünde oksitetrasiklin + sülfadimidin (sülfametazin) veya oksitetrasiklin + sülfadimetoksin kombinasyonu ilaçlar kullanılabilir (Filazi ve ark 2017, HBS-tarbil 2025b). Tavuklarda intestinal spiroketoz enfeksiyonu kronik seyreder. Lekeli menfezler ve gübre lekeli yumurtalar gözlenir. Kronik seyirli olduğu için genelde etlik piliç sürülerinde gözlenmez (AVA 2025). Tedavide tetrasiklinler [tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin, oksitetrasiklin + sülfadimidin (sülfametazin), neomisin + oksitetrasiklin, oksitetrasiklin + sülfadimetoksin] veya linkozamidler [linkomisin, linkomisin + spektinomisin veya linkomisin + neomisin] içeren ilaçlar kullanılabilir (Filazi ve ark 2017, Yazar 2024, AVA 2025). Benekli karaciğer hastalığı uzun süre yerde beslenen yumurtacı tavuklar ve damızlık sürülerde gözlenir. Kafes tavukçuluğunda ve etlik broylerler genelde gözlenmez. Sıklıkla tedaviye cevap alınamamaktadır. Tedavide tetrasiklinler (tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin) veya linkomisin kullanılabilir (AVA 2025). Stafilokokal enfeksiyonların tedavisinde ise florokinolonlar (enrofloksasin, danofloksasin, sarafloksasin) veya amfenikoller (florfenikol, tiamfenikol) kullanılabilir (Yazar 2018, Yazar 2024).

Tavuklarda solunum sisteminde bakteriyel enfeksiyon olarak konjunktivit [Chlamydiosis (*Chlamydia psittaci*), *Mycoplasma gallisepticum*], sinüzit/rinit [Chlamydiosis (*Chlamydia psittaci), Mycoplasma gallisepticum*, enfeksiyöz koriza (*Avibacterium paragallinarum*), kolera (*Pasteurella multocida*), *Ornithobacterium rhinotracheale, Riemerella anatipestifer*], trakheit [*Mycoplasma gallisepticum, E. coli, Bordetella avium, Ornithobacterium rhinotracheale*, kolera (*Pasteurella multocida*)], pnömoni [*E. coli, Ornithobacterium rhinotracheale*, kolera (*Pasteurella multocida*)] veya hava keselerinin yangısı [*Mycoplasma spp, E. coli, Bordetella avium, Ornithobacterium rhinotracheale*, kolera (*Pasteurella multocida*), klamidiyoz (*Chlamydia psittaci*) ve enfeksiyöz serozit (*Riemerella anatipestifer*)] gözlenir (AVA 2025). Solunum sistemi enfeksiyonları tedavisinde florokinolonlar (flumekuin, enrofloksasin, danofloksasin,

sarafloksasin), linkozamidler (linkomisin), makrolidler (eritromisin, tilmikosin, tilozin, tilvalosin), amfenikoller (florfenikol, tiamfenikol) veya tetrasiklinler [tetrasiklin, oksitetrasiklin, doksisiklin, klortetrasiklin, doksisiklin + bromheksin, oksitetrasiklin + sülfadimidin (sülfametazin), neomisin + oksitetrasiklin, oksitetrasiklin + sülfadimetoksin] kullanılabilir (Yazar 2018, Yazar 2024, HBS-tarbil 2025b).

4.Sonuç ve Öneriler

Antibakteriyel ve antikoksidiyal tedavide, özellikle endüstriyel düzeyde veya sürü tarzında tavuk yetiştiriciliğinde, diğer hayvanlarda olduğu gibi hijyen, optimum barınma şartları ve aşılamaya çok dikkat edilmelidir. Ayrıca kısa besleme süresi ve günlük yumurta alımı birçok ilaç için kullanımda sınırlanmaya neden olmaktadır. Ayrıca antibiyotiklerin fungal ve viral patojenlere etkisi bulunmadığı unutulmamalıdır. İlaç kullanımında et ve yumurtadaki olabilecek kalıntı problemleri nedeniyle ilaç kalıntı arınma süreleri dikkate alınmalıdır. Koksidiyoz tedavisinde tavsiye edilen dozlardaki ilaç uygulaması birikimi engellemek ve doğal bağışıklığı uyarmak için devamlı (3-5 gün) veya aralıklı (3 gün ilaçlı, 2 gün boş, 3 gün ilaçlı) şeklinde de ilaç kullanımı tercih edilebilir. Antibakteriyel tedavide antibiyogram sonuçlarının dikkate alınması tedavi süresini kısaltacak ve başarı ihtimalini yükseltecektir.

5.Tavuklar İçin Ruhsatlı Antibiyotikler ve Antiprotozoon İlaçlar

Bu bölümde tavuklar kullanımı ilgili bakanlıkça ruhsatlanan (kullanımına izin verilen) etken maddeler ve ticari ürünler alfabetik olarak listelenmiştir (HBS-tarbil 2025b).

Amoksisilin trihidrat içeren ilaçlar: Amoksil oral çözelti, Amoksivet %80 oral çözelti, Amoksivet oral süspansiyon tozu, Aremoks %80 oral çözelti, Clamoxyl oral çözelti, Delamox %80 oral çözelti, Medicamox oral çözelti, Moksisem oral çözelti, Octacillin oral çözelti, Pomoxyl oral çözelti, Poultrymox oral çözelti, Teknomax oral çözelti, Vetamoks oral çözelti, Vetamoks %50 oral çözelti, Vilamoks 80 oral çözelti, Vimisin-K %50 oral çözelti, Vimisin-K %80 oral çözelti
Amoksisilin trihidrat + **kolistin** sülfat içeren ilaç: Colmoksin oral çözelti
Ampisilin trihidrat içeren ilaç: Cefalu oral çözelti
Amprolyum hidroklorür -/+ Vitamin K3 içeren ilaçlar: Amproline oral çözelti, Ampromis K oral çözelti, Ampronet oral çözelti, Amprosem oral çözelti, Amprosid oral çözelti, Amprovid oral çözelti, Amprovil oral çözelti, Aremprol %20 oral çözelti, Forzavet oral çözelti
Apramisin sülfat içeren ilaç: Apravet oral çözelti
Bizmut subkarbonat + **neomisin** sülfat içeren ilaç: Cesamolin oral süspansiyon granül
Danofloksasin içeren ilaç: Danomed oral çözelti
Doksisiklin hiklat içeren ilaçlar: Aredoks %10 oral çözelti, Aredoks %50 oral çözelti, Avidox 20 oral çözelti, Bavedox %10 oral çözelti, Bavedox %50 oral çözelti, Devdoks %20 oral çözelti, Devdoks %50 oral çözelti, Dokset oral çözelti, Doksimis oral çözelti, Dokset WS oral çözelti, Doksinova 50 oral çözelti, Doksisym %50 oral çözelti, Doksivil oral çözelti, Doksimis 50 oral çözelti, Doksisem oral çözelti, Doksisem %75 oral çözelti, Doksol %10 oral çözelti, Doxycure %10 oral çözelti, Doxycure %75 oral çözelti, Doxymix %20 oral çözelti, Hektadoks 20 oral çözelti, Hektadoks 50 oral çözelti, Hektadoks 75 oral çözelti, Hydrodoxx oral çözelti, Levadoks

%75 oral çözelti, Levadoks %20 oral çözelti, Medox oral çözelti, Medox %20 oral çözelti, Menadoks oral çözelti, Peradoks oral çözelti, Peradoks %25 oral çözelti, Pollodoxin oral çözelti, Respiradox %20 oral çözelti, Respiradox %50 oral çözelti, Respiradox %75 oral çözelti, Respiradox oral çözelti, Sandox oral çözelti, Simdox LQD 20 oral çözelti, VMD-Doxy oral çözelti, Weldox %10 oral çözelti

Doksisiklin hiklat + **bromheksin** hidroklörür içeren ilaçlar: Albadoks %10 oral çözelti, Broxyzol oral çözelti, Dfv-Bromodox 10 oral çözelti

Enrofloksasin içeren ilaçlar: Albafloks %10 oral çözelti, Arefloks %20 oral çözelti, Aviflox 20 oral çözelti, Enflox %10 oral çözelti, Enofilin %10 oral çözelti, Enro Liquid 20 oral çözelti, Enro WSP 80 oral çözelti, Enrocid %20 oral çözelti, Enrocure %10 oral çözelti, Enrolen %10 oral çözelti, Enrolen %20 oral çözelti, Enromis oral çözelti, Enrosym %10 oral çözelti, Enrosym %20 oral çözelti, Enrosym %80 oral çözelti, Enroxlacin oral çözelti, Floksin %10 oral çözelti, Floksisem oral çözelti, Hektaflox %20 oral çözelti, Killoxacin %20 oral çözelti, Killoxacin %80 oral çözelti, Kinoloks oral çözelti, Mediquinol %10 oral çözelti, Mediquinol %20 oral çözelti, Megatril oral çözelti, Menafloks oral çözelti, Roxanova oral çözelti, Vetril %20 oral çözelti, Vetril %10 oral çözelti, Vienrocin %10 oral çözelti, Vienrocin %20 oral çözelti, Vil-Floks oral çözelti, Vilfloks %20 oral çözelti, Vienrocin %80 oral çözelti

Eritromisin içeren ilaçlar: Epimycin oral çözelti, Bavermisin oral çözelti, Eritrom oral çözelti, Eritrotek oral çözelti, Erizol oral çözelti, Erovil oral çözelti, Ertruth %35 oral çözelti, Setrim oral çözelti

Fenoksimetilpenisilin içeren ilaçlar: Simpen oral çözelti, Vipen %80 oral çözelti

Florfenikol içeren ilaçlar: Amphen oral süspansiyon, Areflor %30 oral çözelti, Avifenikol %30 oral çözelti, Aviflor oral çözelti, Bio-Phenicol oral çözelti, Fenerol %30 oral çözelti, Floral %30 oral çözelti, Florkin %30 oral çözelti, Flormis %30 oral çözelti, Florsym %30 oral çözelti, İeflor %30 oral çözelti, Mediflor %30 oral çözelti, Poulfenicol %10 oral çözelti, Poulfenicol %30 oral süspansiyon, Simflor LQD 30 oral çözelti, Vimflor %30 K oral çözelti

Flumekuin içeren ilaç: Mediflum oral çözelti

Klortetrasiklin içeren ilaçlar: Areklor %60 oral çözelti, Avichlor oral çözelti, Terranet 90 oral çözelti, Tetraklor oral çözelti, Tetramar oral çözelti

Kolistin sülfat içeren ilaçlar: Colenteric oral çözelti, Colimis %15 oral çözelti, Colimis %24 oral çözelti, Colium oral çözelti, Colomisin oral çözelti, Enterecol oral çözelti, Kolimin %30 oral çözelti, Kolisym %24 oral çözelti, Lavicol %24 oral çözelti, Lavicol %48 oral çözelti, Medicol oral çözelti

Linkomisin hidroklorür içeren ilaçlar: Arelink %40 oral çözelti, Avilinc oral çözelti, Licosim 46 oral çözelti, Linar oral çözelti, Lincopolt oral çözelti, Lincoral oral çözelti, Linkomis 40 oral çözelti, Medicalin oral çözelti, Necrocid %80 oral çözelti

Linkomisin hidroklorür + **neomisin** sülfat içeren ilaçlar: Lineosem oral çözelti, Necrocid oral çözelti, Necrolin-N oral çözelti, Neo-Lincova oral çözelti, Neolinoral çözelti

Linkomisin hidroklorür + **spektinomisin** dihidroklorür pentahidrat içeren ilaçlar: Medlinspect oral çözelti, Vespeklin enjeksiyon, Linkomin enjeksiyon, Spectilin-Taç enjeksiyon, Avilinc-SPT oral çözelti, Ekolinko enjeksiyon, Hektaspeck enjeksiyon, Huvelin enjeksiyon, Lin-Spek oral çözelti, Linkosym oral çözelti, Linkosym enjeksiyon, Linpectan enjeksiyon

Neomisin sülfat içeren ilaçlar: Aremisin %50 oral çözelti, Neojet oral çözelti, Neomar oral çözelti, Neomivet oral çözelti, Neosil oral çözelti, Neosym %50 oral çözelti, Neozid oral çözelti, Novoloks oral çözelti, NS-Med oral çözelti
Neomisin sülfat + **oksitetrasiklin** hidroklorür içeren ilaçlar: Dianalix oral çözelti, Furavet oral çözelti, Neo-Clinasin oral çözelti, Neo-Terramycin oral çözelti, Neo-Tm Vet oral çözelti, Neocure oral çözelti, Neoksitay oral çözelti
Neomisin sülfat + **sülfadiazin** sodyum + **trimetoprim** içeren ilaçlar: Neosülfaprim oral çözelti, Neoprim oral süspansiyon, Trimisin oral çözelti
Oksitetrasiklin hidroklorür içeren ilaçlar: Areksitet %50 oral çözelti, Bio-Otc %80 oral çözelti, Geosol %80 oral çözelti, Geosol oral çözelti, Oksimis oral çözelti, Oksipol %80 oral çözelti, Oksimed oral çözelti, Oxtra LA enjeksiyon, Terracid %90 oral çözelti, Tetrasym %80 oral çözelti, Texal oral çözelti
Oksitetrasiklin hidroklorür + **sülfadimetoksin** sodyum içeren ilaç: Sulfa-Terra oral çözelti
Oksitetrasiklin hidroklorür + **sülfadimidin (sülfametazin)** sodyum ilaç: Straxol oral çözelti
Paromomisin sülfat içeren ilaç: Paromomicina Huvepharma oral (yem-ilaçlı premiks) granül
Sarafloksasin hidroklorür içeren ilaç: Sarasim oral çözelti
Sülfadiazin + **trimetoprim** içeren ilaçlar: Avitrimazin oral süspansiyon, Trimetova oral süspansiyon
Sülfadimetoksin + **trimetoprim** içeren ilaç: Sulfacid oral çözelti
Sülfadimidin (**sülfametazin**) sodyum içeren ilaçlar: Ceva Sulphamezathine oral çözelti, Teknomezathine %16 oral çözelti
Sülfaklorpridazin sodyum + **trimetoprim** içeren ilaçlar: Medsuti oral çözelti, Primin oral çözelti, Sulfaklor %75 oral çözelti, Bioksal oral çözelti, Bioksal %24 oral çözelti
Sülfakilozin içeren ilaçlar: Coxisem %60 oral çözelti, Fullcox %60 oral çözelti, Coxason Sb-6 oral çözelti, Sulfavim oral çözelti
Sülfakuinoksalin içeren ilaçlar: Sulfavim oral çözelti, Coxidin oral çözelti, Vetakoksin oral çözelti
Sülfametoksazol + **trimetoprim** içeren ilaçlar: Aretrisul %48 oral çözelti, Favetrim oral süspansiyon, Medsultan oral süspansiyon, Poultris oral süspansiyon, Sulfamega oral süspansiyon, Sulfasym oral süspansiyon, Sulnet 48 oral süspansiyon, Sülprim oral süspansiyon, Trifakin oral süspansiyon, Vitrim %48 oral süspansiyon
Tetrasiklin hidroklorür içeren ilaç: Tetramed oral çözelti
Tiamfenikol içeren ilaçlar: Dilafen %25 oral çözelti, Taf %25 oral çözelti
Tiamulin hidrojen fumarat içeren ilaçlar: Preventium %45 oral çözelti, Vetmulin 450 mg/g oral çözelti, Vetmulin 100 g/kg oral (yem-ilaçlı premiks) granül
Tilmikosin içeren ilaçlar: Tilmovet oral çözelti, Actimisin AK oral çözelti, Aretil %25 oral çözelti, Lavotil %30 oral çözelti, Makrovil oral çözelti, Symtil %30 oral çözelti, Tilcova oral çözelti, Tilmipharm oral çözelti, Tilmix %30 oral çözelti, Tiloks oral çözelti, Tilomed %30 oral çözelti, Unofen-K oral çözelti
Tilozin içeren ilaçlar: Pharmasin %25 oral (yem-ilaçlı premiks) granül, Arelosin %100 oral çözelti, Arelosin %30 oral çözelti, Avitaylo %30 oral çözelti, Avilosine oral çözelti, Medicatay oral çözelti, Pharmasin %100 oral çözelti, Respirosem oral çözelti, Symtay oral çözelti, Tavilin oral çözelti, Taylomisin oral çözelti, Taylosan oral çözelti, Taylosol oral çözelti, Taylosym %24 oral çözelti, Taylovim oral çözelti, Taylovim %30 oral çözelti, Taymavet oral çözelti, Teknotil

oral çözelti, Tiloseptin oral çözelti, Tilosol LQD oral çözelti, Tylan oral çözelti, Tylohek-K oral çözelti, Tylonet %30 oral çözelti, Vitaylozin oral çözelti
Tilvalosin tartarat içeren ilaç: Aivlosin oral çözelti
Toltrazuril içeren ilaçlar: Armakoksid oral çözelti, Coc-Cide %2.5 oral çözelti, Coxmed oral çözelti, Net-Cox %2.5 oral çözelti, Symcox oral çözelti, Toltrazor %2.5 oral çözelti

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ASSESSMENT OF PROGNOSTIC PARAMETERS IN ALPHA-FETOPROTEIN POSITIVE HEPATOCELLULAR CARCINOMA PATIENTS

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Abstract

Alpha-fetoprotein (AFP) is a widely used biomarker in hepatocellular carcinoma (HCC), particularly in AFP-positive cases where it often reflects tumor burden and biological aggressiveness. However, AFP levels alone are insufficient for comprehensive prognostic assessment. This study aims to evaluate the relationships among demographic, clinical, imaging, and laboratory parameters in AFP-positive HCC patients, and to identify independent prognostic indicators such as tumor size, portal vein thrombosis (PVT), liver function, and inflammatory/metabolic markers.

This prospective, single-center study included patients diagnosed with HCC who were AFP-positive at baseline. Evaluated variables included age, sex, etiology, Child–Turcotte–Pugh (CTP) score, ascites, varices, cirrhosis, steatosis on ultrasonography, tumor localization and segment involvement, largest tumor diameter, and presence of PVT. Laboratory parameters comprised AFP, complete blood count (WBC, HGB, HCT, PLT), liver function tests (albumin, bilirubin, AST, ALT, GGT, LDH), renal markers (BUN, creatinine), metabolic indicators (glucose, Na, K, Ca), inflammatory markers (CRP, ESR), iron metabolism (ferritin), thyroid hormones (TSH, T4), lipid profile (cholesterol, triglycerides, LDL, HDL), and autoantibodies (ANA, SMA, AMA). Statistical analyses included descriptive statistics, intergroup comparisons, and multivariate regression to identify independent prognostic factors.

A total of 11 AFP-positive HCC patients were analyzed. The majority were male (63,6%), with a mean age of 65 ± 9.42 years. HBV was the most common etiology (45,5%), followed by Cryptogenic (27,3%) and MASLD (9,1%). Patients with advanced CTP class exhibited higher rates of cirrhosis (72,7%), ascites (45,5%), hypoalbuminemia (3,45±0,75), and thrombocytopenia (196±136). Larger tumor diameter was significantly associated with PVT (5,36 cm). Elevated AFP levels correlated with increased tumor burden and advanced BCLC stage. Inflammatory markers (CRP, LDH) and ferritin showed positive associations with tumor size and progression. Metabolic abnormalities and steatosis were more frequent in MASLD-related cases. Multivariate analysis identified tumor size >5 cm, presence of PVT, and hypoalbuminemia as independent predictors of poor prognosis.

In AFP-positive HCC patients, tumor burden, vascular invasion, and liver function parameters are critical for prognostic evaluation. AFP levels should be interpreted alongside imaging and biochemical markers to guide clinical decision-making. The presence of PVT and hypoalbuminemia are strong indicators of adverse outcomes, while inflammatory and metabolic profiles provide complementary insights into disease progression and etiology. These findings support a multiparametric approach for risk stratification and therapeutic planning in AFP-positive HCC.

Key Words: Alpha feto protein positive; Hepatosellular carcinoma; biochemical markers; clinical; prognosis.

HARNESSING HIGH-IRRADIATION RESOURCES: THE CRITICAL ROLE OF PHOTOVOLTAIC AND SOLAR THERMAL TECHNOLOGIES IN ERITREA'S RENEWABLE ENERGY TRANSITION AND SOCIO-ECONOMIC RESILIENCE

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Abstract

This paper examines the critical role of solar energy in advancing the sustainable development of human society in Eritrea, framed within a historical, technological, and socio-economic context. It first reviews the foundational innovations in solar technology, notably the early solar furnaces of Antoine Lavoisier in the 18th century and the subsequent development of practical solar thermal devices by August Monchot in the 19th century. These historical advancements demonstrate the enduring principles of converting solar radiation into usable heat and mechanical power, providing valuable lessons in efficient resource utilization and scalability. The study then establishes the imperative for sustainable development, defined as meeting present needs without compromising future generations' capabilities, with reliable and sustainable energy supply being a central pillar. Globally, dependence on fossil fuels presents ecological and economic challenges, underscoring the need for alternative energy pathways. Despite a current energy mix dominated by imported fossil fuels and biomass (over 79%), Eritrea holds a powerful key to a more sustainable future: its exceptional solar energy potential. Positioned within the solar belt, the country's highlands enjoy average global radiation exceeding 2000 kWh/m²/year and approximately eight hours of daily sunshine. This vast resource stands in stark contrast to the nation's pressing energy challenges, which include environmental strain from deforestation, economic vulnerability, and minimal per-capita electricity consumption (around 35 kWh/year). This paper contends that strategically deploying solar technologies—such as photovoltaic's for electrification and solar thermal systems for heating, pumping, drying, cooking, and desalination—can effectively address these shortcomings, providing a pathway toward greater energy access, security, and environmental stewardship. Conclusively, the study synthesizes historical technological precedents with contemporary socio-economic needs, advocating for the integration of solar energy into Eritrea's national development strategy. It posits that leveraging this abundant renewable resource can reduce reliance on non-renewable imports, mitigate ecological degradation, and foster resilient, equitable development, thereby contributing directly to the nation's sustainable development goals.

Keywords: Sustainable Development, Solar Energy, Renewable Energy Transition, Energy Security, Photovoltaic's (PV), Fossil Fuel Dependence, Scalability.

Introduction

1.1 Historical background of solar energy

In a world facing rapid change, solar energy offers a sustainable path forward, but its use is far from new. Humans have harnessed the sun's power for millennia, a history that reveals its deep potential. Long before modern technology, ancient civilizations recognized and utilized solar energy in foundational ways.

A primary historical application was in food preservation. Since prehistory, the sun was used to dry and store food, a critical advancement for survival. Ancient Egyptians, for example, perfected dehydration techniques to preserve grains in sealed silos for years. Simultaneously, the sun was vital in salt production through the evaporation of seawater in shallow ponds—a simple, effective method still practiced in places like Eritrea today. This enduring relationship with solar power, beginning with these basic technologies, underscores its timeless value and provides essential context for its modern evolution as a key renewable resource. [1-3]

1.2 Development of solar energy

1.2.1 Development of solar thermal energy

The Renaissance marked a significant increase in invention, bridging medieval and modern history. Leonardo da Vinci (1452–1519) studied the geometry of sunlight reflection on curved metal, discovering a principle independent of the curve itself. In 1767, Horace-Bénédict de Saussure built the first solar collector, the "hot box," a prototype for modern thermal collectors. This was enhanced in the 1870s by W. Adams in India, who added a concentrator to direct sunlight into a glass-covered box. By the 19th century, technology advanced to directly convert solar energy into steam for engines. August Mouchot pioneered this field, creating various solar-powered devices, including ovens and the first solar steam engines. Earlier, Antoine Lavoisier had achieved temperatures of 1750°C using solar heat in the 18th century, demonstrating its potential for high-temperature applications. [4-8]

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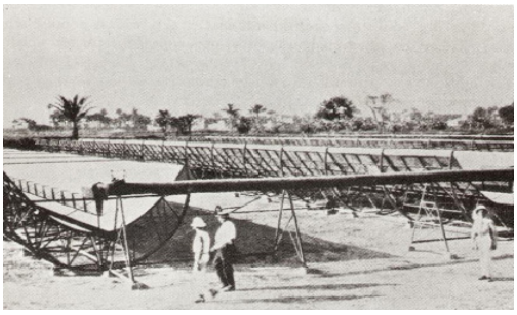


Figure 1:The world's first solar thermal power station

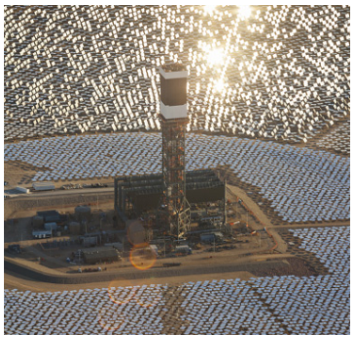


Figure 2:The power plant in Ivanpah Dry Lake

The history of solar thermal power began with Frank Shuman's 1912 plant in Egypt, producing 37-45 kW to pump over 20,000 L of Nile water per minute. Modern large-scale generation started

with 2004's PS10 plant in Spain, using 624 mirrors to produce 11 MW. The current peak is the 377 MW Ivanpah system in the U.S., using over 300,000 mirrors. Concentrated solar energy for domestic water and home heating became widespread in the 1940s, displacing coal-based systems. The technology's origins are much older, beginning with simple, uninsulated black-painted water tanks. These early heaters were inefficient, warming slowly and cooling rapidly without sunlight. [9]

1.2.2 Development of Solar Panel

The development of solar panel technology was an iterative one that took a number of contributions from various scientists. French scientist Edmond Becquerel, determined light could increase electricity generation when two metal electrodes were placed into a conducting solution. This breakthrough, defined as the "photovoltaic effect," was influential in later PV developments with the element selenium.[10] In 1883, Charles Fritts actually produced the first solar cells made from selenium wafers. However, solar cells as we know them today are made with silicon, not selenium. Therefore, some consider the true invention of solar panels to be tied to Daryl Chapin, Calvin Fuller, and Gerald Pearson's creation of the silicon photovoltaic (PV) cell at Bell Labs in 1954.[11] Between 1957 and 1960, Hoffman Electronics made a number of breakthroughs with photovoltaic efficiency, improving the efficiency record from 8% to 14%. The next major achievement was in 1985 when the University of New South Wales achieved 20% efficiency for silicon cells. In 1999, the National Renewable Energy Laboratory collaborated with Spectro Lab Inc. to create a solar cell with 33.3% efficiency. The University of New South Wales broke that record again in 2016 when researchers reached 34.5% efficiency.[11]

1.2.3 Solar energy in developing countries

The evolution of solar panel technology progressed through key milestones, beginning with Edmond Becquerel's 1839 discovery of the photovoltaic effect. In 1883, Charles Fritts created the first solar cells using selenium. However, the modern silicon solar cell was invented in 1954 by Daryl Chapin, Calvin Fuller, and Gerald Pearson at Bell Labs. Subsequent efficiency improvements followed: Hoffman Electronics raised it from 8% to 14% by 1960. In 1985, the University of New South Wales achieved 20% efficiency for silicon cells. Records continued to rise, with the National Renewable Energy Laboratory reaching 33.3% in 1999, and the University of New South Wales setting a new benchmark of 34.5% in 2016. Solar energy in Eritrea Located on the Horn of Africa, Eritrea's arid climate and lack of hydropower or fossil fuels have created significant energy challenges, with heavy reliance on wood and imported oil. To achieve sustainability, the nation is turning to its abundant solar potential. Key developments include large-scale projects like the Assab Wind Farm and widespread small-scale photovoltaic installations in rural areas, which provide essential lighting and water-pumping services. These efforts mark a strategic shift toward renewable sources to reduce dependency on non-renewable imports and traditional biomass. While Eritrea has made important strides in harnessing solar energy, it continues to navigate the complexities of expanding this infrastructure to fully meet its national energy needs.

Eritrea's solar focus adapts to its limited grid by prioritizing mini-grids and isolated photovoltaic systems. These small-scale installations provide essential electricity for remote villages, health centers, and water pumping. While this approach hinders utility-scale solar plants, modular

systems offer a practical solution, exemplified by existing mini-grids in Areza and Madima. This strategy effectively increases the country's renewable energy contribution in rural areas.

As of 2021, renewable sources met only 2.9% of Eritrea's energy demand, indicating significant potential for growth. Solar power, in particular, is central to the country's strategy, pursued through both utility-scale projects and decentralized mini-grids. Despite facing challenges like arid conditions and infrastructure gaps, Eritrea's approach offers a model for sustainable energy transition in developing nations. Success hinges on continued investment in research, infrastructure, and international partnerships to increase renewable penetration and achieve long-term energy security.

In conclusion, Eritrea's journey into solar energy development is marked by unique challenges and opportunities. By addressing current limitations and leveraging its vast potential, the country can pave the way for a sustainable future powered by renewable energy sources.

1.3 Sustainable development

Sustainable development meets present needs without harming future generations' ability to do the same, a principle widely endorsed across sectors. Its goal is to advance human well-being while preserving vital ecological systems. Solar energy is increasingly recognized as crucial to this aim, offering a sustainable power source that can alleviate energy shortages, foster economic growth, and reduce environmental harm. This review consolidates research on solar energy's role in promoting environmental, economic, and social sustainability, highlighting its integral place in a sustainable global energy future. [12]

Solar energy is vital in combating climate change by replacing fossil fuels, reducing emissions, and limiting global warming. A low-carbon future centered on solar power is crucial for meeting climate goals. It also directly improves lives; for example, solar-powered purification systems in Kenya and Uganda provide rural communities with safe drinking water, enhancing health and well-being. [13]

Solar energy significantly conserves water, unlike traditional power plants that consume vast quantities for cooling and risk depleting local supplies. Photovoltaic systems operate with minimal water, easing strain on resources and ecosystems. Furthermore, solar power avoids contaminating water with harmful chemicals, preventing pollution and supporting public health. By reducing reliance on fossil fuels and biogas, it also lowers overall energy demand, offering a cleaner, more sustainable path for both water and energy security. [14]

1.3.1 Role of solar energy in economic development

In recent years, the economic benefits of solar energy have become increasingly evident, making it a popular choice for both homeowners and businesses. Solar power not only offers a sustainable and renewable energy source but also provides significant financial advantages. As the cost of solar technology continues to decrease, more people are recognizing the potential savings and economic growth associated with solar energy. The economic benefits of solar energy extend beyond just reducing utility bills. Solar power contributes to sustainable agriculture job creation, energy independence, and increased property values. Additionally, government incentives and tax benefits make solar installations more affordable, further enhancing their economic appeal. By investing in solar power, individuals and businesses can enjoy significant financial savings and contribute to broader economic growth. [15-17]



Figure 3: solar panels in agricultural use



Figure 4: solar panels in a school

1.3.2 Role of solar energy in social sustainability

Solar energy is a transformative force that extends beyond environmental benefits to drive profound social progress. It powers educational access, creates jobs, and builds more equitable communities. Crucially, it reduces poverty by providing affordable energy and enhances healthcare in remote areas through reliable, off-grid solar power. By tackling energy poverty, solar technology directly supports health, well-being, and broader societal uplift, addressing some of today's most urgent challenges. [18-23]

Investment in solar energy fosters technological innovation and infrastructure development, driving job creation and empowering communities to achieve energy independence. This transition enhances economic stability, builds resilience, and reduces carbon emissions to combat climate change. Crucially, it also promotes social equity: in rural areas, targeted training programs equip women with technical skills, boosting their confidence, leadership, and economic participation. Beyond environmental stewardship, solar energy strengthens public health, education, and local collaboration between governments, businesses, and residents. By harnessing this clean, local resource, we advance toward a more inclusive, resilient, and sustainable future for all. [24-28]

As a brief summary, global Sustainability Goals, also known as the Sustainable Development Goals (SDGs), are a set of 17 interconnected objectives established by the United Nations. These goals aim to create a better and more sustainable future for all. They cover a wide array of areas including poverty, inequality, climate change, environmental degradation, peace, and justice. Solar energy plays a crucial role in achieving these goals, particularly by providing clean and renewable energy that can power progress in various sectors.

2. Research Methodology

In this section of this paper, we are going use tools or methods that will facilitating our research for collecting and analyzing data. This section will include the following sub sections such as research design, study area, and data collection.

2.1 Research design

Here in the methodology for a research on the role of solar energy for the sustainable development of human society in Eritrea: This study has employed a qualitative research design, combining both quantitative and qualitative methods. The study has been accomplished through the secondary data and questionnaire which have been collected from various sources. Sources like the ministry of Energy and mines (MEM), the Energy Research and Training Centre (ERTC). Besides, published books, articles and journals which are sourced from internet. The research was conducted in Eritrea, a country with a high solar energy potential and other renewable energy sources, but with significant challenges in wide spread of energy access and its Grid infrastructure.

2.2 Study area

Eritrea is one of the east African countries located in the horn of Africa. It sprawls between 12° to 18° north and 36° to 44° east, is bounded by Red Sea in the northeast and east, by Djibouti in the southeast, by Sudan in the north and northwest and Ethiopia in the south. Eritrea is divided into six administrative Zones, i.e. Northern Red Sea, Anseba, Makael, Gash Barka, Debub and Southern Red Sea. Eritrea has diverse topographical features such as mountains, hills, plains, and escarpments. Geographically, it is divided into highlands and lowlands, where most of the lowlands are dominated by an arid and semi-arid climate; particularly, the eastern lowlands are desert and very hot throughout the year.

The climate condition of the country is also diverse, varying from extremely hot along the deserts to cold and favorable climate in the highlands. In Eritrea, topography plays a great role to regulate the climate condition; three seasons within two hours can be experienced as someone travels from the Massawa port to Asmara, the capital city in central highland. Eritrea's weather, characterized by long sunny days throughout the year, makes it suitable for harnessing solar power. Data from the wind and solar monitoring stations installed in many parts of Eritrea show that the country has a great potential, around 6 kWh/m^2 of solar energy. Based on studies carried out by the Ministry of Energy and Mines (MEM) meteorological sites for the detection of potential solar sites have been set.



Figure 5: 1.012 hectares of solar farm in Maidma



Figure 6: 0.48 hectares of solar farm in Areza zoba Debub

2.3 Data collection

Solar irradiance, the radiant energy received per unit surface area, is recorded for various purposes. Solar stations measure both diffuse and total irradiance hourly. The daily totals are averaged monthly to determine mean daily solar irradiance. In contrast, wind stations measure only direct irradiance, recording global irradiance every ten minutes. These ten-minute values are summed to calculate the daily global total, which is then averaged each month to obtain the average daily global irradiance. Thus, both station types use distinct instruments and time intervals to derive monthly averages of daily solar energy.

There are three tables for each of the solar stations namely, Asmara, Embatkala, Agordat, Areza, Nakfa and Tio. These three tables consist of average daily global irradiances (measured by two types of pyranometers) and average daily diffused irradiances. The average daily global irradiances was processed from stations located in Asmara, Embatkala, Agordat, Areza, Nakfa and Tio. The results found from the irradiance measuring devices show that Eritrea has good solar energy resource. The data show that Eritrea has daily mean solar irradiances, in most places, of around 6.5kWh/m^2/day which is among the best solar resources in the world. Even the lowest scored

annual daily averaged solar irradiance 5.28 kWh/m^2/day is a good solar resource. The data show that Eritrea has a huge potential of solar energy.[34]

Potential of Solar Energy

Regional solar energy potential indicates Eritrea has annual variation of solar radiation in each region to the topography of it. Eritrea has highest annually recorded direct solar radiation

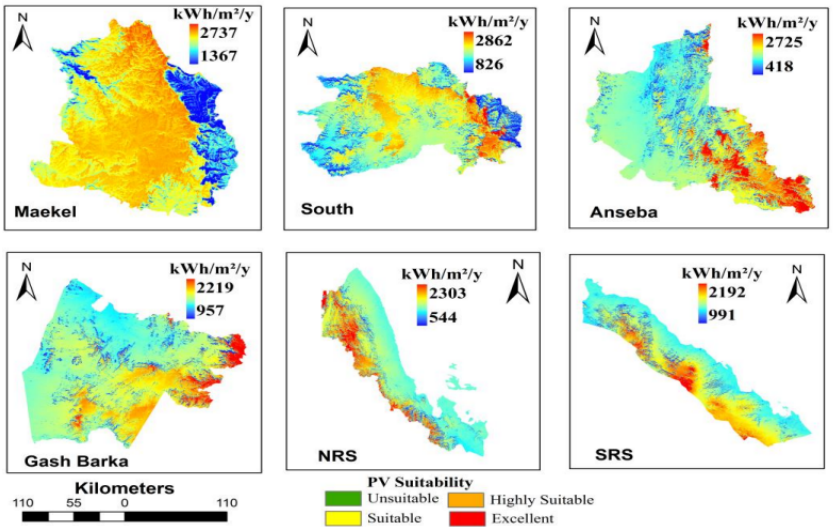


Figure 7: Spatial distribution of solar energy potential in different regions of Eritrea

Figure 7 shows Eritrea's annual solar radiation by region. The highest values occur in the highlands of Maekel and the South, with global horizontal irradiance (GHI) ranging from 1367–2862 kWh/m². Lower GHI is found on north/east slopes and parts of the western South Region due to shading and shorter sun exposure. The lowest radiation is in Anseba (418–2725 kWh/m²). Conversely, the flat, sun-exposed terrains of Gash Barka, NRS, and SRS offer strong solar potential, with GHI between 544–2303 kWh/m². Nationally, average maximum and minimum GHI are roughly 2506 and 850 kWh/m², respectively. This indicates widespread suitability for solar energy, except some shaded northern and western slopes. [32] The data above are using GIS based approach. To analyze the potential of solar energy in Eritrea we gathered the data from metrological sites in Eritrea. The data is brought from ministry of Energy and Mines gathered from six metrological sites.

Table 1*: Average Yearly Global Irradiance (kWh/m^2/year)*

A_{mean}	*Areza*	*Agordat*	*Asmara*	*Tio*	*Nakfa*	*Embatkala*
2022	6.103	6.085	6.084	6.032	6.015	5.488
2023	6.441	6.127	6.185	6.341	6.072	5.426
2024	7.214	6.355	5.950	6.238	6.080	5.512

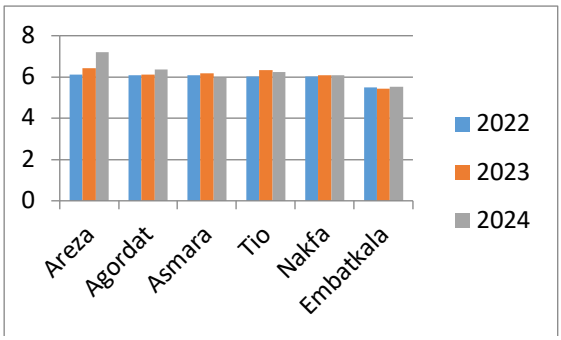


Figure 8: Average Yearly Global Irradiance (kWh/m^2/year)

3. Result and discussion

Solar energy offers Eritrea a vital opportunity to reduce fossil fuel reliance and address climate change. Harnessing global solar advancements, it provides economic benefits through lower electricity costs and new revenues. Environmentally, it reduces fossil fuel use, improving air quality. Solar power also enhances long-term energy independence and reliability. For agriculture, solar-powered irrigation boosts productivity and food security in variable climates. Ultimately, solar energy is a cornerstone for sustainable growth, resilience, and improved quality of life in Eritrea.

Our case studies and applications highlight the development of solar water heaters and panels as successful applications in Eritrea. These technologies have proven effective in regions with limited infrastructure, demonstrating how solar energy can be tailored to local conditions for sustainable development.

***Invest in Solar Energy Infrastructure*:** Prioritize the expansion of solar energy infrastructure to address Eritrea's unique challenges, such as high altitudes and limited resources. This will ensure that solar installations are reliable and sustainable in various regions.

***Integrate Solar Energy with Existing Grids*:** Modify or upgrade the existing electricity grid to incorporate solar power systems effectively. This integration can provide a more stable energy supply, reducing reliance on fossil fuels during outages.

***Promote Partnerships Between Local Communities and International Organizations*:** Encourage collaboration between Eritrean communities and international organizations to foster technology transfer, financial support, and awareness of solar energy benefits.

***Adopt a phased approach for Solar Energy Installation*:** Implement solar energy installations in phases, starting with high-impact sectors like agriculture and healthcare before expanding to urban areas. This phased approach ensures practical implementation while maximizing impact.

***Enhance Awareness and Education*:** Launch campaigns to raise public awareness about the benefits of solar energy, including its role in reducing air pollution, conserving water, and improving health.

***Encourage R&D for Solar Technologies*:** Invest in research and development to improve the efficiency and affordability of solar technologies, ensuring long-term viability as part of Eritrea's technological advancement.

***Foster Economic Resilience Through Solar Energy*:** Use solar energy to support economic growth by creating job opportunities in renewable energy sectors, improving local livelihoods.

***Highlight the Dual Role of Solar Energy in Environmental Sustainability*:** Emphasize how solar energy contributes to environmental stewardship by reducing greenhouse gas emissions, conserving water, and mitigating pollution, thus supporting Eritrea's path towards global sustainability goals.

4. Conclusion

In conclusion, solar energy presents a transformative potential for Eritrea's development. By prioritizing renewable energy initiatives, the country can not only harness local resources effectively to reduce its carbon footprint but also foster economic stability and environmental stewardship. Investing in solar energy technologies and infrastructure will empower communities; enhance their well-being through cleaner air, water conservation, and improved health, while reducing reliance on fossil fuels and promoting long-term resilience against climate change.

Collaborative efforts between Eritrean communities and international organizations are essential to achieve these goals, ensuring a sustainable future for the planet and its inhabitants.

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AGRICULTURAL PRODUCTIVITY AND HOUSEHOLD FOOD SECURITY IN SUB-SAHARAN AFRICA: EVIDENCE FROM MAIZE-FARMING HOUSEHOLDS IN NIGERIA

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Abstract

Understanding the nexus between agricultural productivity and household food security remains a critical policy concern in sub-Saharan Africa. This study examines the relationship between maize productivity and household food security using micro-level data from 161 maize-farming households in Kogi State, Nigeria. Maize productivity is proxied by yield per hectare, while household food security status is measured using the United States Department of Agriculture (USDA, 2000) Household Food Security Survey Module. Given the ordinal nature of the food security outcome, an ordered probit regression model is employed to examine the effects of maize productivity alongside socio-economic, demographic, and institutional factors on household food security. The empirical results reveal that food insecurity remains widespread among maize farming households, despite moderate to high levels of maize productivity. Contrary to conventional expectations, maize productivity exhibits a negative and statistically significant association with household food security. In contrast, access to credit, income derived from maize production, and education attainment exert positive and significant effects on food security, while household size adversely affects food security outcomes, reflecting dependency pressures. These findings suggest that productivity growth alone are insufficient to ensure household food security in the absence of complementary interventions. The study contributes to the empirical literature on the relationship between productivity and food security. It advocates the promotion and creation of policies and conducive environment by government, non-government organizations, community based organization among others that will engender complementary investments in financial inclusion, market integration, postharvest management, and social protection in Nigeria and sub-Saharan Africa.

Keywords: productivity; food security; smallholder farmers; ordered probit; Nigeria; sub-Saharan Africa.

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF BENZIMIDAZOLE DERIVATIVES

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Abstract

Benzimidazole is a simple substance that plays an essential role in many pharmacokinetic compounds. This study describes the different methods of synthesis of benzimidazole derivatives as well as their biological activities. Benzimidazoles are considered essential components for the production of various pharmaceuticals and therapeutic agents due to their remarkable effectiveness in medical and diagnostic fields. This review summarizes the synthetic methods of benzimidazole derivatives described between the years 2007 and 2025. These strategies could help researchers to design a new molecule containing the benzimidazole unit with important pharmacological activities, such as: antibacterial, antifungal, anti-inflammatory, antiviral, anticancer, etc.

Keywords: Benzimodazole, Pharmacokinetic Compounds, Biological Activities, Study, Methods.

INSIGHTS INTO ELECTRONIC STRUCTURE, ORGANIC PHOTONICS, ADME/TOXICITY PROFILES, AND TARGET-LIGAND DOCKING INTERACTIONS OF [E]-FUSED 4-ACYL-1H-PYRROLE-2,3-DIONES IN CYCLOADDITION REACTIONS WITH CYANAMIDES

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Abstract

This study presents a theoretical investigation of the cycloaddition between [e]-fused 4-acyl-1H-pyrrole-2,3-diones and cyanamides, aiming to elucidate reaction mechanisms and predict outcomes through computational approaches. Using MEDT at the DFT/B3LYP/6-311G(d,p) level, we examine kinetic, thermodynamic, and stereochemical features, with Electron Localization Function (ELF) analysis providing detailed insights into the electronic structure of the resulting 4H-1,3-oxazines. Additionally, molecular docking evaluates ligand–target interactions, ranking binding affinities and rationalizing behavior. Overall, the integrated approach offers mechanistic understanding and supports the design of new synthetic and biologically active compounds.

Keywords: Reactivity, Cycloaddition, DFT, ELF, Docking, ADMET, Organic Photonics, Corrosion inhibition.

FROM OPTIMIZATION TO CLINICAL DECISION-MAKING: IS AI REALLY RECONFIGURING HOSPITAL MANAGEMENT?

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Abstract

This communication looks at how far artificial intelligence can, in concrete terms, transform hospital management practices. Although it is often promoted as a response to persistent structural constraints in healthcare institutions, the outcomes observed in practice remain uneven. In certain settings, AI contributes to improvements in operational activities, including patient triage, medical imaging, patient-flow regulation and the coordination of administrative work. In other situations, its contribution appears more limited, largely because it depends on conditions that are not systematically in place, such as data reliability, the level of digital infrastructure, the interoperability of information systems and internal organizational configurations. The analysis indicates that AI is gradually influencing both clinical and managerial decision-making, which leads to a reconfiguration of professional roles among physicians, nurse managers, administrative staff and hospital executives. Ethical questions remain very present in the day-to-day use of AI in hospitals and they continue to raise discussion among professionals. Concerns most often relate to algorithmic bias, limits to transparency, unclear responsibility in decision-making and the way sensitive patient data are handled. Beyond these issues, experience within hospitals shows that the integration of AI is strongly shaped by organizational conditions. The way decision-making is organized inside hospitals matters. Training practices matter as well. Leadership involvement makes a difference. The capacity of teams to adapt over time also affects how these tools are actually used. AI is present in these processes but it does not act alone. What follows depends on human judgment, on strategic direction and on everyday organizational choices. In some cases, this leads to limited use. In others, it allows more meaningful integration.

Keywords: Artificial intelligence; Hospital management; Clinical decision-making; Patient-flow optimization; Data governance; Algorithmic bias; Organizational transformation; Digital health; Acceptability; Medical ethics; Decision-support systems; Hospital governance.

OPTIMIZING OUTCOMES IN PSORIASIS: IMPACT OF DENIPLANT NUTRACEUTICALS

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Abstract

Background A growing body of evidence highlights that intestinal dysbiosis is associated with the development of psoriasis. The gut–skin axis is the novel concept of the interaction between skin diseases and microbiome through inflammatory mediators, metabolites and the intestinal barrier. The gut microbiome affects skin homeostasis through its influence on the signaling pathways that coordinate epidermal differentiation.
The objective of this study was to synthesize current data on the Deniplant natural modulator of the gut microbiome in patients with psoriasis.
Materials and methods All studies confirmed the association of psoriasis and gut microbiota dysbiosis. We describe the recent advances regarding the interplay between gut microbiota and the skin. Thus, the microbiome can be considered an effective therapeutical target for treating this disorder.
Results This presentation provides a detailed and comprehensive systematic study regarding gut microbiome in patients with psoriasis. These results are supported by clinical observations based on a case serie showing improvement in psoriatic skin lesions after Deniplant natural modulator. It is still not clear whether psoriasis is an effect or a cause of the observed disbalance between beneficial and pathogenic microbes. In this context, the study provides very interesting results, showing significantly greater changes in the gut microbiome of patients with psoriasis treated Deniplant natural modulator
Conclusion There is a significant association between alterations in gut microbial composition and psoriasis. Intestinal dysbiosis is a state of imbalanced gut microbiome that eventually has a negative impact on skin function and integrity. Deniplant natural modulator is a potential therapeutic strategy in patients with psoriasis

Keywords: dysbiosis, microbiome, psoriasis, gut-skin axis, gut barrier, Deniplant nutraceuticals.

EXPLORING THE EFFECTS OF FINANCIAL SUPPORT ON EXCLUSIVELY EXTRACTED AREAS OF ACADEMIC PROCRASTINATION AMONG THE STUDENTS OF SELECTED UNIVERSITIES

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Abstract

The present research is about scholarship as a practice of academic award or financial assistance and support for students to further their education and to enable them to perform excellently. Researchers have dealt with the concepts of scholarship and academic dishonesty, and the development of human environment from sociological perspective, but discretely. Thus, here is the first empirical investigation about the influence of academic scholarship on academic dishonesty on students and lecturers' attitudes towards the development of the environment. Therefore, the study adds to the literature by establishing and examining academic scholarships impact on academic dishonesty in developing human environment through a unique sample of post-secondary students cum lecturers of higher institutions as a control group. The students will be grouped into certain categories in accordance to their academic scholarship position and questionnaires assessing academic dishonesty will be randomly distributed among a large population of participants. As hypothesized, scholarship was found to be significantly impacted academic procrastination among the students. Recipients of full scholarship with monthly stipends were found with the lowest level in all selected areas of academic procrastination. Oppositely, non-scholarship recipients among the students were reported with the highest values of academic procrastination in all targeted domains of this study as outlined above. Mere assessment of the two outcomes indicates positive impact of scholarship on academic procrastination. Accordingly, the study tested whether there is impact of scholarship in gender on academic procrastination. It was confirmed that the female students procrastinate slightly higher than male students. In terms of generalisability, the approach in which the data of this study were gathered, also with the considerable size out of the population make the findings generalisable.

Keywords: Financial support; scholarship types; effects; academic procrastination; private university.

METHODOLOGICAL FRAMEWORK FOR CRITICAL ANALYSIS OF INDIVIDUAL EGODOCUMENTS: BRIDGING SUBJECTIVITY AND HISTORICAL EVIDENCE

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Abstract

This study develops a methodological framework for the critical analysis of personal writings—such as diaries, letters, memoirs, and autobiographies—as sources for historical and social research. The research specifically focuses on creating practical steps for evaluating authenticity, reliability, and the evidentiary value of egodocuments, clarifying how individual subjectivity affects these documents as historical evidence. The study delineates the procedure by outlining linguistic analysis, historical contextualization, and comparison with contemporaneous sources. It also addresses how narrative structure, language, style, and authorial bias inform our understanding of the past. The findings reveal that, despite selective memory and subjective editing, egodocuments provide key perspectives absent from official records. Comparative analysis enhances reliability. The study's main contribution is a structured method for uncovering meaningful connections between individual lived experiences and larger historical events while maintaining awareness of inherent subjectivities.

Keywords: Egodocuments, Personal narratives, Historical methodology, Subjectivity, Source validation.

Introduction

This study investigates how egodocuments—personal stories such as diaries, letters, memoirs, and autobiographies—can be critically analyzed as historical evidence. It aims to clarify and address the central challenge: how to establish clear, practical guidelines for assessing the trustworthiness and value of these sources, while accounting for their inherent subjectivity. The research focuses on balancing rigorous source validation with recognition of egodocuments as valuable narratives shaped by individual perspective. Until the mid-1900s, scholars often questioned the reliability of such sources, as Romein noted, but more recent work by Lejeune and Krassnitzer underscores the importance of context, culture, and memory. This study identifies private, semi-private, and public egodocuments as distinct research categories and analyzes the difficulties associated with each, especially when direct clarification from the writers is impossible. Memory bias, emotional influence, and self-representation complicate the extraction of information, as Hynes and Fussell have shown. Despite these challenges, the central research focus is on developing a clear methodological framework—one that incorporates comparison with external sources, language analysis, and contextual investigation. By defining explicit steps for evaluating egodocuments and considering potential biases, this research provides an operational guide that helps researchers connect individual experiences to the broader sweep of historical events while maintaining methodological rigour.

Literature Review

The study of egodocuments has undergone significant change over the past hundred years. This review examines the key ideas and debates surrounding egodocuments and their use across different fields. Egodocuments emerged as a special type of historical source in the Netherlands in the mid-1900s. According to Dekker (2002), egodocuments are texts where people write about their own actions, thoughts, and feelings. This makes them different from simple factual records or stories written by others. Examples of egodocuments include diaries, letters, memoirs, and autobiographies, as well as modern forms such as blogs and social media posts. Views on these sources have shifted from skepticism to recognition of their importance. Early historians often doubted the reliability of personal stories. Romein called egodocuments some of the most dangerous materials for history because people preferred official documents. Historians worried that personal stories might be unreliable, biased, or not typical. They mainly focused on official records, thinking that personal stories were too emotional or self-serving. Later, new ideas in history changed this perspective. Lejeune's work on autobiography revealed that personal stories are complex cultural objects that show shared memories and ideas. This shift aligned with broader trends in social history and cultural studies, which highlighted that people's experiences and perspectives shape history. Today, experts value personal stories for their subjectivity, as they provide feelings and experiences often missing from official sources. Now, researchers see egodocuments as essential for understanding both individual actions and group memories. Krassnitzer's research shows that personal stories help reveal how groups remember and explain events. This makes them helpful in studying military culture, social norms, and group identity. (Kleinreesink, n.d.) Eodocuments are essential for many fields of research because they are both personal and social. Medical researchers study these documents to understand trauma and coping. Sociologists examine them to understand social roles, while cultural historians use them to explore changing values. However, there is still much debate on how to study egodocuments effectively. Hynes notes that personal war stories can be unreliable due to bias, emotion, or mistakes. Fussell studied letters from World War I and found that people often left out details to protect others' feelings or for military reasons. (Fussell, 1975) This shows that many factors, such as psychological defences, social expectations, rules, and language limits, can shape how personal experiences are recorded. Newer methods aim to improve this by comparing personal stories with other sources and considering context. Researchers now often check personal accounts against official records and other evidence. They also analyze language to find patterns in storytelling and the ideas that influence their words. Understanding the context helps researchers see the limits and possibilities of these writings. The type of egodocument matters too. Private documents, like locked diaries, offer a direct form of self-expression but are still influenced by social rules and the act of writing. Letters and emails are written for specific people, so they tend to focus more on self-presentation. Public egodocuments, such as published memoirs and blogs, are intended for broad audiences and are often edited for public sharing. Each type requires a different approach for study. It's also important to look at what surrounds the main text, known as paratext. Genette's theory explains how elements like covers, prefaces, and images can shape meaning. In military documents, photos, maps, and introductions add essential context. Kleinreesink found that almost all modern Afghan memoirs include images, indicating that these documents should be studied in diverse ways. (Kleinreesink, 2017) Studying the main themes in egodocuments reveals that specific ideas recur. Hynes and Fussell identified recurring themes in military writing, such as fear,

friendship, honour, and disappointment. (Virtual Patriotism, 1998) These themes illustrate shared ways of understanding difficult experiences. Yet, research also indicates that personal stories can vary significantly across countries, time periods, and cultural groups. Finally, looking at how stories are structured adds another layer. Analyzing the plot, based on Aristotle's ideas about storytelling, reveals how people organize their experiences into narratives with a beginning, middle, and end. Friedman's list of plot types helps us compare how different writers tell their stories. Studying stories shows the difference between what happened and how it is presented, showing how storytelling shapes memory and meaning. New digital tools now allow us to study personal documents in new ways. Computer programs can analyze many personal stories to find patterns and themes that are hard to see by reading each one closely. Software such as ATLAS.ti and NVivo help researchers organize and analyze these texts while preserving context. These tools complement traditional methods of studying texts, allowing researchers to examine both significant patterns and small details. Using personal documents from different fields shows their usefulness. In psychology, they help us understand trauma and recovery. Sociologists study them to explore identity and social roles. Cultural historians use them to see how views on emotions and the body have changed. Military researchers study them to learn about combat and army life. This mix of fields enriches the study of personal documents by introducing diverse ideas and methods. One ongoing issue is that most personal documents come from people who write well and have access to publishing platforms, leaving some voices unheard. Factors like gender, class, race, and education affect who writes personal documents and which stories get shared. This means personal documents don't represent the entire population. Still, experts say that even unusual voices are critical because they show the diversity of human experience. Ethical issues are also significant in the research of personal documents. Privacy, consent, and who interprets these stories are important concerns, especially for materials not meant for public view. Digital personal documents bring new challenges, including how to access data, protect the author's privacy, and manage the fact that online materials can persist for a long time. Researchers must balance the need for knowledge with respect for privacy, especially when dealing with sensitive topics. The main gap this study addresses is the lack of clear methods for judging if personal documents are reliable and valid. While many theories and studies use personal documents, there are few clear rules for determining whether they are authentic, trustworthy, and representative. This study offers a structured approach to turning theory into practical steps, helping researchers use personal documents effectively while maintaining high standards.

Methodology

This study examined personal documents, known as egodocuments, to understand history and society. It focused on three main areas: the elements around the text (like covers and images), the main story, and the words used. The researchers used different methods to evaluate whether personal stories were authentic, reliable, and representative, while also accounting for individual perspectives. The main set of documents included stories from military personnel about the Afghanistan conflict from 2001 to 2010. The documents were categorized by their intended audience: private (such as diaries), semi-private (such as letters and emails), and public (such as published memoirs and blogs). The researchers selected documents based on their availability, relevance to the time, and the diversity of the authors. The final set included 94 memoirs, along with digital letters and blog posts when available. Most sources were in English, which may limit

the relevance of the findings to other cultures. The documents came from university libraries, publishers, and online archives. Each document was recorded with details like the publication date, the author's background (when known), and the type.

The team gathered author information by reaching out directly and using public resources, but many did not respond, leaving some author details missing in about one-fifth of the cases. Additional materials, like book reviews and author interviews, were also collected to provide context for the primary texts. The analysis had three main steps. First, the study examined elements surrounding the text, including book covers, introductions, acknowledgments, and images. It drew on Genette's ideas about paratext to examine how authors set up their stories and connect with readers. The study counted and checked photos and maps for their frequency and location. Almost all memoirs included images, accounting for about one-tenth of the content.

Second, the researchers studied the main stories and themes. They identified themes using both established categories from military writing (such as fear, friendship, honour, and disappointment) and new themes that emerged in the context of the Afghanistan conflict. The study examined how stories are structured by comparing them to classic story formats, focusing on the elements of a beginning, middle, and end. It used Friedman's fourteen basic story types to analyze different narratives. The researchers also examined word patterns in digital texts using software such as ATLAS.ti and NVivo. This helped identify repeated words, language markers, and common ideas across multiple texts. To ensure accuracy, they compare personal stories with official military records and other sources whenever possible. They noted any differences to explore signs of self-censorship, changes in memory, or intentional storytelling choices. They recorded factors that might affect trust, such as the time gap between the events and the writing, the publication method, and whether the story went through any editing or military review. The study evaluated potential bias, including factors such as trauma, memory changes, and the desire to present oneself in a positive light. It also looked for signs of military censorship by examining missing details, cautious language, and mentions of reviews. They acknowledged that the authors represented a small, educated group of military personnel. To protect privacy, ethical guidelines were followed. Published memoirs and public blogs were treated as open materials, but care was taken regarding the authors' feelings and potential trauma. If any author details were missing, this was reported honestly. They handled online materials in accordance with internet research guidelines, taking the audience and the content's availability into account. To ensure consistent analysis, the research team checked and improved their coding with input from others. They created, tested, and updated a coding guide as needed. The research process was documented in a journal, noting the researcher's views—the analysis aimed to find patterns while also recognizing each story as a unique human experience.

Results and Findings

This study examined 94 military memoirs, as well as digital letters and blog posts, from individuals who served in Afghanistan between 2001 and 2010. It focused on how these personal writings contribute to our understanding of history and society, the patterns found in different types of documents, and their reliability. The research explored three main areas: elements surrounding the text, the main narrative and its themes, and the language used. Most memoirs included images, such as pictures and maps, with the number and placement varying by document type. Published

memoirs typically included many images, while blogs included fewer, and private diaries rarely included any. Many published memoirs included sections such as prefaces and thank-you notes, in which authors often explained their reasons for writing. Common motivations included honouring fallen friends, processing personal experiences, or clarifying misconceptions about the war. Book covers often depicted military scenes, frequently featuring soldiers or landscapes and using darker colours. The study identified recurring military themes, including fear, friendship, honour, and disappointment, with friendship being the most prevalent. Fear was addressed more directly in private writings, while public memoirs tended to focus on overcoming it. New themes specific to Afghanistan also emerged. Many authors expressed confusion and frustration with local people, making it a significant focus in their writings. Frustration with military regulations was also commonly highlighted. The relationship with interpreters was essential to many, often leading to mixed feelings. Issues with technology and communication also affected many, as they struggled to connect with home while feeling isolated. Most stories analyzed had a clear structure, typically starting with preparation for deployment or arriving in Afghanistan, moving through various challenges, and concluding with returning home or reflecting on the experience. Common themes included personal growth through hardship, overcoming challenges, and facing disappointment. The way time was portrayed varied by the type of document. Memoirs often reflected on events years later, while blogs and letters were written closer to the actual events and tended to be less organized. The study found frequent use of certain words, such as "mission," "team," "enemy," and "home," as well as terms like "Taliban" and "Afghan." There was a tendency to use negative or neutral language about Afghan civilians, indicating a vastly distant or hostile perspective. Additionally, many texts used softer terms to describe complex situations, like referring to fighting as "kinetic action" and casualties as "fallen." This softer language was more common in public memoirs than in private diaries or letters, suggesting that writers tailored their language to their audience and to military guidelines. To verify the accuracy of these stories, the study compared them with official military records and news reports. It was found that a significant portion of the accounts could be checked, but many documents had inconsistencies, particularly regarding the order of events or the number of people involved. This often happens in stories written long after the events, indicating that memories can fade over time. Self-censorship was common, with many documents lacking essential details, being vague, or abruptly changing topics. Letters displayed the highest level of self-censorship, likely as writers aimed to spare the feelings of those back home and comply with security guidelines. Many published memoirs mentioned military review processes, and some authors noted that content was altered or removed for security reasons. The authors of these writings were not typical, as most were men, despite women making up a small percentage of the deployed forces. A majority held college degrees, and many were junior officers or senior enlisted members, while information about some authors was missing. Most memoirs were published by commercial publishers, with some from military or veteran publishers and a few self-published. Commercial books tend to get more media attention than others, suggesting that what gets published often depends on marketability, which in turn influences which stories are shared. Analyzing the different types of documents revealed distinct styles. Private diaries featured more emotional writing and honesty about feelings. Letters balance personal emotions with concern for the reader's comfort. Public memoirs were well-structured and reflective, often looking back on events after the fact. In summary, these personal writings from the Afghanistan conflict offer valuable insights into individual experiences and culture. However,

they are influenced by various factors such as the audience, the passage of time, the authors' backgrounds, publishing methods, and instances of self-censorship. While these documents provide access to emotions and perspectives missing from official records, they should be carefully examined and understood in context to be reliable sources for history.

Discussion

The term 'egodocument' refers to a text in which an author discusses their own actions, thoughts, and feelings. Until the mid-20th century, historians viewed egodocuments as unreliable and not applicable. A Dutch historian named Romein even called them the most dangerous sources. However, attitudes changed with the rise of postmodern thinking, which shifted the focus from facts to how society constructs those facts. French researcher Lejeune argues that we should not see autobiographies as historical sources, but rather as critical social facts. Research by Krassnitzer shows that autobiographies do not provide personal truth but rather reveal how groups of people remember and interpret events. This aspect makes egodocument research interesting: these texts represent not just individual stories, but also insights into (military) culture. Egodocuments fall into three main categories based on who they are written for. First, some egodocuments are for personal use. Diaries, for example, help people organize and remember their thoughts and feelings, often without intending to share them. Some diaries even come with locks to keep them private. Second, egodocuments can be created for a limited audience. Military personnel have traditionally used letters to communicate with family and friends. Nowadays, they often use email. These letters and emails are egodocuments meant for specific people, not for public distribution. Third, some egodocuments are intended for the public. Internet blogs and books are examples of this type, as they are intended for a broad audience. Eodocuments are valuable sources of information that can benefit military researchers from various backgrounds. A medical researcher studies post-traumatic stress disorder and smoking in military personnel using military egodocuments. A sociologist examines the roles and positions of interpreters in military operations. A historian examines how ideas about the relationship between the body and the mind have changed. Eodocuments attract military researchers for their rich content and suitability for scientists from diverse backgrounds. Positivists can categorize texts and study patterns, while interpretivists can explore meanings. Working with egodocuments, which H. Russel Bernard calls "found texts," is different from working with "created texts," like interviews. Researchers cannot influence egodocuments, which makes them unobtrusive materials. However, there are disadvantages to studying egodocuments. Researchers cannot directly ask the author's questions, making it hard to probe the narrative in detail. While content analysis can be combined with other methods, such as interviews, reaching out to authors and publishers can be challenging. A study of Afghanistan memoirs published between 2001 and 2010 found that many soldier-authors did not mention their age. When researchers tried to contact them, many did not respond. As a result, the 'age' information is missing in 20% of cases in many databases. (Afghan War Diary, 2010) Another drawback is that egodocuments may not always reflect historical truth. Hynes explains that they can be unsatisfactory as history because they can be biased, emotional, and full of errors. Bias and emotion affect egodocument content for psychological reasons. In his book, The Great War and Modern Memory, Fussell notes that World War I soldiers wrote only about socially acceptable topics in letters and postcards to spare their recipients' feelings. This self-censorship is influenced by social desirability and military censorship to maintain operational security. In both World Wars,

letters from military personnel were often censored. Although letters and blogs are no longer actively censored, they still follow operational security rules. The military reviews books written by personnel for security issues before publication. Lastly, it is unclear how representative these authors are. Can they represent the average soldier, or are they different? Most studies focus on specific groups, making it difficult to draw general conclusions about the military. Having discussed the pros and cons of studying egodocuments, let's now look at the three main elements of egodocuments: Para text, text, and the words that make up the text. The first element to study is paratext. The term 'paratext' refers to all the elements that surround a text. This includes book covers, forewords and acknowledgments, as well as book reviews and author interviews. Paratexts help study how authors connect with their audience. For example, in a memoir's preface, authors explain their motivation for writing. A book cover indicates the target audience, and book reviews show the book's impact, or the lack of it. Images are another essential part of paratext. Many military egodocuments, such as memoirs, blogs, and emails, often include photographs. In fact, 94 percent of modern Afghan memoirs include pictures or other images, such as maps, which account for about 10 percent of the book (Kleinreesink 2014). (Kleinreesink, n.d.) However, little research has been done on military images themselves. Most studies focus on images of the military, but it may be equally interesting to look at what military members choose to show or remember. The second central aspect to study is the text itself, including its central themes and plot. Classic studies of military egodocuments, such as Hynes' The Soldier's Tale and Fussell's The Great War and Modern Memory, explore themes like fear, comradeship, honour, and disillusionment. These themes are common in military writing, making them a good starting point for comparisons across countries or time periods. Most Western stories follow an Aristotelian plot structure. This means the hero goes on a journey, faces obstacles, and changes the world or themselves within a limited time frame (Aristotle, 2004/ca 330 BC: VII 51a6). Several theories can help analyze plot structure, from tracking the story's positive or negative value over time to using Friedman's fourteen basic plot types. At a deeper level, the actual words in the text can also be analyzed. With the rise of digital documents and improved text reading software, it is now possible to analyze texts at the word level. Qualitative data analysis tools, such as ATLAS.ti and NVivo, include features to help identify key themes and concepts.

Conclusion

This study highlights the value of personal writings in connecting major historical events with individual experiences. It shows that these personal stories are not merely unreliable but are complex cultural records that require careful examination of their authenticity and context. The methodology used—involving analysis of the surrounding context, story structure, and language, along with additional source consultation—offers researchers practical approaches to uncover historical and social insights in personal writings. Personal writings capture emotional truths, cultural values, and real-life experiences that are often absent from official records, offering a more profound understanding beyond mere numbers or formal documents. This aligns with recent research recognizing personal writings as significant social facts rather than just questionable sources. The study illustrates how personal stories can reflect both individual perspectives and broader collective memories. For instance, memoirs from Afghanistan reveal common themes, such as friendship and confusion with local people, highlighting both shared military culture and unique challenges faced in that war. The research measures changes in storytelling, revealing

instances of self-censorship, particularly in letters. It also shows discrepancies between personal accounts and official records, indicating how memory can fade over time. Lastly, the way stories are told often varies with the audience, suggesting that public memoirs tend to use softer language than private diaries. Overall, these findings are significant for researchers across various fields. Historians need to judge personal writings as carefully as official documents, but using different rules—such as considering when the story was written, who it was for, how it was published, and whether it was censored —not just whether it is official. Sociologists and anthropologists explore how culture and social norms influence how individuals present themselves. A study found that most published authors are men, despite a significant presence of women in deployed forces, highlighting whose stories are commonly shared. Medical researchers noted that personal diaries often express negative feelings more openly than published memoirs, which tend to be more organized and reflective. This suggests that the type of document influences the emotions conveyed. Military organizations may notice that the memoirs gaining public attention, particularly from college-educated authors published by major publishers, reflect only a small slice of service members' experiences, impacting public perception of military life. The study aimed to establish a straightforward method for examining personal writings that recognizes their subjective nature while maximizing their evidentiary value. It concluded that a three-part approach—considering the context, the narrative, and the language, along with cross-referencing other sources- provides a valuable method for analyzing various personal stories. This approach balances understanding personal significance with the need for careful verification, showing that these considerations can coexist. However, there are limitations. Focusing exclusively on English-language memoirs about Afghanistan means the findings may not apply to other cultures, due to differences in storytelling practices and publishing practices.

In some cases, incomplete author information creates gaps in understanding the typicality of the authors. Relying on external sources for fact-checking makes it challenging to confirm stories about poorly documented events. Future research should apply this method to non-Western groups, non-military individuals, and historical periods before the advent of digital communication to assess its effectiveness and refine it. Despite these limitations, this research demonstrates that carefully studied personal writings provide unique insights into individual experiences in history. The developed method shifts the focus from questioning the reliability of personal stories to exploring how to use them effectively, given their unique aspects and constraints. This approach helps researchers capture how people and groups perceive and remember the events that shape their lives, enriching our understanding of history as both official occurrences and authentic human experiences.

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CULTURAL INFLUENCES ON PREGNANCY CARE AMONG RURAL WOMEN IN BANGLADESH: AN APPLICATION OF THE HEALTH BELIEF MODEL

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Abstract

Pregnancy extends beyond a purely biomedical event and is deeply embedded within social and cultural constructions. Although the use of biomedical services has increased in rural Bangladesh, decision-making around pregnancy care remains complex and multidimensional. This study addresses a significant gap by examining how rural women's beliefs and lived experiences shape their engagement with care facilities. Guided by the Health Belief Model (HBM), the research critically analyses women's health-seeking behaviours, perceived risks, and behavioural orientations. A phenomenological qualitative design was employed, using purposive sampling to recruit 20 participants. Data were collected through in-depth interviews and thematically analysed to identify recurring patterns related to beliefs and care-seeking practices. The findings align with the HBM's three core dimensions- preventive health behaviour, sick-role behaviour, and utilization of health services. Findings revealed that, in rural contexts, elder women often hold primary decision-making authority, and their socio-cultural norms and prior experiences strongly influence care-seeking patterns, preferred health services, dietary practices, and reliance on traditional healers (*Kabiraj*). The perception of pregnancy as a natural, non-medical process- rooted in longstanding cultural beliefs- contributes to reduced uptake of routine biomedical check-ups.

Keywords: Pregnancy, Cultural beliefs, Care-seeking beahviour, Health Belief Model, Bangladesh.

TRANSLATION OF STYLISTIC NUANCES IN FAIRY TALES

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Abstract

The study highlights that successful translation strategies for stylistic elements depend on the ability of the adapted text to evoke the desired associations and emotions in the minds of the target audience. Translations that fail to establish an emotional or cultural connection through their stylistic choices are less likely to succeed in captivating readers. This is particularly relevant in a globalized context, where literary works traverse diverse cultural and linguistic environments.
The findings reveal the need for interdisciplinary collaboration among linguists, literary scholars, and translators. Linguists provide the expertise required for accurate and culturally sensitive translations of stylistic elements, while literary scholars ensure that the artistic intent and aesthetic value are preserved. Translators, in their pivotal role, synthesize these insights to craft a coherent and compelling Ukrainian rendition.
The research also offers practical implications for professionals involved in the translation of literary works. It highlights the importance of conducting thorough cultural research to understand the preferences and sensitivities of the target audience when translating stylistic nuances. Creative linguistic techniques, such as the skillful use of metaphors, symbolism, and wordplay, are recommended to maintain the original author's essence while adapting it to the local context. Additionally, reader feedback and literary critique are emphasized as essential steps in evaluating the effectiveness of translated stylistic choices. By gathering insights and making iterative improvements, translators can enhance the artistic success of their renditions in target markets.
In conclusion, this research underscores the critical role of translation in bridging cultural gaps and enabling literary works to expand their global presence. It provides valuable insights into the strategies, techniques, and considerations required for effective translation and adaptation of the stylistic palette in fairy tales. The study serves as a resource for linguists, translators, and literary scholars, offering a structured approach to navigating the complexities of literary translation in an interconnected world. Furthermore, it highlights areas for future exploration, including the impact of translation quality on reader engagement and the long-term literary legacy of translated works, as well as the development of advanced tools to support the nuanced translation of stylistic elements. The findings reinforce the importance of interdisciplinary collaboration and innovation in achieving culturally sensitive and commercially successful literary translations.

Keywords: translation, fairy tales, stylistics.

AN ANALYSIS OF THE POEM *I HEARD A BIRD SING* BY OLIVER HERFORD

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Abstract

The purpose of this paper is to analyse the poem *I Heard a Bird Sing* by American poet Oliver Herford (1863–1935) based on literary studies, and especially reader-response criticism, and on psychology. Reader-response criticism makes us aware of how we react emotionally to any text we read and to how we rely on our background knowledge to analyse any text we read. The poem by Herford has been found on online social media and on various websites in relation to the way we feel during the month of December. When we hear a bird singing, we can hand on to the hope that spring is to come and that nature will return to life again: "I heard a bird sing/ In the dark of December./ A magical thing/ And sweet to remember." While in winter we expect nature to die, in this poem we witness an entirely unexpected reality. We start thinking of spring: "We are nearer to Spring/ Than we were in September." The poetic persona looks forwards to spring and imagines it is getting closer with the passage of time. The poetic persona clings to the idea that "I heard a bird sing/ In the dark of December." Winter and spring become associated with stages in human life, old age and young age, respectively, as well as psychological states, depression and hope, respectively.

Keywords: psychology, depression, renewal, emotions.

INTRODUCTION

Literary and artistic works deal with various life experiences. We are told, in popular psychology articles, that reading can help us with our problem-solving skills, just like watching films, since we can resonate with the characters and life situations and find some answers and insights as to how we may solve various issues we are confronted with. We can also gain some insight into our psychology, feelings, and ways of thinking when we read a story or watch a film. The characters may be better at expressing what we cannot and with coming to terms with various emotions and relationships with the others. Poetry is a way of exploring our inner world as well, since it is often focused on the inner world and workings of the mind. Some novels include introspective characters as well. Even if we do not literally manage to solve our issues once we read or watch a film, at least we may feel some comfort since we realize that we are not the only ones feeling or thinking or even behaving in certain ways. Once we realize that we are not alone we may feel more at ease and focus on something else than on what makes us uncomfortable. It is emotionally reassuring when we talk to a friend or even to someone we do not know who tells us that they feel exactly

the same way as we do about certain things. Literature and the arts become means of better dealing with our issues, be it only by learning how to put our emotions and thoughts into words. Literature and the arts become means of communication. It is as if we are talking to or listening to other people, and when what they say brings for us some unexpected insight. We can access different perspectives and different ways of dealing with the same issues we are confronted with.

It is well known that the winter season can lead us towards feeling less optimistic, due to the short days and absence of sunlight throughout the day. It is usual for us to hope for the revival of nature through the natural cycles, from autumn and winter towards spring. Nature can regenerate and offer us hope.

This is a common experience, which is present in cultural products such as poems and stories. Popular psychology articles also explain this universal type of experience. We react to our surroundings. According to environmental psychology (Mehrabian & Russell, 1974), we always have an emotional reaction to everything around us. The setting offered by the seasons is one such examples. The seasons change not only the way the natural world looks like, but also our emotions and perspective on everyday life. Nature does interfere with the way we function and think even in urban areas.

The way the seasons and the weather influence us is a topic of concern to eveyone, since our daily activities and overall state of well-being can be influenced. We try to find ways in which to solve these problems, yet there is not one clear solution, since eveyone is different and can cope differently with these issues.

The poem *I Heard a Bird Sing* by American poet Oliver Herford, chosen for analysis in this paper, makes reference to the common experience of our reaction to the seasons, in particular to winter and spring. Oliver Herford (1863–1935) was born in England. His family moved to Chicago and then to Boston in 1877, and 1882, respectively. Oliver Herford studied in the US, in England, and in Paris. He lived until the end of his life in New York. He was a humourist, to the point where he was considered an American version of Oscar Wilde. This can make us expect that he is a careful observer of people and of everything going on around him. The poem chosen for analysis in this paper, however, seems serios and not humorous, showing the wide array of human experience he could capture in his works.

MATERIALS AND METHODS

The poem chosen for analysis is two stanzas long and it will be analysed based on textual analysis. The main reading approach is that of reader-response criticism, since it relies on the readers' emotional reaction to the text and on the way in which they rely on their background knowledge in order to understand and interpret the text (Mart, 2019). Background knowledge can include both educational background and personal life experience. The author of the poem can be seen as an interlocutor wishing to communicate with us readers his experience. The experience of reacting to wintertime and to the thought of spring is a well understood one, and he is expecting readers to resonate with him.

The first stanza starts from the personal point of view of the author, while the second stanza includes references to a group, made up of the author and of his readers, suggesting that readers

should agree with him and resonate with him regarding the experience and emotions decsribed in the poem.

The first stanza refers to a December which is described as *dark*. A singing bird contrasts with the darkness of the month of December. A state of hope is alluded to in the first two lines, while in the second two lines this is confirmed and reinforced, since the singing bird is something magic and also sweet, as well as bringing comfort to the persons remembering the bird singing:

I heard a bird sing
In the dark of December.
A magical thing
And sweet to remember. (Herford, 2025)

Sometimes, it is only the memory of something pleasant which can bring us emotional comfort, in the absence of the real experience. A bird singing in December, on a dark day, when readers understand that the poetic persona is feeling down, can clearly bring some sense of hope that spring may be close by. Since the bird is not discouraged by the darkness of winter in December, readers try to feel the same way. They hope that the bird may feel that more beautiful days can come in December or in the winter months to follow, when they can believe that spring is here already. December is the first month of winter and, once the beginning of winter is a heavy, cold, dark one, this can only make us think ahead in a pessimistic way. We may feel discouraged, imagining that there is more of such dark days to come, and that the months that follow can continue with the same heavy winter. However, the bird may be a clue or a sign that this may only be a temporary impression. Human beings hope that birds, animals, plants and other elements in nature can feel when the weather is changing for better or for worse. Human beings tend to look for signs that the weather would improve and that they may soon enjoy the beautiful days again.

We know that the weather varies during all the seasons, and that the seasons are not clearly-cut. We may have bad weather in spring and summer, and nice weather in autumn and winter. The temperatures may be lower or higher than expected during all seasons. We may think about how trees and flowers bloom when it is the winter or autumn season, but the temperatures are higher than usual. We say that they have been tricked and afterwards their buds and flowers are going to fade when the cold weather returns. We see, however, that even plants and animals can react in one way or another to their surroundings, just as we human beings do according to environmental psychology (Mehrabian & Russell, 1974).

Further on, in the second stanza, the poetic persona grows more optimistic and tries to make us readers feel the same optimism:

"We are nearer to Spring
Than we were in September,”
I heard a bird sing
In the dark of December. (Herford, 2025)

Readers are familiar with the term positive thinking (Scheier & Carver, 1993), which is a term frequently present in self-help books and popular psychology books and articles. The idea that we

get closer to spring in December than during the first month of autumn, September, is a way of thinking ahead in an optimistic manner. Autumn itself is a well-known season associated with depression in poems from all over the world. The dark days and the leafless trees can only make someone's mood go down. Poems from all over the world include the frequent associations between autumn and loss of a dear person, between autumn and depression. The contrast between summer and autumn is very high, and autumn can only make us think of what is to come further, with winter. With autumn, the death of nature becomes more and more visible, while in winter this intensifies. In addition, we have, usually, the weather growing colder and colder. We can strat making associations and parallels between the seasons and the stages in the lives of human beings, with autumn being the passage towards old age, with winter being the moment of old age, with spring being the moment of childhood, and with summer being the moment of adulthood. Autumn is a season of contemplation and reflection, while winter seems already a season when we grow more and more depressed, as suggested ny the darkness of December, present in the poem by Herford (2025). The last two lines of the second stanza are exactly the same two lines in the beginning of the first stanza. These two lines refer to a feeling of both hopelessness and hope. The singing bird can help us get over the dark moods brought over by winter. The second stanza shows us, in the first two lines, an optimistic outlook on the future. In the first stanza, the darkness of December can only suggest that we expect even more darkness in the future.

As the human beings can reflect on past, present and future, focusing on one more than on the others at times, function of their emotions and of the impact various aspects have on them, they can start speculating, or feeling sad or hopeful based on the time they focus on. This poem by Herford (2025) shows us the poetic persona feeling sad and down at the present moment, while there is an element in nature marking the passage and connecting the poetic persona from sadness to hope: the singing bird. The singing bird reminds the poetic persona of springtime. It is a common-sensical association. While the poetic persona knows that the calendar says December, which is the first month of winter, he or she tries to hope for the best once he or she notices the bird singing doing so. This is, however, a personification of the bird, which is given all the atributes of a human being, thinking ahead with optimism. The bird becomes a projection of the human being. The human being tries to grow hopeful, thinking that time continues to pass and that winter will also end, just like all the other seasons before it, and the cycle of the seasons will continue, with spring.
The passage of time may entail sadness and loss, once the winter season is here, but also hope for renewal in the future, since the spring season will follow. The poetic persona may feel conflicted in-between these two attitudes and ways of thinking about the passage of time.

Zen Buddhism (Edwards, 1997) tells us that we need to accept that everything in this world is subject to change, and that eventually we are going to lose everything and everyone we love. We need to accept this state of affairs, and to come to terms with it. However, this is very difficult. This poses for all of us an emotional conflict which cannot be dealt with so easily. We know, on the one hand, that the Zen Buddhist philsoophy is the only way in which we can think, since this is the way of life here on earth, yet we are all human and have emotions and attachments to what and to whom we love. While the perspective of loss can make us depressed, we notice how nature has a way to comfort us, making us aware that it will go through rebirth with the arrival of spring.

The singing bird shows us how we can expect nature's rebirth, which is just as natural as its death during the winter season.
We could also start reflecting, after we read this poem, that the winter season is ambiguous, since, on the one hand, it is a time of nature's death, while, on the other hand, it is a time of winter holidays, with celebrations such as Christmas and New Year. Christmas is associated with joy and with the birth fo Jesus Christ from a religious perspective. It is a time when nature dies only to be reborn again, as it is during the iwnter season that eveything in nature regenerates and waits to start anew during spring.

Knowledgeable readers can draw parallels between the way winter and spring work as seasons in the natural world with the way human beings deal with loss and change. We can refer to the grief work stages (Freud, 1917), when we are in denial of our loss, when we grow indifferent towards it, when we rebel against it, and when we finally accept it. Grief work becomes a way to deal with ourselves and not just with the lost dear person. We need to redefine ourselves and start anew, gradually returning to our usual activities and connections with the others. Just like nature during winter, we need to take a break in order to be able to heal and to start anew. Grief work becomes a process of taking a break, of contemplation and reflection.

We can interpret the poem by Herford (2025) as a serious, reflective, philosophical poem, as we have seen so far in the interpretations put forth in this paper. At the same time, once readers are aware that Herford was a humorous writer, they may feel a hint of joking attitude, not just optimism. The bird singing in the darkness of the month of December seems to defy all norms, poking fun at all conventions associated with the low moods during the first month of winter. We know that everyone expects us to be unhappy and sad, even depressed, yet the singing bird defies everything, and challenges all previously held beliefs. After all, we are all in control of our own lives, and of our happiness. We need to learn how not to rely on others and depend on them when we think about what can make us happy. Popular psychology, as well as professional psychology, nowadays advises us to consider that we have the power to decide and to take action regarding what we want to do with our lives and take the necessary steps when we understand that we need to change something. Self-determination and agency are among the most important aspects we have in our lives. Nowadays, since we live in a predominantly individualist society, we are advised to rely on our own will power and wishes, as well as autonomy, in order to do all the changes we feel we need to do in order to be happy with our lives. It is, likely, difficult to control our moods, especially with the changing seasons and with various issues and events we come across in our lives. However, we need to be hopeful and to do eveything we can in order to feel that we are in control of our own lives. Our very way of thinking can suggest that we decide the course of our lives, and not the others. The power of social pressure is constantly diminishing. We are encouraged to decide for oursleves what we think can improve our well-being.

RESULTS

The analysis of the poem by Herford (2025) has shown us how we try to hang on to any clue in nature suggesting that eveything is going to improve. We tend to think ahead, in relation to our present time. In the present moment in the poem by Herford (2025), we likely feel a bit discouraged by the darkness of winter. However, we find reasons to hope for the better, starting with the singing bird and going on with spring being close by. We try to look for comfort when we are facing an

unpleasant situation, and, in the case of the poem analysed in this paper we can find that the singing bird becomes a means of comfort for the poetic persona. Its singing becomes a means of compensation in front of the harshness of the winter season. We may consider that it is a natural part of our coping mechanism with reality to protect ourselves using what can bring us hope and to further develop it into comforting fantasies. We can imagine that, further, the poetic persona can start daydreaming about the spring season, which cannot be far once we go deeper into winter. The passage of time is inevitable, and, in the case of winter, it can be beneficial. We may feel that time goes on too fast when we feel good, while it goes on too slow when we feel bad and we wish to escape from a certain situation. The poem can be considered a daydreaming moment, when the poetic persona begins to feel hopeful that better times can be about to come. The winter and spring seasons can stand for the poetic persona's moods, not only for the actual seasons in nature.

DISCUSSION

We may start moving on towards the idea that the external elements present in the poem analysed in this paper are only a pretext in order to allow to poetic persona to express him or herself. The external world, with its carefully chosen visual elements, is only a reflection of someone's inner world. We start from what is visible, concrete, and present in our external surroundings, and we end up with what belongs to our inner world and to our psychological and emotional reality.

CONCLUSION

The external elements in the setting of this poem are not randomly chosen and they are not descriptive only. They are all tied up to a psychological reality to which they allude. The readers' task is to reflect on the poem and to identify the meanings alluded to by the concrete, visual elements. The poem is, therefore, only a starting point in the readers' process of introspection, starting from a common life experience the poetic persona discusses

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ASSESSING THE SOCIAL ECONOMIC IMPACT OF AI IN INFORMAL LIVELIHOODS: PATHWAYS TO INCLUSIVE GROWTH AND WORKFORCE TRANSFORMATION

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Abstract

The informal economy, traditionally known as the "jua kali" sector, is not only the largest employer but also the most innovative in Kenya. However, the workers in this sector are the most left out in the ongoing digital revolution. The pervasive trend of integrating artificial intelligence (AI) across different sectors has led to a significant question about the informal sector, which constitutes the largest share of the labor force in Kenya, and how it will be impacted. This research, by exploring this question, aims to uncover if the implementation of AI in the informal sector leads to the creation of more inclusive opportunities or if it exacerbates the existing inequalities in Kenya's informal economy. The study will use mixed methods to collect data. In addition to the quantitative survey carried out in Nairobi, Kisumu, and Mombasa, qualitative interviews, focus group discussions, and detailed case studies of AI, powered platforms in digital lending, ride, hailing, and e, commerce were used to gather data. The study analyzes the impact of AI on access to finance, income generation, and the risk of job loss. It focuses particularly on women, youth, and persons with disabilities. The research is designed to serve as a tool for the development of policy proposals that are grounded in evidence and that can lead to an inclusive and safe transition to AI for all groups. This will be one way of making sure that technological progress is a source of fair distribution of benefits rather than piling up in the hands of a few in the rapidly growing informal sector in Africa.

Keywords: Informal economy, Artificial intelligence, Digital inclusion, & Labour inequality.

IMMERSIVE DESIGN INTERFACES: VIRTUAL REALITY (VR), AUGMENTED REALITY (AR), AND EXTENDED REALITY (XR) IN ARCHITECTURAL PRACTICE

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Abstract

Immersive design interfaces, encompassing Virtual Reality (VR), Augmented Reality (AR), and Extended Reality (XR), are rapidly transforming architectural practice by redefining how spatial concepts are conceived, visualized, evaluated, and communicated. Traditional architectural representation methods, such as 2D drawings, physical models, and static renderings, often limit stakeholders' ability to fully perceive spatial qualities, scale, and experiential performance prior to construction. Recent advancements in immersive technologies address these limitations by enabling real-time, interactive, and embodied engagement with architectural environments across all phases of the design lifecycle. This paper examines contemporary research published between 2021 and 2025 to analyse how immersive design interfaces are integrated into architectural workflows, their technical foundations, performance outcomes, and professional implications. Using a structured secondary research methodology based on peer-reviewed PDF sources, the study synthesizes empirical findings on design accuracy, stakeholder collaboration, decision-making efficiency, and experiential evaluation enabled by VR, AR, and XR systems. The results indicate that immersive interfaces significantly enhance spatial cognition, reduce design errors, and improve client understanding, and support iterative, evidence-based design processes. However, challenges persist, including high implementation costs, interoperability limitations with Building Information Modelling (BIM) platforms, hardware constraints, and skill gaps within professional practice. The paper concludes that immersive design interfaces represent a paradigm shift in architectural production, moving practice toward experiential, data-driven, and participatory design models. Strategic integration of XR technologies, supported by standardized workflows and professional training, is essential for realizing their full transformative potential in sustainable and intelligent built environments.

Keyword: Augmented Reality, Extended Reality, Virtual Reality.

INTRODUCTION




Architectural practice has historically relied on representational techniques, such as drawings, physical models, and visual simulations, to translate abstract design intentions into communicable and interpretable forms. These representational tools have long served as the primary medium through which architects conceptualize space, test ideas, an d communicate design intent to clients, consultants, and builders. From hand-drawn sketches and orthographic projections to scaled physical models, traditional methods have enabled architects to externalize spatial imagination and negotiate design decisions within professional and cultural contexts. However, these representations are inherently mediated and symbolic, requiring viewers to cognitively interpret spatial qualities such as scale, depth, materiality, and movement from abstract or reduced forms. With the advent of digital technologies, architectural representation has undergone significant transformation. Computer-Aided Design (CAD) systems introduced precision, efficiency, and ease of modification, while Building Information Modelling (BIM) further extended representational capacity by embedding geometric models with semantic, material, and performance-related data. BIM platforms have become central to contemporary architectural workflows, supporting coordination, documentation, simulation, and lifecycle management of buildings. Despite these advancements, most digital representations remain predominantly screen-based and observational. Designers and stakeholders typically engage with architectural models through flat displays, navigating complex three-dimensional environments using two-dimensional interfaces. This mode of interaction often limits embodied spatial understanding, as users must mentally translate screen-based representations into real-world spatial experiences. As architectural projects grow increasingly complex-driven by urban densification, sustainability imperatives, advanced building technologies, and diverse stakeholder involvement—the limitations of traditional representational media have become more pronounced. Contemporary architectural practice must address multifaceted performance requirements, including environmental efficiency, user comfort, accessibility, safety, and cultural responsiveness, often within tight economic and regulatory constraints. In this context, misinterpretation of spatial intent, scale, or experiential quality can lead to costly design revisions, construction errors, or stakeholder dissatisfaction. Traditional drawings and static visualizations frequently struggle to convey dynamic spatial phenomena such as movement, light variation, acoustic behaviour, and human interaction with space. Immersive design interfaces, encompassing Virtual Reality (VR), Augmented Reality (AR), and Extended Reality (XR), have emerged as powerful technological responses to these challenges. Unlike conventional representational tools, immersive interfaces enable users to experience architecture at human scale prior to physical realization, fostering a more intuitive and embodied understanding of space. Virtual Reality allows users to inhabit fully simulated environments, offering immersive spatial exploration, real-time

navigation, and interactive manipulation of design elements. Through VR head-mounted displays, designers and stakeholders can walk through buildings, perceive spatial proportions accurately, and evaluate design decisions from a first-person perspective. Augmented Reality extends immersive capability by overlaying digital architectural information onto physical environments. AR applications support context-aware visualization by allowing users to view virtual building components within existing sites, urban fabrics, or construction settings. This capability is particularly valuable for on-site decision-making, enabling architects and construction professionals to compare design intent with physical conditions, identify clashes, and verify construction accuracy in real time. Extended Reality (XR), as an integrative umbrella, combines VR, AR, and Mixed Reality (MR) technologies, enabling seamless transitions between physical and digital spatial experiences. XR frameworks support hybrid workflows in which designers can alternate between immersive simulation and real-world interaction without disrupting continuity of spatial understanding. Together, these immersive technologies shift architectural representation from passive viewing to active participation. Rather than observing architecture as an abstract object, users engage with space experientially, using bodily movement, gesture, and perception as integral components of design evaluation. This shift fundamentally alters how architects design, assess, and communicate built environments, emphasizing experience, interaction, and human-centred performance. The increasing adoption of immersive design interfaces is driven by rapid advancements in computing power, real-time rendering, game engines, motion tracking, and head-mounted display technologies. Platforms such as Unreal Engine and Unity have enabled high-fidelity architectural visualization with photorealistic lighting, materials, and physics-based interactions. At the same time, the availability of affordable VR headsets has lowered entry barriers for professional practice, making immersive technologies accessible beyond large firms and specialized visualization studios. In parallel, the integration of immersive environments with BIM data has significantly expanded their functional relevance. BIM-linked VR and XR systems enable real-time design iteration, performance simulation, and collaborative review across geographically distributed teams. Designers can evaluate spatial ergonomics, daylight penetration, circulation efficiency, and user experience through embodied interaction rather than abstract inference. Clients and non-expert stakeholders benefit from enhanced comprehension, leading to more informed feedback, improved trust, and reduced misinterpretation during early design stages. In construction and facility management, AR applications support clash detection, maintenance planning, and as-built verification directly on-site, improving accuracy and efficiency. Despite their transformative potential, immersive technologies also introduce notable challenges. High initial costs, technical complexity, interoperability limitations, and skill gaps remain significant barriers to widespread adoption. Many architectural firms struggle to integrate XR workflows seamlessly into existing design pipelines, particularly when aligning immersive platforms with BIM standards and established project delivery frameworks. Additionally, prolonged use of immersive environments raises ergonomic, cognitive, and health-related concerns, necessitating careful interface and workflow design. Against this backdrop, this paper critically examines the role of immersive design interfaces in contemporary architectural practice. By synthesizing recent scholarly literature, it evaluates technological architectures, application domains, performance outcomes, and professional implications, contributing to a deeper understanding of how VR, AR, and XR are reshaping architectural design culture and redefining the future of architectural representation and practice.

LITERATURE REVIEW

Recent literature consistently identifies immersive technologies as catalysts for a fundamental transformation in architectural representation, cognition, and design practice. Unlike conventional representational media, immersive systems enable designers to engage with architectural space experientially, activating perceptual, cognitive, and embodied modes of understanding that are otherwise constrained in screen-based or abstract representations. This shift marks a departure from architecture as a predominantly visual and symbolic discipline toward a multisensory, interactive, and experience-driven design paradigm. Early foundational studies highlighted Virtual Reality's (VR) capacity to enhance spatial understanding by enabling first-person exploration of architectural environments. Whyte (2018) argued that immersive environments fundamentally alter how architects perceive and reason about space by allowing direct engagement with scale, depth, and movement rather than relying on mental reconstruction from drawings or renderings. VR environments simulate occupancy and navigation, enabling users to experience architecture from the perspective of real occupants. This experiential immersion supports spatial cognition by aligning visual perception with bodily orientation, movement, and proprioception, thereby reducing the cognitive gap between representation and physical reality. Contemporary research significantly extends this early work, demonstrating that immersive environments enhance designers' ability to evaluate critical spatial attributes such as scale, proportion, materiality, and spatial sequence during early design stages (Portman et al., 2022). In contrast to static images or animations, VR environments allow continuous, real-time exploration of space, supporting iterative evaluation of design alternatives. Designers can assess how spatial qualities unfold dynamically as users move through environments, observe changes in lighting conditions, material textures, and visual connections, and test experiential hypotheses that would otherwise remain speculative. This capacity has proven particularly valuable in complex building typologies such as hospitals, educational facilities, and public spaces, where user experience, circulation clarity, and spatial legibility are central performance criteria. A substantial body of literature reports that VR-based architectural design environments reduce design errors and late-stage modifications. Du et al. (2021) demonstrated that immersive walkthroughs consistently identified spatial conflicts, circulation inefficiencies, and accessibility issues that were not detected through conventional two-dimensional drawings or three-dimensional screen-based models. Their findings suggest that VR functions as an advanced form of spatial verification, enabling early detection of design flaws before costly construction documentation and implementation phases. Similarly, Abdirad and Dossick (2022) found that VR-supported design reviews reduced change orders by up to 30% in complex building projects, highlighting VR's economic and managerial value. Rather than serving merely as a visualization tool for presentation purposes, VR emerges as a preventive design verification medium that enhances design quality, reduces risk, and improves project outcomes. The literature further emphasizes VR's role in supporting collaborative design decision-making. Immersive environments provide a shared spatial reference that aligns understanding among architects, engineers, and clients, reducing ambiguity inherent in technical drawings. This shared experiential platform improves communication efficiency and minimizes interpretive discrepancies across disciplines. As a result, VR-supported design reviews facilitate consensus-building and informed decision-making at earlier project stages, when design flexibility remains high and the cost of change is relatively low. Augmented Reality (AR) has gained increasing

prominence in architectural practice due to its unique ability to merge digital architectural information with real-world contexts. Unlike VR, which replaces physical surroundings with simulated environments, AR overlays digital models, annotations, and performance data onto existing physical spaces. This capability enables architects to visualize proposed structures within their actual environmental, urban, and cultural contexts, supporting context-sensitive design decisions. Wang et al. (2023) demonstrated that AR-enhanced site analysis significantly improved decision accuracy in façade orientation, massing strategies, and environmental responsiveness. By situating digital design elements within real-world conditions, AR allows designers to evaluate how buildings relate to surrounding structures, landscapes, and human activity patterns. In construction and post-design phases, AR-assisted assembly, inspection, and monitoring systems have shown measurable performance benefits. Chi et al. (2022) reported that AR-based construction guidance reduced installation errors, improved task efficiency, and enhanced on-site communication among multidisciplinary teams. By projecting digital construction information directly onto physical components, AR reduces reliance on paper drawings and manual interpretation, thereby minimizing misalignment between design intent and construction execution. AR applications also support real-time progress monitoring, quality assurance, and safety management, reinforcing their relevance across the building lifecycle. Extended Reality (XR) frameworks integrate VR and AR functionalities, enabling hybrid design workflows that support both immersive exploration and real-world interaction. XR systems allow designers to transition seamlessly between fully immersive simulations and augmented physical environments, preserving spatial continuity while adapting to different design tasks. Recent XR research emphasizes collaborative design environments in which multiple users interact simultaneously with shared architectural models. According to Fernando et al. (2024), multi-user XR platforms significantly improve interdisciplinary collaboration by enabling real-time design negotiation among architects, engineers, contractors, and clients. These environments support co-presence, gesture-based interaction, spatial annotation, and voice communication, fostering richer and more inclusive design dialogue. The participatory potential of XR environments has profound implications for architectural practice. By democratizing access to spatial understanding, immersive platforms empower non-expert stakeholders to meaningfully engage in design discussions. Clients can experience design proposals first-hand, provide informed feedback, and articulate preferences based on lived spatial experience rather than abstract descriptions. This shift enhances transparency, trust, and shared authorship in architectural decision-making processes. Integration with Building Information Modelling (BIM) remains a central theme in immersive architecture research. Several studies report that linking immersive environments with BIM databases enhances design consistency, coordination accuracy, and data integrity. Liu et al. (2023) found that BIM–VR integration enabled real-time synchronization of design changes across disciplines, reducing coordination errors and improving interdisciplinary alignment. By embedding semantic and performance data within immersive environments, BIM-linked XR systems extend beyond visualization to support data-driven evaluation of building performance, constructability, and lifecycle impacts. However, despite these advances, interoperability challenges persist. Differences in data formats, model complexity, rendering requirements, and update latency between BIM platforms and immersive engines complicate seamless integration. Many workflows still rely on manual data conversion or simplified geometry, leading to information loss and workflow inefficiencies. These technical limitations underscore the need for

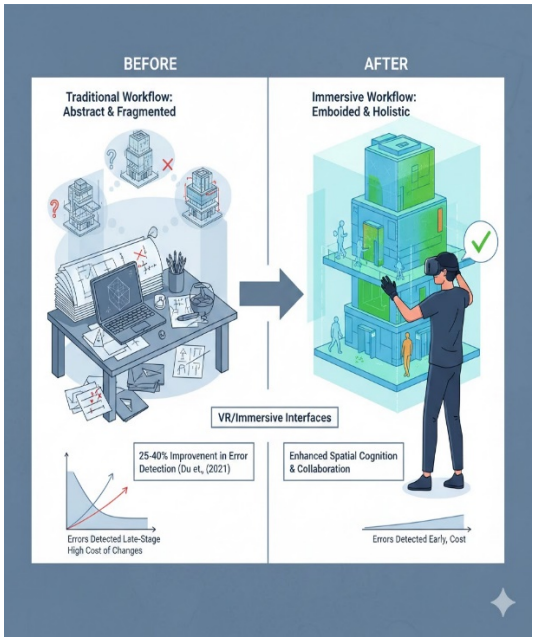
standardized data exchange protocols and more robust BIM–XR integration frameworks. From a pedagogical and professional development perspective, immersive interfaces have demonstrated strong learning benefits. Radianti et al. (2020) showed that VR-based architectural studios enhance students' spatial literacy, design confidence, and conceptual understanding. Immersive learning environments allow students to test design ideas at full scale, fostering experiential learning and reflective design thinking. Similarly, AR-supported construction training improves procedural knowledge retention and task performance by aligning instruction with physical action. In professional practice, immersive simulations support client engagement, stakeholder communication, and continuing professional development. Architects use VR and XR platforms to rehearse design scenarios, evaluate post-occupancy outcomes, and explore alternative design strategies in a low-risk environment. These capabilities align with broader shifts toward evidence-based and performance-oriented architectural practice. Despite these advantages, the literature also highlights significant limitations. Hardware costs, motion sickness, limited field of view, and user fatigue remain barriers to sustained adoption, particularly in smaller firms. Ethical concerns related to data privacy, digital authorship, and cognitive manipulation in immersive environments are emerging research areas (Slater & Sanchez-Vives, 2023). Additionally, many firms lack standardized workflows for XR deployment, resulting in fragmented, experimental adoption rather than systematic integration into professional practice. Overall, existing literature positions immersive design interfaces as transformative yet transitional technologies. While VR, AR, and XR have demonstrated substantial benefits in spatial cognition, collaboration, and design quality, their long-term effectiveness depends on technical maturity, interoperability standardization, ethical governance, and professional readiness to embrace experiential modes of architectural thinking.

MATERIALS AND METHODS

This study adopted a structured secondary research methodology based on systematic analysis of peer-reviewed, open-access PDF publications released between 2021 and 2025. Academic journal articles, conference proceedings, and authoritative technical reports focusing on immersive technologies in architectural practice were retrieved from databases including Scopus, Web of Science, ScienceDirect, IEEE Xplore, and SpringerLink. Search terms included combinations of "Virtual Reality in architecture," "Augmented Reality architectural practice," "Extended Reality design workflows," "BIM and VR integration," and "immersive architectural visualization." Inclusion criteria required that studies present empirical evidence, experimental evaluation, or systematic reviews related to architectural design, construction, or professional workflows. Purely speculative or non-architectural XR studies were excluded. Selected studies were analyzed using thematic synthesis. Data extracted included application domain, immersive technology type, hardware and software platforms, integration approach with BIM or CAD systems, reported benefits, and identified challenges. Performance indicators such as design accuracy, collaboration efficiency, error reduction, stakeholder comprehension, and workflow productivity were documented. Qualitative comparison matrices were employed to identify recurring patterns and divergences across studies. No primary experiments were conducted; the research relies exclusively on validated secondary data.

RESULTS AND DISCUSSION

Enhanced Design Evaluation and Error Reduction through Immersive Spatial Simulation



One of the most consistently reported outcomes in contemporary architectural research is the capacity of immersive design interfaces to significantly enhance early-stage design evaluation while reducing spatial and functional errors. Early design phases are critical in architectural practice, as decisions made at this stage have a disproportionate influence on project cost, performance, and user experience. Traditional representational tools, such as 2D drawings, static renderings, and even screen-based 3D models, often require architects and stakeholders to mentally reconstruct spatial relationships, a process prone to misinterpretation and cognitive bias. Immersive design interfaces, particularly Virtual Reality (VR), address these limitations by enabling designers to experience architectural space at full scale before physical realization. VR-based spatial simulations allow architects to inhabit and navigate proposed designs as embodied users rather than detached observers. By moving through virtual environments, designers can directly assess functional layouts, circulation patterns, spatial proportions, and sightlines in a manner that closely approximates real-world experience. This first-person engagement supports intuitive understanding of spatial sequences, thresholds, and transitions that are difficult to evaluate through abstract representations. As Whyte (2018) observed, immersive environments fundamentally alter spatial reasoning by aligning perception, movement, and cognition, thereby reducing the cognitive gap between design representation and built reality. Similarly, Portman et al. (2022) demonstrated that immersive exploration enhances designers' ability to evaluate scale, materiality, and experiential quality, particularly in complex or unfamiliar building typologies. The embodied nature of immersive evaluation plays a central role in reducing spatial errors during early design stages. Unlike conventional visualization workflows, where designers switch between multiple drawings and views to infer spatial coherence, VR environments present architectural space as a continuous, navigable whole. This continuity enables designers to identify conflicts in circulation logic, accessibility, visibility, and spatial adjacency that may not be apparent in fragmented representations. Empirical studies consistently show that immersive walkthroughs expose design inconsistencies and functional inefficiencies that remain undetected in traditional workflows. Du et al. (2021), for example, reported improvements of approximately 25-40% in spatial error detection when VR environments were employed during early design reviews. These errors included misaligned circulation routes, inadequate clearance for movement, poor spatial legibility, and conflicts between programmatic zones. Importantly, the benefits of immersive design evaluation extend beyond error detection to proactive design refinement. By enabling rapid iteration within immersive environments, architects can test alternative layouts, adjust spatial dimensions, and evaluate experiential outcomes in real time. This iterative capacity supports evidence-based decision-making, allowing designers to validate design

hypotheses through experiential feedback rather than relying solely on intuition or precedent. As a result, immersive simulations function not merely as diagnostic tools but as generative environments that inform design development. The preventive value of immersive simulation is particularly significant in reducing downstream revisions and late-stage design changes. Errors identified during construction documentation or on-site execution often lead to costly change orders, schedule delays, and compromised design intent. By shifting error detection upstream, immersive interfaces reduce the likelihood of such disruptions. The findings of Du et al. (2021) suggest that early immersive reviews can substantially lower the frequency of late-stage modifications, improving overall project efficiency and cost control. This aligns with broader project management research emphasizing the economic benefits of early design validation. Furthermore, immersive evaluation enhances interdisciplinary communication during early design phases. Engineers, consultants, and clients participating in VR-based reviews gain a shared spatial understanding of design proposals, reducing ambiguity and interpretive discrepancies. This shared experiential reference supports more effective coordination and alignment of technical and experiential requirements, further minimizing the risk of spatial errors. Collectively, these findings position immersive simulation as a preventive design verification mechanism rather than a post-design visualization tool. By enabling embodied, full-scale exploration of architectural proposals, immersive interfaces improve spatial cognition, enhance design quality, and reduce the likelihood of costly late-stage revisions. As architectural projects continue to increase in complexity, the integration of immersive design interfaces into early-stage workflows represents a critical advancement in achieving more accurate, efficient, and human-centred design outcomes.

Improved Client Engagement and Interdisciplinary Collaboration via XR Environments

Another dominant theme emerging from the findings is the transformative impact of immersive design interfaces on client engagement and interdisciplinary collaboration within architectural practice. Traditional modes of architectural communication, such as drawings, static renderings, and technical reports, often place non-expert stakeholders in a passive interpretive role, requiring them to mentally reconstruct spatial and experiential qualities from abstract representations. This interpretive burden frequently leads to misunderstanding, uncertainty, and misalignment between design intent and stakeholder expectations. Immersive interfaces fundamentally alter this dynamic by enabling stakeholders to experience architectural proposals directly, thereby shifting participation from passive observation to active, experiential involvement. Immersive presentations using Virtual Reality (VR) and Extended Reality (XR) environments allow clients to navigate architectural spaces at full scale, perceive spatial proportions accurately, and understand relationships between form, function, and movement intuitively. This experiential engagement significantly improves clients'



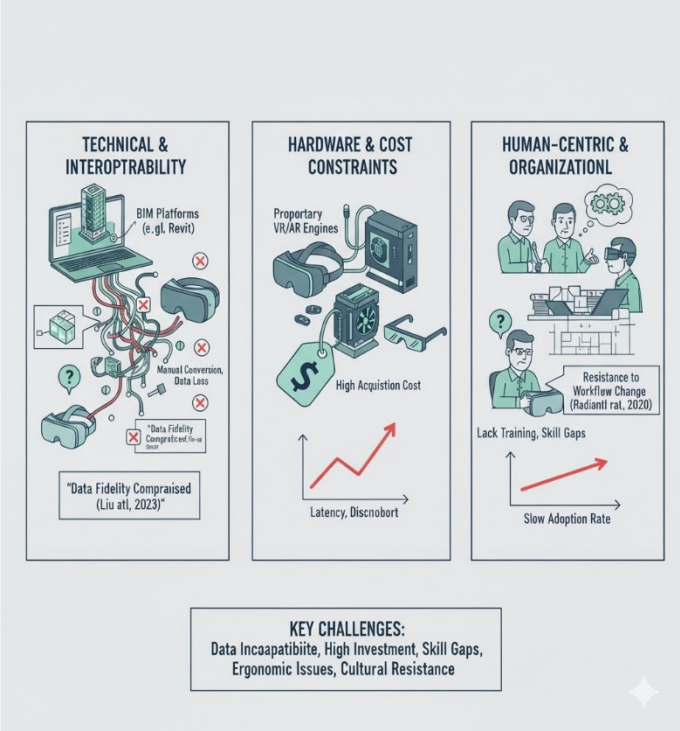
comprehension of design proposals, particularly for complex spatial configurations that are difficult to communicate through conventional media. Empirical studies indicate that clients exposed to immersive environments demonstrate higher confidence in design decisions and are more decisive during review processes. Abdirad and Dossick (2022) found that VR-supported design reviews reduced uncertainty among clients and contributed to more focused and constructive feedback, leading to fewer misunderstandings and a measurable reduction in late-stage design revisions. These outcomes suggest that immersive interfaces function as cognitive alignment tools, bridging the gap between professional design language and lay understanding. Beyond improving comprehension, immersive interfaces enhance the quality and specificity of client feedback. When clients can experience spaces firsthand, they are better positioned to articulate preferences related to scale, comfort, visibility, and spatial flow. This specificity allows architects to respond more accurately to client needs, improving design responsiveness and satisfaction. Moreover, early experiential feedback reduces the likelihood of major design changes during construction, when modifications are costly and disruptive. As a result, immersive engagement contributes not only to improved communication but also to more efficient project delivery. In addition to client engagement, immersive design interfaces significantly enhance interdisciplinary collaboration among architects, engineers, consultants, and contractors. Architectural projects increasingly require close coordination across multiple disciplines, each with distinct technical priorities and representational conventions. Traditional coordination methods often rely on fragmented drawings and models, which can obscure spatial interdependencies and lead to misinterpretation. Collaborative XR environments address this challenge by providing a shared, immersive spatial reference that supports real-time design negotiation and collective problem-solving. Multi-user XR platforms enable multiple participants to inhabit the same virtual model simultaneously, fostering a sense of co-presence despite physical separation. These environments support gesture-based interaction, verbal communication, and spatial annotation, allowing participants to point, manipulate, and discuss design elements directly within the shared space. Fernando et al. (2024) demonstrated that such collaborative XR platforms improve interdisciplinary alignment by enabling stakeholders to resolve design conflicts in real time, rather than through sequential and fragmented communication exchanges. This immediacy accelerates decision-making and reduces coordination errors, particularly in complex projects with tightly coupled systems. The participatory nature of immersive collaboration also supports more inclusive and transparent architectural decision-making. By enabling all stakeholders to engage with the same spatial information, XR environments reduce hierarchical barriers and promote shared authorship of design outcomes. Engineers and consultants can evaluate spatial implications of technical systems, while architects gain immediate feedback on constructability and performance considerations. Clients, in turn, become active contributors to design discussions rather than passive recipients of finalized proposals. Furthermore, immersive collaboration facilitates geographically distributed teamwork, an increasingly important consideration in globalized architectural practice. XR platforms enable remote participants to engage meaningfully in design reviews without compromising spatial understanding, supporting continuity of collaboration across locations and time zones. This capability enhances organizational resilience and adaptability, particularly in complex or fast-paced project environments. Collectively, these findings demonstrate that immersive design interfaces extend far beyond visualization enhancement. By transforming how clients and professionals engage with architectural proposals,

immersive technologies foster clearer communication, stronger interdisciplinary coordination, and more participatory decision-making processes. As architectural practice continues to evolve toward collaborative, user-centred, and performance-driven models, immersive interfaces play a critical role in aligning diverse stakeholders around shared spatial understanding and collective design intent.

Persistent Technical, Organizational, and Scalability Challenges in Immersive Practice Adoption

Despite the demonstrated potential and growing enthusiasm for immersive design interfaces, including Virtual Reality (VR), Augmented Reality (AR), and Extended Reality (XR), their widespread adoption in architectural practice remains constrained by a range of persistent technical, organizational, and human-centric barriers. One of the foremost challenges is interoperability. Architectural design processes increasingly rely on complex Building Information Modeling (BIM) platforms to manage detailed spatial, structural, and material information. However, current immersive engines often operate on proprietary data formats, which are not inherently compatible with mainstream BIM software. This discrepancy necessitates labour-intensive manual conversions, simplification of models, or the creation of intermediary files that can introduce errors, disrupt workflow continuity, and compromise data integrity. For instance, detailed parametric models with embedded metadata may lose fidelity when imported into XR visualization platforms, leading to inaccurate representations of spatial relationships or material properties (Liu et al., 2023). The need to reconcile these incompatible systems adds significant overhead to design workflows, often deterring firms from fully integrating immersive interfaces into their routine practice. Hardware constraints further exacerbate these adoption challenges. Immersive technologies typically demand high-performance computing systems, sophisticated graphics processing units, and specialized head-mounted displays or AR glasses. These devices often come with high acquisition and maintenance costs, creating a barrier for small and medium-sized architectural firms that may lack the necessary financial resources. Moreover, existing hardware often suffers from limited field of view, resolution constraints, latency issues, and insufficient processing power, which can affect both the realism and responsiveness of immersive environments. Such performance limitations not only reduce the effectiveness of design evaluations but can also lead to user discomfort during extended sessions, undermining the practical utility of VR/AR/XR in professional workflows. Beyond technological hurdles, human and organizational factors play a critical role in adoption. Integrating immersive interfaces requires not only technical knowledge but also a shift in professional practice. Many architectural professionals lack formal training in XR technologies, and current curricula in architecture schools and continuing professional development programs often provide only cursory exposure. As a result, firms may struggle to allocate personnel with the necessary skillsets to effectively deploy these tools, slowing adoption and limiting their integration into collaborative design pipelines (Radianti et al., 2020). Moreover, organizational culture and established workflows can resist change, particularly in firms with long-standing processes centered on 2D documentation and physical model-making. Successfully embedding immersive technologies into architectural practice, therefore, requires structured training, professional upskilling, and an organizational commitment to iterative experimentation and knowledge sharing. Ethical, ergonomic, and human factors present additional challenges. Prolonged immersion in VR or AR environments can induce

motion sickness, visual fatigue, or cognitive overload, which not only affects individual well-being but can also disrupt collaborative design activities (Slater & Sanchez-Vives, 2023). Ensuring user comfort and safety requires careful interface design, session management, and adherence to emerging ergonomic standards. Furthermore, the use of immersive interfaces often entails the collection and storage of detailed user and project data, raising concerns about privacy, intellectual property protection, and cybersecurity. Establishing robust ethical frameworks, data governance protocols, and secure information-sharing practices is therefore essential to build professional trust and ensure responsible deployment.



In summary, while immersive design interfaces hold substantial promise for transforming architectural practice by enhancing visualization, collaboration, and participatory design, their long-term impact depends on overcoming multifaceted challenges. Addressing interoperability issues, mitigating hardware limitations, bridging skill gaps through professional training, and implementing ethical and ergonomic safeguards are all crucial steps toward sustainable adoption. Without deliberate efforts to resolve these barriers, immersive technologies may remain supplementary tools rather than integrated, transformative components of architectural design. Consequently, the future of immersive interfaces in architecture hinges not only on technological advancements but also on coordinated organizational strategies and capacity-building initiatives that enable architects to leverage these tools effectively and responsibly.

CONCLUSION

Immersive design interfaces represent a profound paradigm shift in architectural practice, fundamentally altering how architects conceive, communicate, and evaluate built environments. Traditionally, architectural representation has relied on two-dimensional drawings, physical models, and renderings to convey spatial ideas and material relationships. While these methods provide essential technical and visual information, they often require significant abstraction and imagination from both designers and stakeholders. In contrast, immersive technologies, comprising Virtual Reality (VR), Augmented Reality (AR), and Extended Reality (XR), transform representation into direct experience, allowing architects and clients to inhabit and interact with spatial designs in real time. By creating an embodied sense of scale, proportion, and spatial sequencing, these tools enhance cognitive understanding of complex forms and environmental relationships that are difficult to fully grasp through conventional media alone. The interactive nature of immersive interfaces extends beyond individual cognition to collaborative and

participatory design processes. VR environments, for instance, allow multiple stakeholders to simultaneously explore a design, annotate features, and simulate modifications, fostering more informed and iterative decision-making. AR overlays, meanwhile, facilitate on-site visualization of proposed interventions, enabling architects, contractors, and clients to assess design feasibility within the context of existing structures. XR, which integrates virtual and augmented elements across physical and digital domains, supports hybrid workflows that bridge conceptual design, technical documentation, and construction management. Collectively, these capabilities accelerate the feedback loop between design intent and practical realization, reducing errors, improving coordination, and enhancing stakeholder engagement throughout the architectural lifecycle. Despite their transformative potential, the widespread adoption of immersive interfaces faces challenges that must be addressed through strategic integration. Effective deployment requires investment not only in hardware and software but also in professional training, knowledge transfer, and the development of standardized workflows. Architects must cultivate new competencies in spatial interaction, digital modeling for real-time visualization, and the orchestration of collaborative virtual environments. Simultaneously, interoperability between BIM platforms and immersive engines must be enhanced to ensure that design data maintains integrity across systems and facilitates seamless transitions between conventional and immersive workflows. Establishing such standards and practices is crucial to realize the full value of these technologies in everyday architectural practice. Conclusively, immersive design interfaces are not merely supplementary visualization tools; they are redefining the boundaries of design cognition, collaboration, and experience. By enabling architects and stakeholders to directly inhabit, manipulate, and evaluate spatial environments, VR, AR, and XR foster more informed decision-making, improved communication, and greater alignment between design intent and built outcomes. When strategically integrated through training, standardized processes, and interoperable platforms, immersive technologies are poised to become foundational instruments in the architecture of the future, transforming the way built environments are conceived, communicated, and realized.

Future Research

Future research in immersive design interfaces should prioritize long-term empirical studies that assess their implementation and impact in real-world architectural practice. While laboratory experiments and pilot projects provide initial insights, comprehensive longitudinal studies are needed to evaluate how VR, AR, and XR technologies influence design quality, collaboration efficiency, client engagement, and project delivery outcomes over time. Such research should consider diverse project scales, typologies, and organizational contexts to generate robust evidence of the practical benefits, limitations, and cost-effectiveness of immersive workflows. In parallel, there is a growing need to explore the integration of artificial intelligence (AI) with immersive environments. AI-driven XR systems have the potential to enhance generative design, predictive modeling, and adaptive simulation, enabling architects to rapidly iterate design alternatives and optimize performance parameters. The incorporation of haptic feedback and multisensory interfaces also warrants investigation, as these technologies can heighten the sense of presence, improve spatial cognition, and support more intuitive interaction with virtual models. Additionally, immersive design platforms offer opportunities to assess sustainability performance in real time, including energy efficiency, material use, and environmental impact. Future studies should also address the establishment of global standards for BIM-XR interoperability and the formulation of

ethical guidelines, including data privacy, user well-being, and accessibility, to ensure that immersive technologies are deployed responsibly and effectively across the architectural profession.

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IMPACT OF CLIMATE CHANGE ON GROUNDWATER STORAGE VARIABILITY IN THE DEEP AÏN BÉNI MATHAR AQUIFER (EASTERN MOROCCAN HIGH PLATEAUS): INSIGHTS FROM SATELLITE GRAVIMETRY

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Abstract

Water resource scarcity results from the combined effects of climatic variability and increasing anthropogenic pressures. In recent decades, climate change and intensified human activities have stimulated growing interest in monitoring, quantifying, and understanding the dynamics of water resources. The deep aquifer of Aïn Béni Mathar, covering more than 6,500 km², represents the principal source of drinking water in eastern Morocco. However, under a semi-arid Mediterranean climate, current groundwater reserves are increasingly insufficient to satisfy rising domestic and agricultural demands. In this context, assessing the impact of climate change on groundwater storage is essential. This study aims to characterize the spatio-temporal variability of groundwater storage and to evaluate the influence of climate change on water resources in the Aïn Béni Mathar deep aquifer over the period 2002–2023. The analysis integrates in situ observations with satellite-based measurements. Groundwater storage variations are primarily assessed through groundwater level monitoring, combined with hydrological, climatic, and groundwater flow models developed over the last two decades. The results reveal a generalized depletion of groundwater storage at an average rate of approximately −1 cm/year, corresponding to an annual volumetric loss of about −65 million m³. This decline is closely synchronized with major drought periods recorded in the region. These findings provide valuable insights into regional hydrogeological dynamics and highlight the urgency of implementing sustainable groundwater management strategies in the face of ongoing climate change.

Keywords: Satellite gravimetry (GRACE), groundwater storage, hydrogeology, climate variability, trend analysis, Mann–Kendall test.

CLIMATE CHANGE BEYOND REPRESENTATION: LITERATURE CONFRONTING ENVIRONMENTAL COMPLEXITY

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Abstract

Environmental humanities and ecocriticism provide crucial frameworks for understanding how literature engages with climate change, a complex scientific and cultural phenomenon that challenges conventional literary representation. Climate change resists straightforward depiction due to its vast temporal scales, spatial dispersion, and reliance on abstract scientific knowledge, requiring literature to grapple with slow violence, uncertainty, and the ethical dimensions of environmental crises. Contemporary texts often highlight gaps, fragmentation, silence, and formal experimentation, demonstrating literature's role in climate communication and its capacity to foster environmental awareness. By bridging literature and science, literary works offer critical cultural critique and encourage readers to reflect on human responsibility and the limits of understanding planetary processes. Through such engagement, literature contributes to climate discourse not by simplifying science but by mediating scientific knowledge, promoting interdisciplinary thinking, and reinforcing the importance of literary representation as a tool for confronting ecological challenges.

Keywords: Environmental Humanities; Ecocriticism; Climate Change; Literary Representation; Climate Communication; Literature and Science; Slow Violence; Environmental Awareness; Scientific Knowledge; Cultural Critique.

CLOUD COMPUTING–DRIVEN DIGITAL BUSINESS TRANSFORMATION: ARCHITECTURAL, TECHNOLOGICAL, AND STRUCTURAL PERSPECTIVES

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Abstract

The rapid evolution of cloud computing technologies has become a fundamental driver of digital business transformation, reshaping organizational architectures, technological infrastructures, and structural operating models. As enterprises increasingly adopt data-driven and digitally enabled strategies, cloud computing plays a pivotal role in enabling scalability, flexibility, and innovation across diverse business environments. This study examines cloud computing–driven digital business transformation through architectural, technological, and structural perspectives, providing a comprehensive framework for understanding its multidimensional impact.

From an architectural standpoint, the research analyzes the transition from traditional on-premise systems to cloud-native and hybrid architectures. It highlights the role of microservices, containerization, service-oriented architectures, and platform-as-a-service (PaaS) models in supporting modular, resilient, and scalable digital business ecosystems. These architectural paradigms facilitate faster deployment cycles, improved system interoperability, and enhanced responsiveness to market dynamics.

Technologically, the study explores how cloud computing integrates advanced technologies such as big data analytics, artificial intelligence, machine learning, and Internet of Things (IoT) platforms into business processes. Cloud-based infrastructures enable real-time data processing, intelligent automation, and advanced analytics capabilities, allowing organizations to transform raw data into actionable insights. The paper emphasizes the importance of cloud-enabled data management, security mechanisms, and performance optimization strategies to ensure reliability and compliance in distributed environments.

From a structural perspective, the research investigates how cloud adoption influences organizational structures, governance models, and business processes. Cloud computing supports agile organizational models, remote collaboration, and decentralized decision-making by reducing dependency on rigid IT infrastructures. This structural transformation enhances operational efficiency, accelerates innovation cycles, and enables organizations to respond effectively to evolving customer and market demands.

The study also discusses practical challenges associated with cloud-driven transformation, including data security, regulatory compliance, cost management, and system integration. Through analytical insights and practical examples, the research demonstrates how organizations can mitigate these challenges by adopting best practices in cloud governance, risk management, and strategic alignment.

In conclusion, cloud computing serves as a foundational enabler of digital business transformation by unifying architectural innovation, technological advancement, and structural change. The findings underscore that successful digital transformation requires not only technological adoption but also strategic reconfiguration of organizational and operational models. This research contributes to both academic and practical discourse by offering a structured perspective on how cloud computing can be leveraged to build resilient, intelligent, and future-ready digital business systems.

Keywords: Cloud Computing; Digital Business Transformation; Cloud Architecture; Organizational Structure; Emerging Technologies; Data-Driven Systems.

SIGN LANGUAGE RECOGNITION AND RESPONSE VIA VIRTUAL REALITY

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Abstract

This study presents a novel accessibility solution that combines Deep Learning techniques with Virtual Reality technology to enable effective communication for individuals with hearing and speech disabilities. Unlike conventional gesture recognition systems that struggle with insufficient training data, the proposed model leverages a comprehensive dataset containing 16 distinct images for each gesture, substantially improving both precision and dependability in recognition outcomes. The system targets Indian Sign Language alphabetic characters and commonly used words, providing users with dual interaction options: a static image upload mechanism for training purposes and a live camera feed for immediate gesture interpretation.

The underlying technical framework utilizes a Convolutional Neural Network implemented in Python, which analyzes spatial patterns to transform hand gestures into textual output. To enhance accessibility further, the architecture incorporates Unity-based Virtual Reality components that present recognized gestures through both visual displays and audio feedback. This integration of live computer vision processing with immersive visualization creates an adaptable, intuitive solution that supports learning environments and addresses everyday communication challenges.

Keywords: Convolutional Neural Networks (CNN) **,** Sign Language Recognition, Virtual Reality, Gesture Classification, Human-Computer interaction, Computer Recognition vision.

EFFECT OF MINDFULNESS STRESS REDUCTION ON ACADEMIC ACHIEVEMENT AMONG UNIVERSITY STUDENTS IN NAIROBI CITY COUNTY, KENYA

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Abstract

University students in urban campuses experience significant academic and psychosocial stress, which can adversely affect their psychological well-being and academic achievement. This study investigated the effect of Mindfulness-Based Stress Reduction (MBSR) on perceived stress levels and academic performance among undergraduate students in selected urban universities in Kenya. A quasi-experimental pretest–posttest control group design was employed. The study involved 100 undergraduate students randomly assigned to an intervention group (n = 50) and a control group (n = 50). Quantitative data were collected using the Perceived Stress Scale (PSS), the Mindfulness Attention Awareness Scale (MAAS), the Pittsburgh Sleep Quality Index (PSQI), and official Grade Point Average (GPA) records. Qualitative data were obtained through open-ended participant feedback at the end of the intervention. Quantitative data were analysed using descriptive statistics, paired and independent samples t-tests, and regression analysis. At baseline, no significant differences were observed between the intervention and control groups. After the eight-week MBSR programme, the intervention group demonstrated a significant reduction in perceived stress, with mean PSS scores decreasing from 27.6 (SD = 5.2) to 18.4 (SD = 4.7), $t(49) = 9.31$, $p < .001$. In contrast, the control group showed no significant change in stress levels. Mindfulness levels increased significantly among intervention participants, with MAAS scores rising from 3.1 (SD = 0.6) to 4.2 (SD = 0.5), $p < .001$. Sleep quality also improved, as indicated by a reduction in PSQI scores from 9.3 (SD = 2.1) to 6.1 (SD = 1.9). Academic performance showed modest but meaningful improvement in the intervention group. The mean GPA increased from 3.02 (SD = 0.41) at pretest to 3.28 (SD = 0.39) at posttest, while the control group recorded no significant GPA change. Regression analysis indicated that reductions in perceived stress significantly predicted GPA improvement ($\beta = –0.42$, $p < .01$), explaining approximately 18% of the variance in academic performance. Qualitative analysis supported the quantitative findings and revealed four dominant themes: improved emotional regulation, enhanced concentration, better stress coping strategies, and increased self-awareness. Participants reported feeling calmer during examinations, improved focus during lectures, better sleep patterns, and a healthier balance between academic demands and personal well-being. The study concludes that Mindfulness-Based Stress Reduction is an effective intervention for reducing stress and supporting academic functioning among university students. It recommends the integration of structured mindfulness programmes into university counselling and wellness services, as well as training counsellors and peer facilitators in mindfulness-based approaches. Further longitudinal research is recommended to assess long-term academic and psychological outcomes.

Keywords: mindfulness stress reduction, academic achievement.

Background

University students worldwide face mounting academic and psychosocial stress, but the challenge is particularly acute in urban campuses where overcrowding, financial strain, and competitive academic environments converge. In Nairobi City County, Kenya, students often juggle demanding coursework, limited resources, and socio-economic pressures, leading to heightened stress levels that negatively affect both mental health and academic achievement (Chen & Qi, 2025). Stress manifests in poor sleep quality, reduced concentration, and emotional exhaustion, all of which undermine learning outcomes.

Mindfulness-Based Stress Reduction (MBSR), pioneered by Kabat-Zinn (1990), offers a structured approach to cultivating present-moment awareness and non-judgmental acceptance. By integrating meditation, mindful breathing, and body awareness, MBSR enhances emotional regulation and resilience. Recent global studies confirm its effectiveness in reducing stress and improving academic functioning (Baumgartner & Schneider, 2023). In Kenya, where psychosocial support systems in universities remain underdeveloped, MBSR represents a promising intervention to address student well-being and academic persistence (Oketch-Oboth & Okunya, 2018).

Literature Review

Stress and Academic Achievement

Stress is a critical determinant of academic performance. Elevated stress impairs working memory, reduces concentration, and increases dropout risk. Studies in Kenya show a strong negative correlation between stress levels and GPA among university students (Oketch-Oboth & Okunya, 2018). Psychosocial support and coping strategies are therefore essential for sustaining academic achievement (Kenyatta University, 2024). Research consistently shows that stress negatively impacts academic performance (Pascoe et al., 2020). Elevated stress levels impair working memory, reduce concentration, and increase dropout rates.

Mindfulness in Higher Education

Mindfulness interventions have gained traction in higher education globally. Randomized controlled trials demonstrate that MBSR reduces academic stress, burnout, and enhances resilience (Chen & Qi, 2025). For example, Baumgartner and Schneider (2023) found that MBSR improved persistence and academic performance compared to active and no-treatment controls. These findings highlight mindfulness as a viable tool for supporting student success. Studies in Western contexts demonstrate that MBSR reduces stress and improves academic outcomes (Bamber & Schneider, 2016). Mindfulness enhances attention regulation, emotional stability, and sleep quality, all of which contribute to better learning outcomes.

African Context

Although mindfulness research in Africa is limited, emerging evidence suggests its relevance. Oyoo and Olendo (2025) emphasize mindfulness strategies as effective in strengthening student well-being in African universities. A systematic review of mental health interventions in African higher education highlights mindfulness as a scalable, culturally adaptable approach to address

rising mental health challenges (Jonas et al., 2025). Limited research exists on mindfulness interventions in African universities. However, studies in South Africa and Nigeria suggest that mindfulness practices can reduce anxiety and improve coping strategies among students (Nwoye, 2017).

Theoretical Framework

This study is grounded in Lazarus and Folkman's (1984) **Transactional Model of Stress and Coping**, which posits that stress arises when individuals perceive that environmental demands exceed their coping resources. Within this framework, stress is not simply a stimulus or a response but a dynamic transaction between the individual and their environment. University students in Nairobi City County often face academic demands, financial pressures, and psychosocial challenges that can overwhelm their coping capacity. When stress is appraised as unmanageable, it leads to negative outcomes such as anxiety, poor sleep, and diminished academic performance. Mindfulness-Based Stress Reduction (MBSR) directly addresses this imbalance by enhancing coping resources through present-moment awareness, emotional regulation, and acceptance.

Complementing this model is **Self-Regulation Theory** (Carver & Scheier, 1998), which emphasizes the role of attention and self-monitoring in goal attainment. MBSR strengthens self-regulation by training students to observe their thoughts and emotions without judgment, thereby reducing impulsive reactions to stressors and fostering sustained concentration on academic tasks. Improved self-regulation explains why participants reported enhanced focus during lectures and examinations, as well as better time management in balancing academic and personal responsibilities.

The framework also draws on **Cognitive Load Theory** (Sweller, 1988), which suggests that stress and anxiety consume working memory resources, leaving fewer cognitive resources available for learning. By reducing stress and promoting relaxation, MBSR frees up cognitive capacity, enabling students to process information more effectively and perform better academically. This theoretical lens helps explain the observed improvements in GPA among intervention participants.

Finally, the study is informed by **Positive Psychology** perspectives (Seligman & Csikszentmihalyi, 2000), which highlight the importance of cultivating strengths such as resilience, optimism, and well-being. Mindfulness practices align with positive psychology by fostering self-awareness, emotional balance, and a sense of calm, all of which contribute to flourishing in academic environments. The qualitative themes of improved emotional regulation and increased self-awareness resonate strongly with this perspective, suggesting that MBSR not only reduces negative outcomes but also promotes positive growth.

Taken together, these theoretical perspectives provide a robust conceptual framework for understanding the impact of MBSR on university students. The transactional model explains the stress-coping dynamic, self-regulation theory accounts for improved concentration and emotional control, cognitive load theory clarifies the link between stress reduction and academic performance, and positive psychology situates mindfulness within a broader context of student well-being. This integrated framework underscores the multidimensional benefits of MBSR and justifies its application in higher education settings in Kenya.

Methodology

This study adopted a quasi-experimental pretest–posttest control group design to evaluate the effect of Mindfulness-Based Stress Reduction (MBSR) on stress levels, mindfulness, sleep quality, and academic achievement among undergraduate students in Nairobi City County, Kenya. The design was chosen because it allowed for the comparison of outcomes between an intervention group and a control group while accommodating the practical constraints of conducting research in real-world educational settings. Random assignment of participants into groups helped reduce selection bias, though the absence of full randomization across the population is acknowledged as a limitation.

A total of 100 undergraduate students were recruited from selected urban universities. Participants were screened for eligibility based on enrollment status, willingness to commit to the eight-week program, and absence of severe psychiatric conditions that might interfere with participation. They were then randomly assigned to either the intervention group (n = 50) or the control group (n = 50). The intervention group participated in the structured MBSR program, which consisted of weekly two-hour sessions facilitated by trained mindfulness instructors. The program included guided meditation, mindful breathing, body scan exercises, and group reflection activities. Participants were also encouraged to engage in daily home practice for at least 30 minutes.

Data were collected using validated instruments. The **Perceived Stress Scale (PSS)** measured subjective stress levels, the **Mindfulness Attention Awareness Scale (MAAS)** assessed dispositional mindfulness, and the **Pittsburgh Sleep Quality Index (PSQI)** evaluated sleep quality. Academic performance was measured using official Grade Point Average (GPA) records obtained from university registrars. To complement quantitative data, qualitative feedback was collected through open-ended questions at the end of the intervention, allowing participants to reflect on their experiences and perceived benefits.

Data analysis involved both descriptive and inferential statistics. Paired samples t-tests were used to assess within-group changes from pretest to posttest, while independent samples t-tests compared differences between groups. Regression analysis was conducted to determine whether reductions in stress predicted improvements in academic performance. Qualitative data were analysed thematically, with responses coded into recurring themes such as emotional regulation, concentration, coping strategies, and self-awareness. This mixed-methods approach provided a comprehensive understanding of the impact of MBSR on student outcomes.

Results

The analysis revealed clear differences between the intervention and control groups following the eight-week MBSR program. At baseline, both groups were statistically comparable in terms of age, gender distribution, GPA, and stress levels, ensuring that any observed changes could be attributed to the intervention rather than pre-existing differences. Table 1 summarizes these baseline characteristics, showing no significant differences across the two groups.

Table 1. Baseline Characteristics of Participants

Variable	Intervention Group (n=50)	Control Group (n=50)	p-value
Age (years)	21.3 (SD = 2.1)	21.5 (SD = 2.3)	.72
Gender (% female)	56%	54%	.84
GPA (baseline)	3.02 (SD = 0.41)	3.05 (SD = 0.39)	.67
PSS (baseline)	27.6 (SD = 5.2)	27.4 (SD = 5.1)	.81

After the intervention, the results demonstrated a marked reduction in perceived stress among participants in the MBSR group. Their mean PSS scores decreased from 27.6 (SD = 5.2) at pretest to 18.4 (SD = 4.7) at posttest, a change that was statistically significant, $t(49) = 9.31$, $p < .001$. In contrast, the control group showed no meaningful change in stress levels, with scores remaining relatively stable (27.4 to 26.9). This suggests that MBSR was directly responsible for alleviating stress among the intervention participants.

Mindfulness levels also improved significantly in the intervention group. MAAS scores rose from 3.1 (SD = 0.6) to 4.2 (SD = 0.5), $p < .001$, indicating that students became more attentive to present-moment experiences and less prone to distraction. The control group, however, recorded no significant change in mindfulness, underscoring the unique effect of the intervention. Improvements in mindfulness were further reflected in qualitative feedback, where participants described feeling more focused during lectures and examinations.

Sleep quality, as measured by the PSQI, showed notable improvement among intervention participants. Their mean scores declined from 9.3 (SD = 2.1) to 6.1 (SD = 1.9), $p < .01$, suggesting fewer sleep disturbances and better rest. The control group's sleep quality remained unchanged, reinforcing the role of mindfulness in promoting healthier sleep patterns. Participants reported experiencing more regular sleep cycles and reduced pre-exam insomnia, which they attributed to relaxation techniques learned during the program.

Table 2. Pretest–Posttest Outcomes

Measure	Intervention Pretest	Intervention Posttest	Control Pretest	Control Posttest
PSS	27.6 (SD = 5.2)	18.4 (SD = 4.7)***	27.4 (SD = 5.1)	26.9 (SD = 5.3)
MAAS	3.1 (SD = 0.6)	4.2 (SD = 0.5)***	3.2 (SD = 0.5)	3.2 (SD = 0.6)
PSQI	9.3 (SD = 2.1)	6.1 (SD = 1.9)**	9.1 (SD = 2.0)	9.0 (SD = 2.2)
GPA	3.02 (SD = 0.41)	3.28 (SD = 0.39)*	3.05 (SD = 0.39)	3.07 (SD = 0.40)

***p < .001, **p < .01, *p < .05

Academic performance also improved modestly but meaningfully in the intervention group. Their mean GPA increased from 3.02 (SD = 0.41) at pretest to 3.28 (SD = 0.39) at posttest, $p < .05$. Although the change was not as dramatic as the reductions in stress or improvements in mindfulness, it nonetheless highlights the academic benefits of psychological well-being. The

control group's GPA remained virtually unchanged (3.05 to 3.07), further supporting the conclusion that MBSR contributed to academic gains.

Regression Analysis

Regression analysis confirmed that reductions in perceived stress significantly predicted GPA improvement ($\beta = -0.42$, $p < .01$), explaining approximately 18% of the variance in academic performance. This finding underscores the critical role of stress management in supporting academic success.

Qualitative Themes

The qualitative findings provided rich insights that complemented the quantitative data. Four dominant themes emerged: improved emotional regulation, enhanced concentration, better coping strategies, and increased self-awareness. Students described feeling calmer during examinations, more attentive in lectures, and more capable of balancing academic demands with personal well-being. These narratives illustrate how mindfulness practices translated into tangible academic and psychological benefits, reinforcing the statistical evidence.

Discussion

The findings of this study provide compelling evidence that MBSR is an effective intervention for reducing stress and enhancing academic functioning among university students in Nairobi. The intervention group demonstrated significant reductions in perceived stress, increases in mindfulness, improvements in sleep quality, and modest gains in GPA compared to the control group. These results are consistent with international research showing that mindfulness interventions improve psychological well-being and academic outcomes in higher education contexts (Bamber & Schneider, 2016; Pascoe et al., 2020). Importantly, this study extends such findings to the Kenyan context, where empirical evidence on mindfulness in higher education remains limited.

The reduction in stress levels observed among intervention participants is particularly noteworthy. Stress has long been identified as a barrier to academic success, impairing concentration, memory, and motivation. By cultivating present-moment awareness and non-judgmental acceptance, MBSR appears to have provided students with tools to regulate their emotions and cope more effectively with academic pressures. The regression analysis further confirmed that reductions in stress significantly predicted improvements in GPA, underscoring the direct link between psychological well-being and academic achievement.

Improvements in mindfulness and sleep quality also contributed to better academic functioning. Increased mindfulness likely enhanced students' ability to sustain attention during lectures and study sessions, while improved sleep quality supported cognitive performance and emotional stability. These findings align with prior studies demonstrating that mindfulness interventions improve sleep patterns and reduce insomnia among students (Chen & Qi, 2025). The qualitative feedback reinforced these outcomes, with participants reporting greater calmness during examinations, improved focus, and healthier lifestyle balance.

Despite the promising results, the study acknowledges several limitations. The quasi-experimental design, while robust, does not fully eliminate potential confounding variables. The sample size, though adequate for statistical analysis, was limited to urban universities in Nairobi, which may restrict generalizability to rural or international contexts. Additionally, the study measured outcomes over an eight-week period, leaving questions about the sustainability of benefits over longer durations. Future longitudinal research is needed to assess whether improvements in stress reduction and academic performance persist across semesters or academic years.

From a practical perspective, the findings highlight the importance of integrating mindfulness programs into university counselling and wellness services. Given the growing mental health challenges among students in Kenya and across Africa, MBSR offers a cost-effective, scalable, and culturally adaptable intervention. Training counsellors and peer facilitators in mindfulness techniques could expand access and ensure sustainability. Moreover, digital delivery of mindfulness practices through mobile applications could further enhance reach, particularly in resource-constrained settings.

In conclusion, this study demonstrates that MBSR is a valuable tool for supporting student well-being and academic success in Kenyan universities. By reducing stress, enhancing mindfulness, and improving sleep quality, MBSR contributes to a healthier and more productive learning environment. The integration of mindfulness into higher education policy and practice could play a pivotal role in addressing the psychosocial challenges faced by students and in fostering academic resilience in the face of growing demands.

Recommendations

Based on the findings of this study, several recommendations can be made to strengthen student well-being and academic achievement in Kenyan universities. First, institutions should integrate structured Mindfulness-Based Stress Reduction (MBSR) programs into their counselling and wellness services, ensuring that students have access to evidence-based interventions that reduce stress and enhance concentration. Second, universities should invest in training counsellors, peer mentors, and faculty members in mindfulness techniques, thereby creating a supportive ecosystem that normalizes stress management practices. Third, policymakers within the Ministry of Education should consider embedding mindfulness initiatives into national higher education strategies, recognizing their role in fostering resilience and academic persistence. Finally, future research should adopt longitudinal designs to examine the sustainability of MBSR benefits over multiple semesters, while exploring digital delivery methods such as mobile applications to expand access and scalability across diverse student populations.

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PSYCHOSOCIAL PREDICTORS OF PREGNANCY RELATED ANXIETY: A CASE STUDY OF PUMWANI MATERNITY HOSPITAL

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Abstract

Anxiety disorders are significantly more prevalent in women than men, and the likelihood of developing an anxiety condition in pregnancy is increased. One in five women will experience a level of anxiety in their pregnancy journey (Shariatpanahi et al., 2023). Pregnancy-related anxiety (PRA) is associated with adverse maternal and neonatal outcomes, yet limited empirical evidence from Kenya has examined its psychosocial determinants, particularly within urban public healthcare settings. This study investigated the psychosocial predictors of pregnancy-related anxiety among expectant women attending antenatal care at Pumwani Maternity Hospital, Kenya. Specifically, it examined the predictive role of self-esteem and perceived social support and assessed the prevalence of PRA. Guided by Bandura's self-efficacy theory, the study adopted a descriptive survey design. A systematic random sample of 70 pregnant women was drawn from an estimated monthly antenatal population of 700. Data were collected using validated instruments, including the Pregnancy Related Anxiety Questionnaire (PRAQ-R2), Rosenberg Self-Esteem Scale, and Oslo-3 Social Support Scale, and analysed using Microsoft Power BI. The prevalence of pregnancy-related anxiety was 48.57%. Self-esteem and perceived social support were significant predictors of PRA, with higher levels of both associated with lower anxiety ($p < 0.05$). The findings underscore the protective role of self-esteem and social support in reducing PRA.

Key Words: Pregnancy-Related Anxiety, Social Support, Self-esteem, Antenatal Anxiety.

1. Introduction

Anxiety disorders are among the most prevalent mental health conditions globally, affecting approximately 301 million people, with women experiencing a disproportionate burden (World Health Organization [WHO], 2022). Pregnancy, although commonly framed as a positive life event, involves substantial physiological and psychosocial changes that heighten vulnerability to mental health difficulties, particularly pregnancy-related anxiety (PRA) (Djidonou et al., 2019). PRA is characterized by persistent worry related to fetal health, childbirth, and parenting and overlaps with anxiety disorders recognized in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) (Bandelow & Michaelis, 2015).

Historically, research attention has focused more heavily on the postpartum period; however, emerging evidence suggests that anxiety and depression may be more pronounced during pregnancy than after childbirth (Biaggi et al., 2016). Antenatal anxiety has been identified as a significant predictor of postnatal depression across both high- and low-income contexts, underscoring the importance of early identification and intervention during pregnancy (Norhayati et al., 2015).

Globally, approximately one in five pregnant women experience anxiety symptoms, with prevalence estimates higher in low- and middle-income countries (LMICs) and across several African settings (Akinsulore et al., 2021; Nielsen-Scott et al., 2022). In Kenya, reported prevalence rates vary widely, reflecting contextual differences and methodological approaches, but collectively indicate that PRA represents a growing public health concern.

PRA is influenced by a range of psychosocial and contextual factors, including maternal age, education, marital status, pregnancy history, and social determinants of health (Adina et al., 2022; WHO, 2020). Notably, poor social support, stressful life events, negative pregnancy attitudes, and compromised interpersonal relationships consistently emerge as key predictors of anxiety during pregnancy (Henderson & Redshaw, 2013; Rubertsson et al., 2014). These findings highlight the protective role of social support and self-esteem in buffering psychological distress.

Despite this evidence, Kenyan studies have rarely examined self-esteem and perceived social support as predictors of PRA within large urban public maternity settings. This study addresses this gap by assessing the prevalence of PRA and examining the predictive role of self-esteem and social support among expectant mothers attending Pumwani Maternity Hospital. The findings aim to inform context-specific psychosocial interventions and strengthen the integration of maternal mental health services within antenatal care.

2. Literature Review

2.1 Self-Esteem as a Predictor of Pregnancy-Related Anxiety

Self-esteem refers to an individual's overall sense of self-worth and emotional competence and is a key psychosocial determinant of mental health (Leary & Baumeister, 2000). Low self-esteem has been consistently associated with heightened anxiety and depressive symptoms during pregnancy (Nery et al., 2021). Empirical evidence from diverse contexts, including Indonesia, Canada, Malaysia, China, and the United Kingdom, demonstrates that low self-esteem independently predicts PRA, even after controlling for demographic and obstetric variables (Chan et al., 2013; Dunkel Schetter et al., 2016; Jusoh et al., 2014). These findings position self-esteem as a psychological vulnerability factor and a potential target for early identification and preventive intervention during antenatal care.

2.2 Social Support as a Predictor of Pregnancy-Related Anxiety

Social support, encompassing emotional, instrumental, and relational assistance, plays a protective role in maternal mental health (Cohen & Wills, 1985). Studies from South Asia and sub-Saharan Africa consistently report that inadequate social support increases the risk of PRA, while strong support networks buffer stress and enhance coping during pregnancy (Nath et al., 2019; Tarafa et al., 2022; Van Heyningen et al., 2017). A systematic review and meta-analysis further confirmed an inverse relationship between perceived social support and prenatal anxiety (Bedaso et al., 2021), underscoring its relevance in low-resource settings.

2.3 Prevalence of Pregnancy-Related Anxiety

The prevalence of PRA varies widely across contexts, ranging from 13% in Uganda to over 50% in some low- and middle-income countries (Abegaz et al., 2022; Nath et al., 2019). In Kenya, available evidence remains limited and inconsistent, highlighting the need for localized research. This study addresses this gap by determining PRA prevalence and examining key psychosocial predictors among pregnant women attending Pumwani Maternity Hospital.

3. Theoretical Framework

PRA occurrence is strongly influenced by psychosocial factors, particularly self-esteem and social support. Bandura's self-efficacy perspective suggests that low self-esteem heightens vulnerability to anxiety by undermining confidence and coping capacity, while strong social support buffers stress and enhances emotional resilience. Social support further reinforces self-efficacy through reassurance, shared experiences, and practical assistance, reducing anxiety risk. This framework underpin the study's focus on self-esteem and social support as key predictors of PRA among pregnant women in Kenya.

4. Methods

4.1 Setting and Participants

A hospital-based cross-sectional study was conducted at Pumwani Maternity Hospital in Kamukunji Sub-county, Nairobi City County, Kenya. Pumwani is one of the largest public maternity hospitals in sub-Saharan Africa, serving a diverse urban population and recording approximately 700 antenatal care visits per month. This high patient volume and socioeconomic diversity made it an appropriate setting for examining psychosocial predictors of PRA.

The study targeted pregnant women aged 18 years and above attending ANC services during the study period. Women who were unwell, unable to respond, or unwilling to participate were excluded. A systematic random sampling technique was used to recruit 70 participants, representing 10% of the estimated monthly ANC attendance, consistent with sampling recommendations by Mugenda and Mugenda (2013).

4.2 Study Measures

PRA was assessed using the Pregnancy-Related Anxiety Questionnaire–Revised (PRAQ-R2), a validated 10-item instrument scored on a 5-point Likert scale (0–4), with total scores ranging from 0 to 40. A cut-off score of ≥13 indicated the presence of PRA. Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES), a 10-item scale assessing global self-worth, with scores below 15 indicating low self-esteem. Social support was measured using the Oslo 3-item Social Support Scale (OSSS-3), with scores categorized as poor (3–8), moderate (9–11), or strong (12–14).

4.3 Procedure

Ethical approval was obtained from KCA University Ethics and Research Committee (KCAU SERC), NACOSTI, Nairobi County Authority and Pumwani Research Committee. Written informed consent was secured from all participants. Data were collected in March 2025 using structured questionnaires administered by the researcher and a trained assistant.

4.4 Data Analysis

Data were entered into Microsoft Forms and analyzed using Microsoft Power BI. Descriptive statistics summarized participant characteristics and PRA prevalence, while Pearson's correlation analysis examined relationships between PRA, self-esteem, and social support. Statistical significance was set at $p < .05$.

5. Results

5.1 Demographic Characteristics

A total of 70 pregnant women participated in the study. Most respondents were aged 21–31 years, with 25 years being the most frequent age (15.71%). The majority were married (82.86%), and 41.43% were primigravida. Over half of the participants were in their third trimester (57.14%). Regarding employment, 35.71% were unemployed, while 32.86% were self-employed. Most participants had attained secondary education (40.00%) or college/vocational training (41.43%).

Table 1: Demographic Characteristics (N=70)

Demographic Characteristics		Frequency, N (%)
Age	18-24	34 (48.57%)
	25-31	37 (52.86%)
	32+	3 (4.29%)
Marital Status	Married	58 (82.86%)
	Single	12 (17.14%)
Number of Children	0	29 (41.43%)
	1	21 (30.00%)
	2	14 (20.00%)
	3	6(8.57%)
Pregnancy Stage	Third trimester	40 (57.14%)
	Second Trimester	17 (24.29%)
	First Trimester	13 (18.57%)
Employment Status	Employed	22 (31.43%)
	Self-Employed	23 (32.86%)
	Unemployed	25 (35.71%)
Education Level	College/Vocational training	29 (41.43%)
	Primary School	8 (11.43%)
	Secondary School	28 (40.00%)
	University	5 (7.14%)

5.2 Self-esteem as a Predictor of PRA

Most respondents demonstrated normal self-esteem levels (75.71%), while 18.57% reported high self-esteem and 5.71% low self-esteem. Regression analysis indicated that self-esteem significantly predicted pregnancy-related anxiety ($p = .007$). Pearson correlation analysis showed a modest negative relationship between self-esteem and PRA ($r = -0.26$), indicating that higher self-esteem was associated with lower anxiety levels.

Table 2 Self-esteem Levels

Self-esteem categories	Respondents	Proportion
Low Self-esteem (Below 15)	4	5.71%
Normal Self-esteem (15-25)	53	75.71%
High Self-esteem (Above 25)	13	18.57%

5.3 Social Support as a Predictor of PRA

Perceived social support was moderate among 41.43% of respondents, poor among 34.29%, and strong among 24.29%. Regression analysis showed that social support significantly predicted PRA ($p = .006$). A modest inverse correlation was observed between social support and PRA ($r = -0.27$), suggesting that stronger social support was associated with reduced anxiety.

Table 3 Social Support Levels

Social support categories	Respondents	Proportion
Poor Support (3-8)	24	34.29%
Moderate Support (9-11)	29	41.43%
Strong Support (12-14)	17	24.29%

Coefficient Matrix

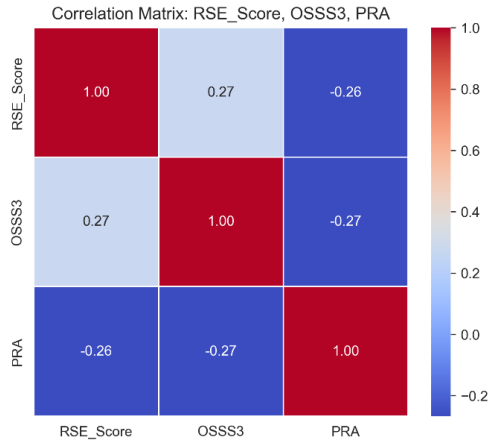


Table 4: Multiple Linear Regression Analysis

Predictor	Coefficient	p-value	Interpretation
Intercept (Constant)	26.25	<0.001	Baseline PRA score
RSE_Score	-0.31	0.007	Higher self-esteem reduces PRA
OSSS3	-0.59	0.006	Higher social support reduces PRA

Regression Equation:

$$PRA = 26.25 - 0.31(RSE\ Score) - 0.59(OSSS3\ \ Score)$$

5.4 PRA Prevalence

Based on the PRAQ-R2 cut-off score (≥13), 48.57% of participants met the criteria for pregnancy-related anxiety, while 51.43% did not. This indicates a high prevalence of PRA among women attending antenatal care at Pumwani Maternity Hospital.

Table 5: Prevalence of PRA

PRA categories	Respondents	Proportion
No PRA (Below 13)	36	51.43%
PRA Present (13 or above)	34	48.57%

6. Discussion

This study demonstrated that self-esteem and social support significantly predicted pregnancy-related anxiety (PRA), with higher levels of both associated with lower anxiety. These findings align with prior studies identifying low self-esteem as a risk factor for antenatal anxiety (Jusoh et al., 2014; Orth & Robins, 2014) and highlighting the protective role of social support during pregnancy (Chan et al., 2013; Waqas et al., 2015). However, some studies report lower PRA prevalence in similar settings, suggesting contextual and methodological variability (Bindt et al., 2012; Redinger et al., 2018). The high PRA prevalence observed may reflect inclusion of all trimesters and external stressors affecting healthcare access. While validated tools strengthened

measurement reliability, the cross-sectional design and single-site sampling limit causal inference and generalizability.

7. Conclusions and Recommendations

This study found a high prevalence of pregnancy-related anxiety (48.57%) among women attending antenatal care at Pumwani Maternity Hospital, highlighting a substantial mental health burden in this urban public healthcare setting. Self-esteem and perceived social support emerged as significant psychosocial predictors of PRA, with higher levels of both associated with lower anxiety. These findings confirm the protective role of psychological and social resources during pregnancy and support the study's hypotheses.

Although the regression model explained a modest proportion of variance, its overall significance suggests that self-esteem and social support are meaningful contributors to PRA, alongside other unexamined factors. Based on these findings, the study recommends routine mental health screening during antenatal care, integration of psychosocial interventions such as CBT-based counselling, and strengthening of family- and community-based support systems. Future research should incorporate additional psychosocial, biological, and contextual variables using longitudinal designs to better explain and address pregnancy-related anxiety in Kenyan settings.

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SOCIOECONOMIC FACTORS AS CORRELATES OF POSTGRADUATE STUDENTS SELF ACTUALIZATION: A CASE OF KCA UNIVERSITY, NAIROBI

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Priscilla Gachigi
Zipporah Okoth

Abstract

Background: Self-actualization represents the highest level of psychological development and is central to personal fulfillment and optimal functioning. Postgraduate education is often viewed as a pathway toward self-actualization; however, postgraduate students frequently encounter academic and financial challenges that may hinder their psychological growth. Despite increasing enrolment in postgraduate programmes in Kenya, limited empirical evidence exists on the levels of self-actualization and its socioeconomic correlates among postgraduate students. This study examined the socioeconomic correlates of selfactualization among postgraduate students at KCA University, Nairobi, Kenya. Specifically, the study assessed the levels of self-actualization and examined the relationship between academic factors, financial factors, and self-actualization. Guided by Maslow's Hierarchy of Needs theory, the study adopted a descriptive correlational research design. A stratified random sample of 94 postgraduate students was selected from various master's programmes at KCA University. Data were collected using a structured questionnaire measuring self-actualization, academic factors and financial factors. Data were analysed using descriptive statistics, Pearson's correlation analysis and multiple linear regression analysis. The findings revealed that postgraduate students exhibited moderate levels of self-actualization. Academic factors and financial factors were significant predictors of selfactualization, with favourable academic conditions and financial stability associated with higher levels of self-actualization ($p < 0.05$). The findings highlight the importance of strengthening academic support systems and addressing financial challenges to promote self-actualization among postgraduate students.

Key Words: Self-Actualization, Academic Factors, Financial Factors, Postgraduate Students

1. Introduction

Postgraduate education in Kenya has grown significantly in recent years, reflecting the country's strategic focus on building a knowledge-based economy (Republic of Kenya, 2017). These programs aim to enhance students' intellectual, professional and personal development; however, they present unique challenges that may impede self-actualization, defined as the realization of one's full potential, including autonomy, purpose and personal fulfillment (Maslow, 1943). Self-actualization among postgraduate students is influenced by the demands of advanced coursework, independent research and critical thinking, which can simultaneously foster growth and present substantial academic challenges (Anderson, 2016).

Existing research on postgraduate students often examines factors affecting their academic experience in isolation, overlooking the combined influence of academic, financial and social determinants. Studies have highlighted the impact of academic pressures on student performance and well-being (El Ansari, 2010), while others have emphasized organizational policies and academic stressors as primary influences (Levecque, 2021). Research also shows that financial constraints, limited mentorship and inadequate institutional support significantly shape students' personal and academic development (Evans, 2018; Sophia, 2021). Collectively, these studies suggest a tendency to focus on completion rates and academic success as outcomes of stress, neglecting the underlying determinants of students' self-actualization. Consequently, a comprehensive understanding of the holistic factors influencing selfactualization remains limited.

Globally ppostgraduate students experience compounding pressures from academic demands, financial limitations and restricted social support. Financial stress arising from high tuition fees, research costs and living expenses can compromise students' ability to focus and participate fully in their programs, thereby hindering personal and academic fulfillment (Clark, 2018). Alternatively, access to scholarships, grants and institutional financial support facilitates engagement and enables students to pursue their academic and personal goals effectively (Green, 2019).

Despite emerging research on individual factors affecting postgraduate students, limited attention has been given to how academic, financial and social determinants collectively influence self-actualization. This study seeks to address this gap by examining these factors in relation to postgraduate students' ability to achieve their full potential at KCA University. The findings aim to inform institutional strategies that promote holistic support, enhance academic engagement and foster personal growth among students.

2. Literature Review

2.1 Levels of Self-Actualization among Postgraduate Students

Self-actualization refers to the realization of an individual's fullest potential and is characterized by autonomy, purpose, personal growth and fulfillment (Maslow, 1943). Within postgraduate education, self-actualization is reflected in students' ability to engage meaningfully with advanced academic work, research activities and professional development. Existing literature suggests that postgraduate study environments provide opportunities for intellectual growth while simultaneously exposing students to pressures that may influence their sense of fulfillment and self-development (Burke, 2010). Empirical studies have shown that sustained academic demands and uncertainty surrounding progression and completion can affect students' motivation, self-perception and overall psychological development (Ryan, 2020). These findings highlight self-actualization as an important developmental outcome within postgraduate education that warrants focused empirical attention.

2.2 Academic Factors as Correlates of Self-Actualization

Academic factors, including coursework intensity, research expectations, supervision quality and access to academic resources, play a central role in shaping postgraduate students' experiences. Advanced academic engagement requires independent inquiry, sustained critical thinking and consistent scholarly productivity, all of which influence students' sense of competence and autonomy (Anderson, Guan, & Koc, 2016). Studies indicate that effective supervision and supportive academic environments enhance students' academic confidence and personal growth, while inadequate guidance and unclear expectations contribute to frustration and diminished fulfillment (Rong'uno, 2016). Evidence further suggests that academic structures and institutional practices significantly shape postgraduate students' capacity to achieve personal and academic development, highlighting the relevance of academic factors in understanding self-actualization.

2.3 Financial Factors as Correlates of Self-Actualization

Financial stability is a critical condition for postgraduate students' sustained engagement in academic and personal development. Postgraduate students often face financial pressures related to tuition fees, research expenses and living costs, which may affect their academic focus and psychological well-being (Green, 2019). Studies have demonstrated that financial strain is associated with reduced academic engagement, lower motivation and compromised personal fulfillment, while access to scholarships and institutional financial support enhances students' ability to pursue academic goals and professional growth (Clark, 2018). Adequate financial support enables greater participation in research activities and academic opportunities, thereby facilitating conditions necessary for self-actualization among postgraduate students.

3. Theoretical Framework

This study is anchored in Maslow's Hierarchy of Needs Theory, which positions selfactualization as the highest level of human development attained after the fulfillment of foundational needs (Maslow, 1943). In the postgraduate context, academic and financial conditions represent essential needs that shape students' capacity for autonomy, motivation and personal growth. Supportive academic structures and adequate financial resources create an enabling environment for sustained engagement and fulfillment. The framework is further informed by Bandura's Self-Efficacy Theory, which emphasizes individuals' beliefs in their ability to successfully perform tasks and achieve goals (Bandura, 1997). Academic and financial challenges may undermine self-efficacy by reducing confidence and perceived competence. Together, these theoretical perspectives underpin the examination of academic and financial factors as correlates of self-actualization among postgraduate students at KCA University.

4. Methods

4.1 Setting and Participants

A correlational study was conducted at KCA University in Nairobi County, Kenya. KCA University is a private institution with a total postgraduate population of 940 students, distributed

across three schools, Schools of Business, Technology and education. The study targeted final-year postgraduate students, as they are likely to have sufficient exposure to academic, financial and social experiences influencing self-actualization. Stratified random sampling was used to recruit 94 participants, representing 10% of the total postgraduate population, with proportional allocation across the schools, 40 students from the School of Business, 32 from the School of Technology and 22 from the School of Education.

4.2 Study Measures

Self-actualization was assessed using an adapted version of the Self-Actualization Scale (Jones & Crandall, 1986), a standardized instrument measuring autonomy, purposefulness, selfacceptance, personal growth and handling challenges. Responses were recorded on a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." Academic, financial and social factors were measured using a questionnaire assessing their influence on selfactualization. Demographic information, including age, gender, marital status and academic program, was also collected.

4.3 Procedure

Ethical approval was obtained from KCA University and the National Commission for Science, Technology and Innovation (NACOSTI). Written informed consent was obtained from all participants. Data were collected in February 2025 using a self-administered online questionnaire. Participants completed the questionnaire remotely at their convenience and all responses were automatically coded to maintain anonymity.

4.4 Data Analysis

Data were entered into Microsoft Forms and analysed using Microsoft Power BI. Descriptive statistics summarized participant characteristics and levels of self-actualization. Pearson's correlation analysis was conducted to examine the relationships between socioeconomic factors and self-actualization. Multiple regression analysis was used to determine the predictive value of academic, financial and social factors. Statistical significance was set at $p < .05$.

5. Results

5.1 Demographic Characteristics

A total of 94 postgraduate students participated in the study. Most respondents were female (63.83%), reflecting higher enrolment of women in the sampled programs. The largest proportion of students were aged 31–35 years (44.68%), followed by 36–40 years (25.53%), indicating that the majority of postgraduate students are mature adults balancing academic, professional and personal responsibilities. Regarding marital status, 64.89% of students were married, while 35.11% were single, highlighting the diversity of life stages within the study population. The participants were distributed across the three schools, with the School of Business slightly

overrepresented (42.55%), followed by the School of Technology (34.04%) and the School of Education (23.40%).

Table 1: Demographic Characteristics (N=94)

Demographic Characteristics	Frequency, N (%)
School of Study	
School of Business	40 (42.55)
School of Technology	32 (34.04)
School of Education	22 (23.40)
Demographic Characteristics	**Frequency, N (%)**
Age	
22–25	14 (14.89)
26–30	9 (9.57)
31–35	42 (44.68)
36–40	24 (25.53)
41+	5 (5.32)
Marital Status	
Single	33 (35.11)
Married	61 (64.89)

5.2 Levels of Self-Actualization

Most postgraduate students demonstrated moderate self-actualization (44.68%), while 38.30% exhibited high self-actualization and 17.02% had low self-actualization. The average selfactualization score was 10.74, indicating that the overall group fell within the moderate range.

Table 2: Self-Actualization Levels

Self-Actualization Level	Respondents	Proportion (%)
Low	16	17.02%
Moderate	42	44.68%
High (Self-Actualized)	36	38.30%

5.3 Academic Factors as Correlates of Self-Actualization

Academic factors were assessed in terms of students' academic achievement, lecturer/supervisor support and satisfaction with university resources. Overall, 26.60% of postgraduate students reported that academic achievements significantly enhanced their sense of purpose and self-

confidence, while 36.17% experienced moderate impact and 37.23% reported rare impact. Regarding lecturer or supervisor support, 40.43% of students indicated significant support, 25.53% moderate and 34.04% rare support. Satisfaction with university resources showed that 26.60% were very satisfied, 34.04% moderately satisfied and 39.36% not satisfied at all. These findings indicate that both individual academic success and institutional support influence postgraduate students' self-actualization. Academic factors showed a moderate positive correlation with self-actualization (r = 0.27), indicating that students who reported higher academic engagement, achievement and confidence also tended to experience greater self-actualization.

Table 3: Academic Factors and Self-Actualization

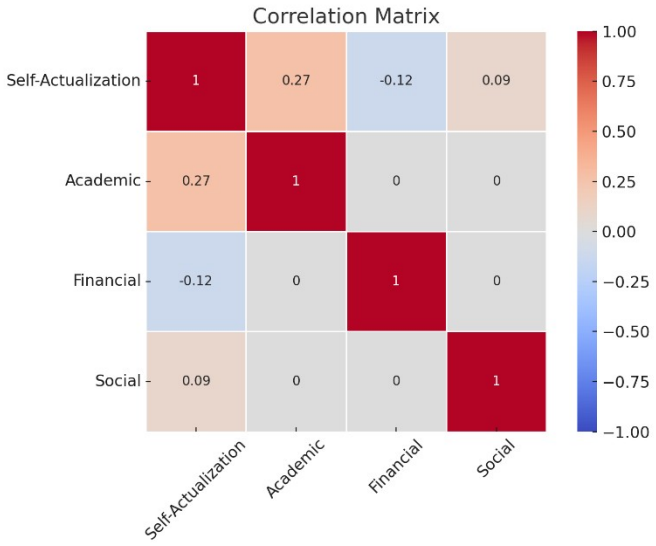
Academic Factor	Response		Respondents Proportion (%)
Academic Achievement	Rarely	35	37.23%
	Moderately	34	36.17%
Academic Factor	**Response**	**Respondents Proportion (%)**	
	Yes, significantly	25	26.60%
Lecturer/Supervisor Support	Rarely	32	34.04%
	Moderately	24	25.53%
	Yes, significantly	38	40.43%
University Resources & Opportunities	Not satisfied at all	37	39.36%
	Moderately satisfied	32	34.04%
	Yes, very satisfied	25	26.60%

5.4 Financial Factors as Correlates of Self-Actualization

Financial factors were examined to determine how postgraduate students' financial sufficiency, access to funding and work commitments influence their self-actualization. Overall, 42.55% of students reported that their financial resources were fully sufficient to support academic and personal growth, 24.47% indicated partial sufficiency and 32.98% noted insufficiency. Access to grants, scholarships or funding was reported as significant by 36.17% of respondents, moderate by 30.85%, and rare by 32.98%. Work commitments affected self-actualization to varying degrees, with 29.79% stating regular reduction in growth due to work, 35.11% occasional and 35.11% rarely. These findings suggest that financial stability and access to resources play a crucial role in enabling students to focus on personal and academic development, whereas financial constraints and work demands can hinder engagement and limit self-actualization opportunities. Financial factors exhibited a weak negative correlation (r = -0.12), suggesting that limited financial resources slightly constrain the ability to reach full personal and academic growth.

Table 4 Financial Factors and Self-Actualization (N=94)

Financial Factor	Response	Count (n)	Proportion (%)
Financial Sufficiency	Not sufficient	31	32.98%
	Partially sufficient	23	24.47%
	Fully sufficient	40	42.55%
Access to Grants/Scholarships	Rarely	31	32.98%
	Moderately	29	30.85%
	Yes, significantly	34	36.17%
Impact of Work on Growth	Rarely	33	35.11%
	Occasionally	33	35.11%
	Yes, regularly	28	29.79%



6. Discussion

This study found that academic and financial factors were positively associated with selfactualization among postgraduate students at KCA University, with academic support showing the strongest relationship, while social factors demonstrated a minimal, non-significant association. Students with greater access to quality supervision, timely feedback and financial stability reported higher levels of personal growth, purpose, autonomy and resilience, whereas those facing academic gaps or financial stress experienced lower self-actualization. These findings align with prior research emphasizing the importance of supportive academic environments and financial sufficiency in promoting personal development and goal attainment (Komarraju et al., 2011; Gopinath, 2020; Moneva et al., 2020). The variation in selfactualization levels may reflect differences in access to resources, individual coping strategies and demographic characteristics such as age or social stability. While the study highlights critical correlates of self-actualization, the cross-sectional design and single-institution sample limit causal inference and generalizability.

7. Conclusions and Recommendations

This study found that self-actualization among postgraduate students at KCA University is influenced primarily by academic and financial factors, with academic support showing the strongest association. Students who reported strong academic guidance, timely supervision, access to learning resources and financial stability demonstrated higher levels of personal growth, autonomy, purpose and resilience. Alternatively, students facing financial stress, limited academic mentorship or institutional barriers were more likely to report moderate or low self-actualization. These findings confirm that self-actualization is shaped not only by individual effort but also by structural, economic and relational contexts within postgraduate education. Based on these results, the study recommends strengthening academic mentorship programs, expanding financial aid opportunities enhancing research exposure and instituting regular monitoring of student development outcomes. Future research should investigate psychological mediators, non-cognitive skills programs, cross-institutional comparisons, longitudinal trajectories, post-graduation career actualization and the influence of gender and marital status on self-actualization.

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AN ASSESSMENT OF CONFLICT MANAGEMENT STRATEGIES AND ORGANIZATIONAL PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN TESO NORTH SUB COUNTY, KENYA

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Abstract

Conflict is an inevitable feature of organizational environments, including public secondary schools, where it arises among teachers, administrators, students, and parents. Ineffective management of such conflicts can adversely affect organizational performance. This study examined conflict management strategies and organizational performance in public secondary schools in Teso North Sub-County, Kenya. The study was motivated by the increasing incidence of conflicts within the sub-county, which has hindered teacher involvement in the education system, as well as the limited empirical evidence on the effectiveness of avoidance, collaboration, and negotiation strategies in managing school-based conflicts. The study was guided by Constructive Controversy Theory and supported by Social Exchange Theory. Using a correlational research design, the study targeted teachers, principals, and the Sub-County Director of Education. Multi-stage sampling techniques, including simple random and stratified sampling, yielded a sample size of 73 respondents. Data were collected from 67 respondents using questionnaires and interview guides. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were thematically analysed and presented using narratives.

The findings indicated that ideological differences were the most reported cause of conflict among teachers, while principals cited inadequate resources, and the Sub-County Director of Education identified poor communication as the primary cause. Avoidance was preferred conflict management strategy among teachers and principals, whereas negotiation was least preferred. Correlation analysis revealed a strong positive relationship between negotiation and organizational performance ($r = 0.808$, $p < 0.001$), a moderate positive relationship for collaboration ($r = 0.673$, $p < 0.001$), and a strong negative relationship for avoidance ($r = -0.897$, $p < 0.001$). The study concluded that avoidance is widely practiced, it is significantly associated with lower organizational performance, while negotiation and collaboration enhance school effectiveness. The findings highlighted the need for school administrators and education stakeholders to promote collaborative and negotiation-based conflict management approaches.

Keywords: Conflict Management Strategies, Organizational Performance, Public Secondary Schools, School Administration, Teso North Sub-County, Kenya.

INTRODUCTION

Conflict is an inherent feature of human interaction and organizational life, arising wherever individuals or groups pursue divergent interests, values, or goals. In the 21st century, conflicts have intensified across multiple levels of society, from international and intra-state wars to organizational and institutional disputes. Globally, the post–Cold War era, coupled with economic globalization and political liberalization, has reshaped the nature and drivers of conflict, particularly in developing regions such as Africa (Rohner & Saia, 2019). African countries, characterized by diverse historical trajectories, governance structures, and socio-economic conditions, experience conflicts in distinct and context-specific ways, necessitating localized analyses rather than generalized solutions (Munzoul Asal, 2023).

Within Kenya, conflict has remained a persistent challenge since independence, manifesting not only at the political and communal levels but also within social institutions, including schools. Educational institutions are particularly susceptible to conflict due to their complex hierarchical structures and the constant interaction among administrators, teachers, students, and parents. Scholars note that conflicts in schools often stem from misunderstandings, ideological differences, resource constraints, leadership styles, and breakdowns in communication (Sergiovanni & Starratt, 1987). When poorly managed, such conflicts disrupt teaching and learning processes, undermine staff morale, and hinder the attainment of institutional goals (Chanda, 2019).

In Kenyan public secondary schools, conflict has been associated with reduced teacher engagement, strained relationships, and declining organizational performance. Although conflict is inevitable, its consequences largely depend on the strategies employed to manage it. Historically, societies and organizations have relied on various conflict resolution mechanisms, including dialogue, mediation, and negotiation, to mitigate destructive outcomes (Edwin, 2013). However, many school administrators remain uncertain about which strategies are most effective in enhancing organizational performance, leading to inconsistent and sometimes counterproductive approaches to conflict management.

Empirical evidence from Kenya indicates that conflicts in schools are driven by factors such as lack of respect, harmful rumors, poor interpersonal relationships, and inadequate resources (Riang'a, 2013). Nyakundi and Orodho (2020) report that only 5% of teachers demonstrated good performance in contexts characterized by persistent conflict, while principals' efforts to resolve disputes achieved only about 70% effectiveness. Despite interventions by the Ministry of Education, including training, community engagement, and policy reforms, conflicts continue to disrupt academic programs and teacher participation, particularly in rural and semi-rural regions.

Teso North Sub-County in Busia County exemplifies this challenge. The area has experienced persistent conflicts within public secondary schools, contributing to reduced teacher involvement in instructional activities and comparatively low academic performance. While previous studies, such as Susan S. Raines (2016), have examined conflict management strategies in different contexts, there remains a paucity of empirical research assessing the effectiveness of specific strategies, namely avoidance, collaboration, and negotiation in relation to organizational performance within Kenyan public secondary schools.

Against this backdrop, the present study examines conflict management strategies and organizational performance in public secondary schools in Teso North Sub-County, Kenya. By situating the analysis within Constructive Controversy Theory and Social Exchange Theory, the study seeks to bridge an important empirical gap by clarifying how different conflict management

strategies relate to school performance outcomes. The findings contribute to the existing literature on educational management and offer evidence-based insights for policymakers, school administrators, and education stakeholders seeking to promote sustainable conflict management practices and improved organizational performance in public secondary schools.

MATERIALS AND METHODS

The study employed a correlational research design to examine the relationship between conflict management strategies and organizational performance in public secondary schools. This design was appropriate because it enabled the assessment of associations between variables as they naturally occur, without manipulation (Mugenda & Mugenda, 1999). Conflict management strategies specifically avoidance, collaboration, and negotiation were treated as independent variables, while organizational performance constituted the dependent variable.

The study was conducted in Teso North Sub-County, Busia County, Kenya, a predominantly rural and cosmopolitan region characterized by diverse socio-economic conditions and a growing public secondary school sector. The sub-county was selected due to reported incidences of school-based conflicts and limited empirical studies examining conflict management and organizational performance within this context (KNBS, 2019).

The target population comprised 27 public secondary schools, 189 teachers, 27 principals, and the Sub-County Director of Education. A multi-stage sampling procedure was applied. Schools were first stratified into boarding, day, and mixed categories, after which simple random sampling was used to select nine schools. Within each selected school, seven teachers were randomly sampled, resulting in 63 teachers. All nine principals of the sampled schools were included, and the Sub-County Director of Education was purposively selected based on administrative responsibility and expert knowledge. The final sample size was 73 respondents, consistent with recommended sampling procedures for finite populations (Mugenda & Mugenda, 1999).

$$\frac{ss}{1+\frac{ss-1}{p}} \quad \textbf{Eq 1}$$

$$\textbf{where } ss = 50\% \textbf{ of } p, p = \textbf{population}$$

Example 1; For 27 schools

$$\textbf{Take } 50\% \textbf{ of } 27 = 13.5$$

$$\textbf{let's use } 13 \textbf{ since there is no half school}$$

$$\frac{13}{1+\frac{13-1}{27}} = \frac{13}{1+\frac{12}{27}} = \frac{13}{1+0.444} = \frac{13}{1.444} = 9.0$$

Example 2; For 189 schools

$$\textbf{Take } 50\% \textbf{ of } 189 = 94.5, \textbf{we use } 94$$

$$\frac{94}{1+\frac{94-1}{189}} = \frac{94}{1+\frac{93}{189}} = \frac{94}{1+0.492} = \frac{94}{1.492} = 63$$

Table 4 Sampling Matrix

Category	Target population	Sampling technique	$\frac{ss}{1+\frac{ss-1}{p}}$
Schools (Boarding, day and mixed)	27	Stratified and simple random	9
Principals	27	simple random.	9
Teachers	189	Proportionate	63
Sub County Director of Education	1	Purposive	1

Data were collected using structured questionnaires and interview guides. Questionnaires were administered to teachers to collect quantitative data on causes of conflict, conflict management strategies, and indicators of organizational performance. Semi-structured interviews were conducted with principals and the Sub-County Director of Education to obtain qualitative insights into conflict dynamics and management practices. Data collection was conducted in person following approval from relevant authorities to ensure clarity, accuracy, and completeness of responses.

Instrument validity was established through expert review to ensure clarity, relevance, and adequate coverage of study variables (Kasomo, 2015). A pilot study conducted in neighbouring Teso South Sub-County enabled refinement of the instruments. Reliability of the questionnaire was assessed using Cronbach's alpha, with coefficients meeting the acceptable threshold of 0.70, indicating satisfactory internal consistency (Cortina, 1993).

Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics, including frequencies and percentages, were used to summarize data, while Pearson's correlation coefficient was applied to determine the strength and direction of relationships between conflict management strategies and organizational performance. Qualitative data were analysed thematically and used to complement quantitative findings through triangulation (Cypress, 2017).

Ethical approval was obtained from the relevant institutional and national authorities prior to data collection. Informed consent was obtained from all participants, who were assured of confidentiality, anonymity, and voluntary participation. Pseudonyms and codes were used to protect participant identities, and data were used exclusively for academic purposes in line with established ethical research standards.

RESULTS

This section presents the findings of the study on the effect of conflict management strategies on employee performance in public secondary schools in Teso North Sub County, Busia County, Kenya. The data were collected through structured questionnaires administered to teachers and principals, as well as an interview with the Sub County Director of Education. Analysis was performed using SPSS software, and results are presented in relation to the study's objectives. The response rate, demographic profiles of respondents, and key findings on conflict causes, management strategies, organizational performance, and their interrelationships are detailed below.

The study achieved a high overall response rate of 91.8%, as detailed in Table 1. Out of a targeted sample of 73 respondents, 67 participated. The Sub County Director of Education (SCDE) provided a complete (100%) response, while 88.9% of principals and 92.1% of teachers

participated. This high rate is considered sufficient for robust analysis and enhances the reliability of the findings (Mugenda & Mugenda, 2009).

Table 5 Summary of Response Rate

Category	Sampled	Actual	Response Rate (%)
Sub County Director of Education	1	1	100.0%
Principals	9	8	88.9%
Teachers	63	58	92.1%
Total	73	67	91.8%

The demographic characteristics of the participants are summarized in Tables 2a and 2b. The majority of respondents were teachers (86.6%), followed by principals (11.9%), and the SCDE (1.5%). In terms of leadership, 62.5% of principals held a Master's degree. Among teachers, 63.8% held a Bachelor's degree, 19.0% a Diploma, and 17.2% a Master's degree. The gender distribution showed a male majority among both principals (62.5%) and teachers (64.4%). Experience data indicated that 50% of principals had 1-3 years of experience, while the largest proportion of teachers (44.0%) also fell within the 1-3 years category. Most principals (75%) were above 40 years of age, whereas teacher ages were more evenly distributed across younger brackets.

Table 6 Demographic Summary: Designation, Education & Gender

Category	Principals (n=8)	Teachers (n=58)	SCDE (n=1)
Designation (% of Total)	11.9%	86.6%	1.5%
Highest Education Level			
Master's Degree	62.5%	17.2%	-
Bachelor's Degree	37.5%	63.8%	-
Diploma	0.0%	19.0%	-
Gender			
Male	62.5%	64.4%	-
Female	37.5%	35.6%	-

Table 7 Demographic Summary: Experience & Age

Category	Principals	Teachers
Experience (Years)		
<1	12.5%	8.4%
1 – 3	50.0%	44.0%
4 – 7	25.0%	20.3%
8 – 11	12.5%	11.9%
12 – 15	0.0%	6.7%
>15	0.0%	6.7%
Age Group (Years)		
20 – 35	0.0%	82.6%
35 – 40	25.0%	13.6%
>40	75.0%	11.8%

Combined 20-25 (23.7%), 25-30 (20.3%), and 30-35 (38.6%) categories.

The perceived primary causes of conflict varied among the stakeholder groups, as synthesized in Table 3. Teachers primarily identified Ideological Differences (42.3%) as the main cause, followed by Lack of Communication (32.2%) and Inadequate Resources (25.4%). Conversely, principals rated Inadequate Resources (50.0%) as the foremost cause. The SCDE viewed Lack of Communication (50%) as the most significant contributor to conflict within schools.

Table 8 Perceived Causes of Conflict by Stakeholder Group (%)

Cause of Conflict	Teachers (n=59)	Principals (n=8)	SCDE
Ideological Differences	42.3	37.5	20
Lack of Communication	32.2	12.5	50
Inadequate Resources	25.4	50.0	30

The preference for conflict management strategies differed notably between teachers and principals, with the SCDE's perspective aligning more with leadership views. The aggregated preferences, focusing on high preference ratings (Scale 4 & 5), are presented in Table 4. Among teachers, Avoidance was the most preferred strategy (69.0%), whereas Negotiation was the least preferred (22.5%). Principals also showed the highest preference for Avoidance (62.5%). The SCDE confirmed that Avoidance (50%) was the most frequently employed strategy in schools, followed by Negotiation (31%).

Table 9 High Preference for Conflict Management Strategies (Scale 4 & 5) (%)

Strategy	Teachers (n=58)	Principals (n=8)	SCDE
Negotiation	22.5	25.0	31
Collaboration	22.4	12.5	19
Avoidance	69.0	62.5	50

The perceived organizational performance and the impact of conflict are summarized in Table 5. A high percentage of teachers (96.6%) and principals (75.0%) acknowledged that conflict affects performance, with 82.8% of teachers reporting a negative effect. Teachers' means rating of their school's organizational performance was low (2.84 on a 5-point scale, with a mode of 2.0-2.5). Principals gave a moderately higher mean rating (3.38, with a mode of 3.0), while the SCDE provided a low rating of 2.0.

Table 10 Impact of Conflict and Organizational Performance Ratings

Metric	Teachers	Principals	SCDE
% Reporting Conflict Affects Performance	96.6	75.0	-
% Reporting Negative Effect (of those above)	82.8	-	-
Mean Organizational Performance Rating	2.84	3.38	2.0
Most Common Performance Rating (Mode)	2.0 & 2.5 (34.5% & 32.8%)	3.0 (62.5%)	-

The correlation analysis revealed significant relationships between the use of different conflict management strategies and organizational performance, as shown in Table 6. Negotiation ($r = 0.808$, $p < 0.001$) and Collaboration ($r = 0.673$, $p < 0.001$) had strong positive correlations with organizational performance. Conversely, Avoidance demonstrated a strong negative correlation with performance ($r = -0.897$, $p < 0.001$). The mean scores indicated that Avoidance was the most frequently reported strategy (Mean = 3.58), while Negotiation was the least used (Mean = 2.29).

Table 11 Descriptive Statistics and Correlations of Strategies with Organizational Performance (N=67)

Variable	Mean	Std. Deviation	Pearson's r with Org. Performance	P-Value
Negotiation	2.29	1.27	0.808	0.000
Collaboration	2.89	0.91	0.673	0.000
Avoidance	3.58	1.47	-0897	0.000
Organizational Performance	2.84	0.84	-	-

Note: All correlations are significant at the 0.01 level (2-tailed).

Conversely, Avoidance demonstrated a strong negative correlation with performance ($r = -0.897$, $p < 0.001$). The mean scores indicated that Avoidance was the most frequently reported strategy (Mean = 3.58), while Negotiation was the least used (Mean = 2.29).

DISCUSSION

This study investigated the effect of conflict management strategies on employee performance in public secondary schools in Teso North Sub County, Kenya, drawing on multi-level perspectives from teachers, principals, and the Sub County Director of Education. The discussion interprets the key findings in relation to existing literature, highlights their theoretical and practical implications, and suggests avenues for future research.

A striking finding was the disparity in perceived causes of conflict among stakeholders. Teachers predominantly identified ideological differences (42.3%) as the primary cause, whereas principals emphasized inadequate resources (50.0%), and the Sub County Director of Education highlighted lack of communication (50%). This misalignment suggests a fragmented understanding of

institutional challenges, potentially hindering the development of coherent, school-wide conflict resolution frameworks. The principals' focus on resource scarcity aligns with studies highlighting how budgetary constraints in public education can fuel competition and tension (Lawson & Michler, 2014). Conversely, teachers' emphasis on ideological differences may reflect deeper cultural or pedagogical divides within staff, a dimension less visible to administrative leadership. This divergence underscores the need for diagnostic tools that capture multi-stakeholder perspectives before implementing conflict intervention programs.

Perhaps the most concerning finding is the strong preference for avoidance as a conflict management strategy across all respondent groups (Teachers: 69.0%; Principals: 62.5%; SCDE: 50%). This preference exists despite a robust and significant negative correlation between avoidance and organizational performance ($r = -0.897$, $p < 0.001$). This paradox the use of a strategy demonstrably linked to poorer outcomes warrants critical examination. It may indicate a lack of training in proactive conflict resolution, a cultural norm of circumventing confrontation to maintain superficial harmony, or systemic pressures that make engagement seem too time-intensive or risky. This finding challenges the assumption that educational leaders naturally adopt constructive strategies and suggests that avoidance may be a default response in high-stress, under-resourced environments.

In contrast, negotiation and collaboration, strategies positively correlated with performance ($r = 0.808$ and $r = 0.673$, respectively), were markedly less preferred. This reluctance may stem from a skills gap, perceived power imbalances that make open dialogue seem untenable, or a belief that these approaches are ineffective within the existing administrative hierarchy. The strong positive correlation for negotiation suggests that where it is practiced, it is highly beneficial, pointing to a significant opportunity for performance improvement through capacity building. The moderate correlation for collaboration indicates its value but also suggests that its implementation may be partial or face contextual barriers not captured by the survey.

The study revealed a clear dissonance in how performance is assessed internally. Teachers, who are most directly affected by daily conflicts, provided low ratings of organizational performance (mean = 2.84/5), with 82.8% reporting that conflict negatively impacts their work. Principals, however, offered more optimistic assessments (mean = 3.38/5). This gap may reflect differing metrics of success: principals may prioritize administrative compliance and examination results, while teachers evaluate the health of the workplace environment and their own professional efficacy. The SCDE's low rating (2.0/5) aligns more closely with teacher perceptions, possibly indicating a system-level awareness of underperformance that is not fully acknowledged by mid-level management. This perceptual divide highlights a critical risk: if leadership underestimates the severity of conflict's impact, interventions may be deprioritized or misdirected.

The findings contribute to the literature on educational management by empirically validating in a Kenyan context the theoretical links between conflict management styles and organizational outcomes. The strong negative correlation with avoidance supports conflict transformation theory, which posits that unaddressed conflict depletes social capital and erodes institutional effectiveness (Dawson & Michler, 2014).

Practically, the results underscore an urgent need for targeted professional development. Training programs should move beyond theoretical models to build practical skills in negotiation, mediation, and collaborative problem-solving for both teachers and principals. Furthermore, establishing transparent, formal conflict resolution mechanisms could help shift the culture from

avoidance to engagement. School policy should also encourage resource-sharing frameworks and improve communication channels to address the root causes identified by stakeholders.

This study is limited by its cross-sectional design and focus on one sub-county, which may affect generalizability. The reliance on self-reported data also introduces the potential for perceptual bias. Future research should employ longitudinal or mixed-methods designs to explore the causal mechanisms behind the avoidance-performance link. Qualitative studies could investigate why avoidance is preferred despite its costs. Comparative studies across different regions or school types (public vs. private) could identify contextual factors that influence strategy choice and effectiveness. Additionally, research could evaluate the impact of specific conflict resolution training programs on both perceived climate and objective performance metrics like teacher retention and student achievement.

CONCLUSION

This research investigated how conflict management strategies influence employee performance within public secondary schools in Teso North Sub County, Kenya. The study engaged multiple stakeholders' teachers, principals, and the Sub County Director of Education to gain a holistic view of conflict dynamics in the educational environment. The findings collectively reveal a critical disconnect between the strategies that are most beneficial for organizational health and those most commonly practiced.

A significant outcome of this study is the clear misalignment in stakeholder perceptions regarding the root causes of conflict. Teachers, principals, and administrative leaders each identified different primary drivers, suggesting a fragmented understanding that likely hinders the development of unified and effective conflict resolution approaches within schools.

Most notably, the research uncovers a consequential paradox within these institutions. Avoidance emerged as the dominant conflict management strategy across all respondent groups, despite strong evidence indicating its detrimental association with organizational performance. In contrast, more constructive strategies such as negotiation and collaboration, which were positively linked to better outcomes, were markedly underutilized. This gap highlights a systemic shortfall in conflict competence that directly affects institutional effectiveness and staff morale.

Furthermore, the study identified a perceptional divide concerning organizational health. Teachers, who experience the daily impact of conflict, assessed their schools' performance more critically than principals did. This discrepancy suggests that leadership may not fully recognize the operational and human costs of unaddressed conflict, potentially delaying necessary interventions.

To address these challenges, it is recommended that educational authorities implement mandatory, skills-based training in constructive conflict management for both teachers and administrators. Schools should also establish formal, accessible conflict resolution mechanisms to provide safe channels for addressing disputes. Encouraging regular diagnostic dialogues among stakeholders can help align understanding and foster collaborative problem-solving. Additionally, integrating conflict management effectiveness into leadership evaluation metrics could incentivize cultural shift from avoidance to engagement.

The implications of this study extend beyond the educational sector. The identified pattern where a counterproductive yet habitual practice persists despite the availability of more effective alternatives offers insights for other public sector institutions and community organizations operating under similar constraints. Transforming conflict management from a passive, avoidant

exercise into a proactive, skilled practice is essential for building resilient institutions, enhancing employee well-being, and sustaining long-term organizational performance.

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PSYCHOLOGICAL PREDICTORS OF MARITAL SATISFACTION AMONG NEWLYWED COUPLES: A CASE STUDY OF SELECTED PARISHES AT THE ARCHDIOCESE OF NAIROBI, KENYA

LILLIAN WAIRIMU MAINA

Abstract

Marital satisfaction is a key determinant of individual well-being and family stability; however, its psychosocial predictors remain underexplored within the Kenyan context, particularly among newly married couples. This study examined the extent to which psychosocial factors predicted marital satisfaction among newlywed couples in selected parishes within the Archdiocese of Nairobi. Specifically, the study sought to determine the level of marital satisfaction, examine the predictive role of personality traits, assess the influence of social support, and develop an evidence-based intervention model to enhance marital satisfaction. The study was grounded in the Big Five Personality Traits Theory and the Social Exchange Theory. It investigated how personality traits—extraversion, agreeableness, conscientiousness, neuroticism, and openness—and perceived social support from family, friends, and clergy influenced marital satisfaction during the early years of marriage. A descriptive survey research design was adopted, and a census sampling technique was used to target 108 newlywed individuals from Divine Mercy Kariobangi and Ngararigа Parishes. Data were collected using standardized questionnaires, with a response rate of 100 participants. Data analysis was conducted using Microsoft Power BI, employing both descriptive and inferential statistics. The findings indicated that 63% of the respondents reported moderate marital satisfaction, 22% reported high satisfaction, while 15% reported low satisfaction. Regression analysis revealed that personality traits significantly predicted marital satisfaction, $F(5, 94) = 7.09$, $p < .001$, with an adjusted R^2 of .28, leading to the rejection of the first null hypothesis (H_{01}). Conscientiousness, agreeableness, and extraversion were significant positive predictors, whereas neuroticism was a significant negative predictor. Openness was not a significant predictor. When social support was added to the model, the explained variance increased to 37%, $F(6, 93) = 11.03$, $p < .001$, resulting in the rejection of the second null hypothesis (H_{02}). Social support emerged as a significant positive predictor of marital satisfaction. Based on the findings, a culturally responsive intervention model emphasizing personality-informed counselling, faith-based support systems, and community-based enrichment programs was developed. The study concluded that personality traits and social support significantly influence marital satisfaction among newlywed couples and recommended their integration into church-based counselling and marital support initiatives.

AN ASSESSMENT OF PREDICTIVE ABILITY OF EMOTIONAL INTELLIGENCE ON EMPLOYEE PRODUCTIVITY AMONG HEALTH WORKERS IN SELECTED PUBLIC HOSPITALS IN UASIN-GISHU COUNTY, KENYA

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Abstract

Primary healthcare providers work in a highly demanding work environment that exposes them to workplace stress, which affects their overall work performance. Cultivating adaptive capacities to cope with workplace stress is essential to maintaining optimal employee productivity towards improving overall quality of healthcare services and health outcomes. Emotional self-regulation is considered a key adaptive capacity that enhances individual ability to maintain productivity despite experiencing challenging and stressful work environments. However, there are limited studies assessing the relationship between emotional self-regulation and employee productivity among primary healthcare providers in healthcare settings. This assesses the relationship between emotional self-regulation and employee productivity among primary healthcare providers in public hospitals in Uasin Gishu County, Kenya. Guided by the theory of planned behavior, the quantitative correlational study was adopted to conduct the study. A stratified random sample of 163 primary healthcare providers was obtained from six randomly selected public hospitals. Data was collected using self-administered health service employee questionnaire. There was a very weak negative relationship between emotional self-regulation and employee productivity among primary healthcare providers ($r = 0.-008$, $p=0.355$). The study highlights no significant relationship between the level of emotional self-regulation and employee productivity among primary healthcare providers in public hospitals in Uasin Gishu County, Kenya.

Keywords: Emotional self-regulation, Employee productivity, healthcare providers, public hospitals.

1. INTRODUCTION

Employee productivity plays a fundamental role in most organizations, including healthcare settings, which serves as a key performance indicator of an organization. Employee productivity involves an individual employee's ability to accomplish a given task through minimum input that results to optimal output over a particular time span while maintaining organizational criteria including efficiency, accuracy, completeness, and cost-reduction (Nikmanesh et al., 2023). This denotes that employee productivity is analogous to organizational productivity, whereby individual skills and competencies act as the core drivers of effective application of financial and technological resources towards the overall success of a firm. Chidinma (2022) infers that employee productivity highlights employees' motivation and sense of well-being in contributing to the overall firm performance based on set goals, priorities, and ideals. In general, there is need

to assess and establish individual factors that influence employee productivity towards effective strategies aimed at enhancing overall organizational performance.

Healthcare organizations feature a diverse workforce that ensures provision of quality care services to improve overall healthcare outcomes. Healthcare providers work in stressful conditions that necessitate development of adaptive emotional capacities to attain a state of societal and personal equilibrium while engaging with the environmental dynamics (Sharmin et al., 2024). Regulating one's emotional state is crucial to ensure effective interaction and engagement with the external environment towards favorable actions. Chen and Bonanno (2021) assert that emotional self-regulation involves the ability to recognize, control, and channel one's emotional state into beneficial actions especially in stressful work conditions. This implies that emotional self-regulation features individual stress-coping mechanisms that ensure alignment between oneself and the external environment to maintain optimal work performance. Therefore, self-regulation may be considered as a predictive factor for employee productivity in organizational settings, including healthcare settings.

Globally, high levels of emotional self-regulation among healthcare providers increased employee productivity, which was showcased by improved patient experience and healthcare outcomes (Wheeler et al., 2020). Inadequate emotional self-regulation led to employee burnout and consequent decrease in employee productivity (Bakker & de Vries, 2020). This emphasized the need for employee development strategies in healthcare settings that facilitated development of emotional self-regulation as an adaptive capacity to manage acute job strain and reduce incidences of employee burnout (Oliveira et al., 2022). In Kenya, effectiveness of strategies for enhancing emotional self-regulation among healthcare providers varied widely with most healthcare centers reporting inadequacy of support programs aimed at tackling employee burnout and related negative impacts on the quality of care services (Kaiga et al., 2025).

Despite this evidence, there is a significant gap in the literature concerning emotional self-regulation and employee productivity within healthcare settings in Kenya. This study addresses this gap by assessing the relationship between emotional self-regulation and employee productivity among healthcare providers in Uasin Gishu County. The findings aim to inform context-specific support interventions to enable healthcare providers develop and maintain stress-coping mechanisms that enhance service quality and effectiveness of the healthcare sector.

2. Literature Review

2.1 Emotional self-regulation as a predictor of Employee Productivity

Emotional self-regulation refers to the ability to recognize, control, and channel negative emotional states into beneficial actions. Low emotional self-regulation is consistently associated with decreased employee productivity, which involves poor service quality and healthcare outcomes (Kaiga et al., 2025; Jasintha & Mayuran, 2021). Empirical study results around the world including Australia, Sweden, Malaysia, and Nigeria demonstrate that emotional self-regulation is a predictor of employee productivity among healthcare providers, with high levels of emotional self-regulation leading to improved healthcare outcomes (Rani, 2022; Popucza & Eriksson, 2025; Ravesangar & Lei Ping, 2024; Olabimitan et al., 2025). In contrast, Shyton et al. (2025) highlighted

the complexity of establishing emotional self-regulation-employee productivity relationships since they continually change with career phases. In general, these studies establish emotional self-regulation as a potential factor that may be targeted to influence employee productivity and thus overall service quality and healthcare outcomes.

3. Theoretical Framework

Emotional self-regulation involves managing one's internal emotional state to maintain optimal engagement and interaction with the external environment especially during stressful situations. The theory of planned behaviour asserts that an individual's actions and behaviour are based on personal attitudes and subjective norms (Megías-Robles et al., 2020). While personal attitudes establish one's overall perspective towards a specific situation that influences the disposition to take a specific action, subjective norms entail individual interpretation of other individuals' perspectives about a specific action. Emotional self-regulation is facilitated by one's ability to maintain the intent to act in a specific manner, which is influenced by personal attitudes towards a specific situation as well as the set subjective norms in a specific environmental context. Hence, the theory of planned behaviour is considered relevant for this study since it highlights that an individual's capacity to maintain a specific behaviour, such as efficiently completing tasks, is based on their personal attitudes and subjective norms concerning the situation.

4. Research Methodology.

4.1 Setting and Participants

A quantitative correlational research design was conducted in six public hospitals in Uasin Gishu County, Kenya. The location of the study featured 139 public health facilities with healthcare providers working in different roles to provide healthcare service to the public. The high patient volume and workload that healthcare providers were subjected to when offering care services justified conducting the study among healthcare providers in public hospitals in Uasin Gishu County.

The study targeted healthcare providers with at least 2-years of experience in various roles in the healthcare sector, including nurses, physicians, physician assistants, clinical pharmacists and social workers among others. Healthcare administrators and other hospital staff who did not offer care services directly to patients were excluded. A convenient sampling method was utilized to select healthcare providers from each of the selected public hospitals to obtain a sample size of 163 study participants.

4.2 Study Instruments.

Emotional self-regulation was measured using a Self-Administered Health Service Employee Questionnaire (SAHS-EQ), which featured a validated 15-item instrument scored based on a 5-point Likert scale ranging from 1 to denote strongly disagree to 5 showing strongly agree. The total scores to the items were computed with <25 points indicating low levels of emotional self-regulation. Employee productivity was measured by 15 questionnaire items that were also scored based a 5-point Likert scale that ranged from 1 to 5. Respondents' productivity scores ranged from a minimum of 27 to a maximum of 66, whereby the minimum score of 27 reflected that certain individuals were operating at the lower end of the productivity scale, potentially facing challenges that affected their overall performance.

4.3 Ethical Considerations.

Ethical approval was obtained from KCA University and research permits were obtained from NACOSTI and county authorities. Study participants were required to give informed consent prior to participating in the study. Data were collected using self-administered structured questionnaires.

4.4 Data Analysis

Data was entered and analyzed using SPSS version 26. Descriptive statistics was computed to summarize the demographic profile of the study participants and level of emotional self-regulation. Pearson's correlation analysis was performed to determine the relationship between emotional self-regulation and employee productivity with the statistical significance set at $p<0.05$.

5. Results

5.1 Demographic Characteristics

A total of 131 healthcare providers participated in the study. Majority of the study participants were female (59.5%). Most respondents had ages between 41 and 50 years with the least age group consisting of participants aged below 30 years. Participants who had attained a Bachelor's degrees were the majority including 53 participants (40%). Regarding working experience, most of the participants having 11 to 20 years of experience (40%) and substantial number having 5-10 years of work experience in the healthcare sector (20.6%). Nurses made up the largest group of participants (33.6%) followed by doctors (24.4%).

Table 1: Demographic Characteristics

Demographic Characteristics		Frequency, N (%)
Gender	Female	53 (40.5%)
	Male	78 (59.5%)
Age group	<30 years	6 (4.58%)
	31-40 years	40 (30.53%)
	41-50 years	48 (36.64%)
	> 50 years	37 (28.24%)
Level of Education	Diploma	53 (40%)
	Bachelor's degree	46 (36%)
	Master's degree	30 (23%)
	Doctoral (PhD.)	2 (2%)
Work Experience	< 5 years	18 (13.7%)
	5-10 years	27 (20.6%)
	11-20 years	53 (40%)
	> 20 years	33 (25.2%)
Current Job Position	Nurse	44 (33.6%)
	Doctor	32 (24.4%)
	Clinical officer	16 (12.2%)
	Medical assistant	11 (8.4%)
	Social worker	14 (10.7%)
	Health specialists	14 (10.7%)

5.2 Emotional self-regulation and Employee productivity

Most respondents demonstrated high levels of emotional self-regulation (80, 61.1%) while 46 participants had moderate emotional self-regulation levels (35.1%) and 5 (3.8%) had low emotional self-regulation levels. Pearson's correlational analysis showed a very weak negative insignificant correlation between emotional self-regulation and employee productivity (r = -0.081), denoting high emotional self-regulation influenced low employee productivity.

Table 2: Emotional self-regulation Levels

Level of Self-management	Frequency (n)	Percentage (%)
High Self-management	80	61.1%
Low Self-management	5	3.8%
Moderate Self-management	46	35.1%

Correlation		
		Employee productivity
Self-management	Pearson Correlation (r)	-0.081
	Sig. (2-tailed)	0.355

6. Discussion

This study demonstrated there was no significant relationship between emotional self-regulation and employee productivity among healthcare providers in Uasin Gishu County, Kenya. The findings contrasted from past studies indicating that levels of emotional self-regulation significantly influenced employee productivity (Kiage et al., 2025). Moreover, the study found a very weak negative correlation between emotional self-regulation and employee productivity among healthcare providers, which also contrasted from previous studies that demonstrated high levels of emotional self-regulation increased employee productivity in organizational settings (Popucza & Eriksson, 2025; Rani, 2022). Nevertheless, the study findings concurred with studies arguing the complexity of measuring the effect of individual adaptive attributes, including emotional self-regulation, on employee productivity (Shyton et al., 2025). This suggested that the contrasting findings of the study were potentially influenced by the use of non-standardized questionnaire items to assess the relationship between emotional self-regulation and employee productivity among healthcare providers.

7. Conclusion and Recommendations

This study found a very weak negative relationship between emotional self-regulation and employee productivity among healthcare providers in Uasin Gishu County, Kenya. This highlights a lack of a significant correlation between emotional self-regulation and employee productivity among healthcare providers. The findings establish emotional self-regulation as not a predictor of employee productivity and thus supports the null hypothesis. Based on the findings, the study recommends adoption of effective strategies that help in the assessment of individual factors that influence employee productivity. The study recommends future studies focus on developing conceptual frameworks that enable measurement of emotional self-regulation on employee

productivity, which will standardize how their relationship is determined in diverse organizational settings.

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THE ROLE OF SCHOOL MANAGEMENT PRACTICES ON THE ACADEMIC PERFORMANCE OF PRIVATE SECONDARY SCHOOLS: A CASE STUDY THE KAJIADO COUNTY KENYA

MUTISYA CHRISTINE MUTHEU

Abstract

Education is universally acknowledged as a cornerstone for individual empowerment, social transformation, and national development. It serves as the foundation upon which societies build human capital, foster innovation, and achieve sustainable growth. Effective school management, therefore, plays a crucial role in ensuring that educational institutions fulfill their fundamental purpose of nurturing learners, promoting intellectual growth, and shaping responsible and productive citizens. This study examined the role of school management practices on the academic performance of private secondary school students in Isinya Sub-County, Kajiado County. Specifically, it sought to determine how curriculum implementation procedures, quality assurance mechanisms, availability and utilization of teaching and learning materials, resource mobilization, and monitoring and evaluation processes influence student academic outcomes. The research was motivated by the growing concern over disparities in academic performance among private secondary schools despite the availability of resources and qualified personnel. The study was anchored in Instructional Leadership Theory, which posits that effective school leaders enhance student learning outcomes by actively supporting and supervising teaching and learning processes. Leadership activities such as curriculum supervision, classroom observation, teacher mentoring, and data-driven decision-making were emphasized as essential components of effective school management. A qualitative research design was adopted to gain deeper insights into how management practices translate into student achievement. The quantitative analysis was also used to give the existing relationship between school management practices and students performance. Data was collected through questionnaires and interviews administered to a sample of 78 respondents, including principals, teachers, and other stakeholders, selected through purposive and simple random sampling techniques. The data collected were analyzed descriptively using percentages and presented alongside detailed narrative explanations to provide a comprehensive interpretation of the findings. Findings from the study contributed to a deeper understanding of how specific management practices influence academic performance in private secondary schools. The results offered valuable implications for education policymakers, school administrators, and consultants by highlighting practical strategies for strengthening instructional quality, teacher motivation, and learner achievement. Ultimately, the study concluded that strong instructional leadership, supported by effective management systems, is a key driver of educational excellence and a crucial pathway toward sustained improvement in student performance within private secondary schools.

MEDIATING ROLE OF LEADERSHIP STYLE ON THE RELATIONSHIP BETWEEN CHURCH SPONSORSHIP AND ORGANIZATIONAL CULTURE IN SELECTED PRIVATE UNIVERSITIES IN NAIROBI, KENYA

MUTIE WAMAITHA

Abstract

This study concerns an exploration of the mediating role of leadership style on the relationship between church sponsorship and organizational culture in selected private universities in Nairobi, Kenya. The study stemmed from the recognition of the significant role that organizational culture plays in shaping the identity, values, and operations of educational institutions. The study was undertaken between August and September 2024. The study sought to achieve four specific objectives: to assess how the sponsor's involvement in governance influenced the organizational culture of selected private universities in Nairobi, Kenya; to determine the organizational culture of selected private universities in Nairobi, Kenya; to assess how the sponsor's material support influenced the organizational culture of selected private universities in Nairobi, Kenya; and, to determine whether leadership style mediates the impact of church sponsorship on organizational culture of selected private universities in Kenya. The research was quantitative in nature and adopted a correlational design, grounded in both resource dependence theory and stakeholder theory. The target population was 474 university staff comprising faculty, heads of departments and deans of schools. A sample size of 217, representing 45.8% of the target population, was selected via disproportionate stratified sampling technique. Data was collected using standardized instruments such as Denison et al.'s (2014) Organizational Culture Survey Questionnaire, the Multifactor Leadership Questionnaire by Bass and Avolio (1996), and a researcher-developed Likert scale questionnaire for measuring church sponsorship. The questionnaires were administered online using Google Forms. Instrument reliability was determined using Cronbach's alpha while instrument validity was ascertained through thorough review of literature and expert review by the thesis supervisors. Data was analyzed using mean and standard deviation scores as well as correlation and regression analysis in SPSS. The data was presented using figures and tables. Results showed a positive relationship between sponsor involvement in governance and organizational culture, indicating that increased sponsor participation improves organizational culture. A similar positive relationship between sponsors' material support and organizational culture was established, suggesting that more material support leads to better organizational culture. Majority of respondents rated the organizational culture as excellent. However, leadership style does not significantly mediate the relationship between church sponsorship and organizational culture. Conclusion was drawn that church sponsorship has a positive impact on organizational culture. In practice, sponsors should prioritize board representation and engage in student life and academic initiatives. Institutions should foster structured and formalized engagements between sponsors and key academic and student leaders to enhance organizational culture, with leadership style playing no significant mediating role. Policymakers within church-sponsored universities should develop clear guidelines on the role of sponsors in governance, focusing on strategic rather than operational engagement. Governance frameworks should be

reviewed to ensure that sponsors maintain a strong presence on university boards without micromanaging daily administrative functions. Future studies should adopt a mixed-methods approach so as to yield a more comprehensive investigation of the mechanism through which church sponsorship influence organizational culture. Future research should also include non-church-sponsored private universities in Nairobi or other regions in Kenya. In addition, future research should incorporate student perspectives by expanding the participant pool to include students alongside administrators, faculty, and staff.

ROLE OF UNDERLYING DYNAMICS ON QUALITY OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING PROGRAMMES WITHIN THE NATIONAL YOUTH SERVICE – KENYA

ODIWA JACK JECONIA OWAGA

Abstract

In a global learning environment, technical vocational education, and training (TVET) programmes interact with diverse range of dynamic factors, collectively shaping the quality and efficacy of such programmes. Ideally, TVET programmes play a crucial role in the global education landscape, providing skills and training essential for the workforce. The National Youth Service (NYS) in Kenya plays a crucial role in empowering young people through TVET programmes. NYS trains over 45,000 Kenyan youth each calendar year making it a bigger stakeholder in youth skills development. Despite numerous efforts by various stakeholders in ensuring quality education in TVET programmes in the NYS, the role dynamic factors play in ensuring the quality of such programmes is understudied. The study examines how underlying dynamics affiliated with resource mobilization, resource allocation, resource utilization and program policies impact quality of the TVETs. The focus was on quality assurance systems, task performance, and the trainees-to-trainer ratio in NYS-Kenya. Therefore, this study analysed the role of underlying dynamics on quality of technical, vocational education and training programmes within the NYS - Kenya. The study aimed at meeting the following objectives: to examine the role of resource mobilization on the quality of TVET programmes in NYS-Kenya; to determine how resource allocation influences the quality of TVET programmes in NYS-Kenya, to evaluate the influence of resource utilization on the quality of TVET programmes in NYS-Kenya and to analyse the existing TVET programme policies influence on the quality of TVET programmes in NYS-Kenya. The study is theoretically founded on Resource Mobilization Theory and Policy Implementation Theory. The relationship between the investigated variables was determined by descriptive research design, which adopted purposive sampling and basic random sampling on the sample size of 37 respondents who participated in the study as representation of the 567 population of NYS TVET principals and trainers. Structured questionnaires, interview guides and secondary data sources were used to collect data. A pilot group of 4 respondents from NYS Vocational Training Institute in Nairobi was involved to evaluate the validity and reliability of the semi-structured questionnaire that was used in data collection. Raw data acquired from the respondents was organised for analysis using both Microsoft 365 Excel and SPSS 27.0 for descriptive and inferential statistics. Correlation and regression analysis was used for the inferential statistics while the standard deviation, mean, percentages and frequencies were for the descriptive statistics. Application of visual figures, charts and tables, to realise interpretation of the findings is employed. The study show that, all the variables except resource mobilization were positively correlated, an indication that variations in TVET skills quality was influenced by the Resource Allocation, Resource Utilization, and Policy on the TVET Skills Quality.

IMPACT OF PRINCIPALS' LEADERSHIP APPROACHES ON THE TYPES OF EXTRACURRICULAR ACTIVITIES THAT STUDENTS PARTICIPATE IN IN PUBLIC SECONDARY SCHOOLS IN MAKADARA SUBCOUNTY, NAIROBI, KENYA

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Abstract

The importance of extracurricular activities in fostering the psychological and intellectual development of students has been recognized globally, particularly in countries such as the United States of America (U.S.A), Jamaica, Germany, England, and China. In Kenya, these activities play a crucial role in providing students with a holistic education, contributing significantly to their social development from preparatory to college levels. The aim of this study is to examine impact of principals' leadership approaches on performance of public secondary school students in extra-curricular activities in Makadara Sub County. The main objective of this journal paper was to find out the types of extracurricular activities that students participate in public secondary school in Makadara Sub County. The study was underpinned to relationship theory and contingency theory of leadership. Adopting a correlational research design, the proposed study justifies its approach for examining leadership impacts on student performance. The target population were principals, teachers in charge of extracurricular activities, and students participating in these programs, totaling 266. The study adopted stratified sampling approach, where the Israel formula, was used to arrive at a sample of 160 participants. This study used questionnaires and in-depth interviews to gather information. Data analysis was conducted using SPSS Version 26. Qualitative data underwent content analysis to interpret respondents' information. Frequencies, percentages, means, and standard deviations were computed and presented in the form of tables and figures. The study revealed that democratic and transformational styles positively impact student involvement in extracurricular activities. Principals who foster supportive environments see her student engagement and achievement. The study is significant for policymakers, school leaders, and future researchers. It recommends adopting inclusive leadership styles, engaging teachers in creating welcoming environments, and encouraging student participation. The Ministry of Education should develop policies emphasizing extracurricular activities as essential for students' personal growth, academic success, and skill development.

Key Words: extracurricular activities, student participation, principals'leadership approaches, student participation, public secondary schools, school leadership.

INTRODUCTION

Globally, the leadership approaches of school principals have a profound impact on students' involvement and success in extracurricular activities, as evidenced in countries such as the United States and the United Kingdom. In the United States, principals utilize various leadership styles—such as transformational, transactional, and distributed leadership—to boost student engagement and achievement in these activities (Anderson, 2021). Transformational leadership, which emphasizes motivating and inspiring students, has been linked to higher participation and success rates in extracurricular programs like sports, music, and debate clubs (Johnson, 2020).

This approach encourages a shared vision and fosters enthusiasm, allowing students to excel and develop essential skills through active involvement. In contrast, transactional leadership, which relies on a system of rewards and punishments, has proven less effective in maintaining sustained student interest in extracurricular activities (Miller, 2022). Although transactional leadership can produce short-term outcomes, its limited focus on intrinsic motivation often reduces students' commitment to these activities, impacting their overall growth and success.

Extracurricular activity programs are acknowledged as the most significant vehicles for learners' emotional and cognitive growth in the USA of America (U.S.A.), the Caribbean, England, France, Germany, and Chinese. Students require methods of displaying their feelings as well as how to navigate with society at large, according to Jamalis and Fauzee (2018), who also note that these activities have emerged as an intrinsic component of their learning process and that teaching has been considered as the formation of an intact brain and soul.

In Kenya, transformational and instructional leadership approaches are more prevalent among principals, who actively encourage student participation in extra-curricular activities (Mwangi & Njenga, 2022). These principals recognize the value of these activities in holistic education and provide the necessary support, leading to improved student outcomes in areas such as athletics, music, and environmental clubs (Kamau & Wanjiru, 2023). The positive attitude of these principals towards extra-curricular activities is crucial, as it fosters an environment where students are motivated to excel both academically and in other areas of interest (Njoroge, 2024).

LITERATURE REVIEW

Extracurricular activities are structured programs outside the standard curriculum that provide students with opportunities for personal growth, skill development, and social interaction (Biddle & Asare, 2019) The types of these activities in which students participate significantly influences their overall development and school engagement. Research indicated that increased involvement in extracurricular activities fosters skills such as teamwork and leadership Furthermore, students engaged in multiple activities often demonstrate improved academic performance and social integration (Eccles & Barber, 1999), underscoring the importance of diverse participation opportunities.

King and Brigham (2021) examined the correlation between student success and types of extracurricular activities in Northern Oshawa High School and Downtown Oshawa. Utilizing data from 690 surveys and 27 one-on-one interviews, they investigated how extracurricular and leisure

pursuits impact the academic success of undergraduate university students. The results indicated that more than one-third of the participants engaged in extracurricular activities, with the majority reporting that these activities contributed to their success. While the aforementioned study was conducted in a foreign country, the study aimed to address this gap by examining the types of extracurricular activities in which students participate in public secondary schools in Makadara Sub County.

Extracurricular activities play a crucial role in enhancing curriculum goals and fostering holistic development among students. Kamau and Bulinda (2020) aimed to explore the impact of participation in competitive extracurricular activities, such as sports, music, and drama, on the self-concept of secondary school students in Kenya's Central Region. Employing an Ex-post Facto research design, they collected data from 1,408 participants in regional championships, utilizing self-concept inventory questionnaires and school records examination. Analysis using independent t-test and Two-way ANOVA revealed significantly higher self-concept scores among participants (73.93±13.56) compared to non-participants (54.15±22.90), affirming the positive impact of extracurricular engagement on student self-concept. Shifting focus to public secondary schools in Kenya, the study examined the spectrum of extracurricular activities in which students participate in Makadara Sub County.

METHODOLOGY

The chosen research design was correlational research design. This is justifies because it directly focuses on measuring the relationship or association between two or more variables without manipulating them, making it ideal for calculating correlation indices like Pearson or Spearman correlation (Orodho (2019). This approach was justified for examining the impact of principals' leadership approaches on the performance of public secondary school students in extracurricular activities in Makadara Sub County, Nairobi City County. This research design was appropriate since the study allowed a systematic collection of data on the leadership styles of principals and their impact on student participation, attendance, awards, and overall engagement in extracurricular activities.

In Makadara Sub County, there are currently 12 public secondary schools, namely Makongeni Secondary School, Huruma Girls' High School, Buruburu Girls Secondary School, Our Lady Of Mercy South B Secondary School, Ofafa Jericho Boys High School, Nile Road Girls Secondary School, Aquinas High School, St Patrick Secondary School, St. Annes Girls Secondary School, Ofafa Jericho Secondary School, Star of Hope Secondary School and The Highway Secondary. The study focused on principals, teachers in charge of extracurricular activities, and students participating in these programs, totaling 266 respondents. This number was derived from records of student participation from November 2023 to April 2024, maintained by the Education County Office (2024), ensuring a comprehensive representation of the target population involved in extracurricular activities during the specified period.

ANALYSIS AND FINDINGS

In this study, structured questionnaires were distributed to 25 teachers overseeing extracurricular programs and 128 students participating in these activities. Interviews were conducted with 6 principals. The response rates for each group were as follows: out of 7 principals, 6 responded (85.7% response rate); 20 out of 25 teachers participated (80% response rate); and 120 out of 128 students engaged (93.8% response rate). Overall, 146 out of 160 respondents completed the survey, resulting in a total response rate of 91.25%. This indicates a high level of engagement among participants, contributing to the study's robustness. The response rate is considered good as it meets the recommended standard for research, which is above 50%, as suggested by Bryman & Bell (2015). This suggests that the findings are reliable and valid.

DESCRIPTIVE ANALYSIS OF STUDY VARIABLES

Students' Performance in Extra- Curricular Activities

The dependent variables were students' performance in extra- curricular activities**.** Table 1.1 shows the results

TABLE 1.1: Students' Performance in Extra- Curricular Activities

Statements	N	Mean	Std. Deviation
The students' performance in school is commendable	20	3.49	1.002
Democratic leadership approach used by principals positively affects students' performance in extracurricular activities	20	3.71	0.875
Servant leadership approach used by principals negatively affects students' performance in extracurricular activities	20	3.70	0.870
Aggregate		3.292	0.899

Source: Research Survey Data (2024)

Participants generally perceived the students' performance in extracurricular activities as commendable, with a mean score of 3.49 (SD = 1.002). This indicates that respondents recognized a level of success in students' engagement in these activities. Additionally, there was strong agreement that the democratic leadership approach employed by principals positively affects students' performance in extracurricular activities, evidenced by a mean score of 3.71 (SD = 0.875). This suggests that participants believe that a participative and inclusive leadership style fosters greater student involvement and achievement. Conversely, the findings also indicate a belief that the servant leadership approach used by principals negatively affects students' performance in extracurricular activities, as shown by a mean score of 3.70 (SD = 0.870). This could imply that, while students appreciate the support often associated with servant leadership, they may perceive it as insufficient in driving their performance in extracurricular engagements. These findings are consistent with research conducted by Okafor (2020), who found that

democratic leadership styles significantly enhance student participation and performance in extracurricular activities in Nigerian schools. Similarly, Ijeoma (2019) noted that while servant leadership fosters a supportive environment, it may not be as effective in promoting active engagement and high performance in extracurricular contexts. The aggregate mean score of 3.292 (SD = 0.899) highlights a mixed perception of the various leadership styles in relation to students' performance in extracurricular activities.

Principals were first asked how they track and celebrate the achievements of students in extracurricular activities. Most principals mentioned that they maintain records of all student accomplishments, from sports competitions to academic contests, and celebrate these through assemblies, award ceremonies, and newsletters. One principal noted, “Recognizing students’ achievements publicly creates a sense of pride and motivates others to participate and excel.” Regarding the leadership approaches used to encourage students to excel, principals highlighted the importance of fostering a culture of excellence through transformational leadership, where students are motivated to push beyond their limits. Another principal added, “I encourage students to set personal goals and challenge them to achieve excellence by providing guidance and resources.”

When asked about measuring student retention rates in extracurricular activities, principals shared that they track attendance and participation across various programs, noting trends in student involvement over time. They highlighted factors such as offering diverse and engaging activities, strong teacher mentorship, and a supportive school culture as contributors to high retention rates. As one principal explained, “Retention is driven by creating activities that students are passionate about and by ensuring they feel supported throughout their involvement.”

When asked about the impact of students' backgrounds on their interests in extracurricular activities, principals agreed that socioeconomic factors, family support, and cultural expectations significantly influence participation. Principals shared that students from well-supported backgrounds are often more engaged, while others face barriers such as financial constraints or parental opposition. One principal explained, “Some students come from families where education is seen strictly as academic, which can discourage participation in activities perceived as non-essential.” To address this, principals employ democratic leadership approaches, creating inclusive programs that cater to students from diverse backgrounds and ensuring that everyone has equal access to extracurricular activities. A principal shared, “We ensure that all students, regardless of background, can participate by offering financial support and making activities accessible.”

Principals emphasized that a positive and supportive environment is crucial for student engagement. Schools that offer safe spaces, modern facilities, and enthusiastic staff see higher participation rates. One principal remarked, “The physical and emotional environment of the school plays a huge role in whether students feel motivated to participate.” Initiatives to create a conducive environment include improved sports facilities, accessible clubs, and a culture that celebrates diversity in activities. Principals mentioned they focus on creating opportunities for all students, stating, “We constantly evaluate our programs to ensure we are meeting the needs of our students and encouraging them to participate.”

Table 1.2: Descriptive Statistics for Types of Extracurricular Activities

Statements			
Teachers Response	N	Mean	Std. Deviation
Sports and Athletics impact students' performance of public secondary school.	20	3.93	0.736
Clubs and societies impact students' performance of public secondary school.	20	3.91	0.380
The student's engagement in sports and athletics activities is high.	20	4.00	0.576
Students Response			
I participate regularly in sports activities organized by my school	120	3.87	0.923
I am actively involved in one or more school clubs or societies	120	3.67	0.979
I often engage in a variety of extracurricular activities offered by my school	120	3.70	0.897
Aggregate		3.84	0.75

Source: Research Survey Data (2024)

The descriptive statistics in Table 4:6 reveal that sports and athletics are the most common extracurricular activities in public secondary schools. Teachers rated on the impact of sports and athletics on student performance highly, with a mean of 3.93 and a standard deviation of 0.736, indicating their belief that these activities positively influence academic outcomes. Furthermore, teachers reported that student engagement in sports is notably high, with the highest mean of 4.00 (SD = 0.576), suggesting that a significant number of students participate in these activities. This view is supported by the students themselves, who reported regular involvement in sports with a mean of 3.87 (SD = 0.923). These findings highlight that sports and athletics are the most popular extracurricular activities among students.

In contrast, involvement in clubs and societies is less common. While teachers also recognized the positive impact of clubs and societies on student performance, with a mean of 3.91 (SD = 0.380), students reported lower participation levels in these activities, with a mean of 3.67 (SD = 0.979). The higher standard deviation among student responses suggests variability in their involvement, with some students being actively engaged while others are not. Despite this, clubs and societies still contribute positively to student life, though they are not as popular as sports and athletics.

Additionally, students indicated moderate engagement in a variety of extracurricular activities, as shown by a mean of 3.70 (SD = 0.897), reflecting that while they participate in a range of activities, sports remain their primary focus. The aggregate mean of 3.84 (SD = 0.75) indicates an overall positive level of engagement in extracurricular activities, with sports and athletics clearly dominating in terms of popularity and impact on student performance.

These findings align with similar studies, such as Mwangi (2021) and Kimani (2019), which found that participation in sports and other extracurricular activities significantly enhances students' academic and social outcomes. Okoro (2020) also emphasized the role of extracurricular engagement in promoting holistic student development, reinforcing the notion that such activities are essential for improving students' performance in both academic and non-academic areas.

In-depth interviews were conducted with principals from the selected secondary schools to gather insights on their perspectives regarding extracurricular activities, student participation, and engagement strategies.

When asked about the types of extracurricular activities offered at their schools, the majority of the principals stated that their schools provide a diverse range of activities, including sports, athletics, clubs, and societies. These activities are designed to cater to the different interests and talents of students, ensuring that everyone has the opportunity to participate.

Regarding the participation rate of students in sports and athletics, most principals assessed it as high, particularly during inter-school competitions and tournaments. They noted that sports are a popular extracurricular activity among students, with strong attendance at practices and events. However, some principals indicated that participation could vary depending on the season and students' academic workloads.

1.1 Students' Performance in Extracurricular Activities

Lastly, the study examined students' performance in extracurricular activities, highlighting the important role that extracurricular engagement plays in the overall development of students. Students who were highly involved in extracurricular activities reported higher levels of personal satisfaction and academic achievement. This aligns with the findings of Obi (2019), who reported a positive correlation between extracurricular participation and academic success in secondary schools.

The study revealed that students who felt empowered by their principals and encouraged to participate in extracurricular activities performed better in both academic and non-academic areas. This underscores the importance of extracurricular programs as part of a holistic education system that goes beyond classroom instruction. By participating in these programs, students develop critical skills such as leadership, time management, and teamwork, which contribute to their overall success.

The implication here is that schools should continue to promote and invest in extracurricular activities as an essential part of the student experience. Ensuring that students are given ample opportunities to participate in and excel in these activities can enhance their academic performance and personal development, preparing them for future challenges.

1.2 Types of Extracurricular Activities

The study showed a significant correlation between the types of extracurricular activities available in schools and the overall performance of students. Students who participated in a variety of extracurricular activities tended to exhibit better academic and personal development outcomes. The findings align with those of Adeyemi (2018) in Nigeria, who found that students with access to diverse extracurricular activities performed better academically and socially. The opportunities created by these activities help students develop a sense of responsibility, teamwork, and leadership, skills that are transferable to their academic pursuits. The implication is that schools with a broader range of extracurricular offerings may provide better platforms for holistic student development. This underscores the importance of investing in a variety of programs that cater to students' diverse interests and talents.

Model Summary

The regression model summary presented in Table 1.2 reveals the relationship between various predictors and students' performance in extracurricular activities.

Table 1.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	0.676	0.670	1.19492

a. Predictors: (Constant), Principals' Leadership and Performance of Students, Leadership Approaches, Types of Extracurricular Activities, Attitude of Principals and Application

ANOVA summary

An R Square value of 0.676 indicated that around 67.6% of the variation in student performance could be explained by the model, emphasizing the substantial influence of these factors on student engagement and success. Furthermore, the Adjusted R Square value of 0.670 confirmed the model's reliability even when accounting for specific predictors, and the standard error of the estimate, at 1.19492, was acceptable, reflecting minor deviations of observed values from predictions. The findings agree with studies by King and Brigham (2021) who examined the correlation between student success and types of extracurricular activities in Northern Oshawa High School and Downtown Oshawa. The results indicated that more than one-third of the participants engaged in extracurricular activities, with the majority reporting that these activities contributed to their success. Drawing from these findings, the study suggests that universities promote and endorse student clubs and activities to foster a sense of community and facilitate skill development.

The Coefficients

The correlation coefficient (R) is 0.822, indicating a strong positive relationship between the independent variables and the dependent variable. This suggests that the combination of factors

such as principals' leadership, leadership approaches, the types of extracurricular activities, and the attitudes of principals significantly contributes to students' performance. The R Square value of 0.676 indicates that approximately 67.6% of the variance in students' performance can be accounted for by the model. This substantial explanatory power demonstrates that the selected predictors are influential in understanding how leadership and extracurricular engagement affect student outcomes. Additionally, the Adjusted R Square of 0.670 shows that the model retains its strength when adjusted for the types of predictors included, signifying a good fit for the data. The standard error of the estimate, at 1.19492, indicates the average distance that the observed values deviate from the predicted values in the regression model, which is considered acceptable in this context. These findings imply that effective principals' leadership, supportive leadership approaches, a greater type of extracurricular activities, and positive attitudes significantly enhance students' performance in extracurricular activities. This underscores the importance of cultivating these factors to improve student engagement and success, aligning with previous studies that highlight the positive impact of leadership on student outcomes.

DISCUSSIONS

This study explored the dynamics between extracurricular activities, leadership approaches, the attitude of principals, and their application, and the relationship between principals' leadership styles and the performance of students in extracurricular activities. Each area examined provided insights into the impact of these variables on students' overall engagement, development, and success in public secondary schools within Makadara Sub County. The findings reveal important correlations and trends that contribute to understanding how schools can foster better student performance through well-structured extracurricular programs and effective leadership. The study showed a significant correlation between the types of extracurricular activities available in schools and the overall performance of students. Students who participated in a variety of extracurricular activities tended to exhibit better academic and personal development outcomes. The findings align with those of Adeyemi (2018) in Nigeria, who found that students with access to diverse extracurricular activities performed better academically and socially. The opportunities created by these activities help students develop a sense of responsibility, teamwork, and leadership, skills that are transferable to their academic pursuits. The implication is that schools with a broader range of extracurricular offerings may provide better platforms for holistic student development. This underscores the importance of investing in a variety of programs that cater to students' diverse interests and talents. The study examined students' performance in extracurricular activities, highlighting the important role that extracurricular engagement plays in the overall development of students. Students who were highly involved in extracurricular activities reported higher levels of personal satisfaction and academic achievement. This aligns with the findings of Obi (2019), who reported a positive correlation between extracurricular participation and academic success in secondary schools.

The study revealed that students who felt empowered by their principals and encouraged to participate in extracurricular activities performed better in both academic and non-academic areas. This underscores the importance of extracurricular programs as part of a holistic education system that goes beyond classroom instruction. By participating in these programs, students develop

critical skills such as leadership, time management, and teamwork, which contribute to their overall success.

The implication here is that schools should continue to promote and invest in extracurricular activities as an essential part of the student experience. Ensuring that students are given ample opportunities to participate in and excel in these activities can enhance their academic performance and personal development, preparing them for future challenges.

CONCLUSIONS OF THE STUDY

The findings reveal that students in Makadara Sub County predominantly participate in sports and athletics, which are highly valued for their positive impact on performance and engagement. While clubs and societies also contribute to student development, their participation levels are lower than those in sports. Overall, the emphasis on sports highlights its importance as a central extracurricular activity in fostering student involvement and enhancing academic performance within public secondary schools in the region.

The findings reinforced the conclusion that participation in extracurricular activities is vital for enhancing students' overall performance. Engaging in diverse extracurricular programs significantly contributes to personal growth, academic achievement, and the development of essential life skills such as teamwork and leadership. Therefore, the study emphasizes the integral role of extracurricular activities in fostering well-rounded individuals who are better prepared for future challenges.

Implications and Recommendations of the Study

Secondary school principals are encouraged to foster inclusive leadership by adopting democratic and transformational approaches that actively engage both teachers and students. Involving stakeholders in decision-making processes regarding extracurricular activities will cultivate a sense of ownership and motivation among students. Teachers involved in extracurricular activities should actively engage students by creating an inclusive and welcoming environment. Utilizing engaging teaching methods and providing mentorship can foster connections with students and motivate them to participate. Students are encouraged to actively participate in extracurricular activities, as these programs provide valuable opportunities for personal growth, skill development, and social interaction. Engaging in various activities can enhance both academic and non-academic performance. Students should also explore a variety of extracurricular options to discover their interests and talents, which can lead to well-rounded development and an improved overall school experience. The Ministry of Education should develop clear policy frameworks emphasizing the importance of extracurricular activities within the school curriculum. These policies should promote the integration of extracurricular programs into the educational system and provide guidelines for schools to follow. It is highly recommended that further research be conducted to explore several areas. Firstly, future studies could investigate the specific leadership styles that yield the most positive outcomes in diverse educational contexts, particularly in varying socioeconomic settings. Additionally, examining the role of teacher involvement and collaboration

in enhancing student participation and performance in extracurricular activities would provide a more comprehensive understanding of the dynamics at play. It would also be beneficial to conduct longitudinal studies to assess the long-term effects of principals' leadership approaches on student engagement and achievement beyond secondary school. Finally, comparative studies involving different regions or countries could offer valuable insights into how cultural and contextual factors influence leadership effectiveness in fostering student involvement in extracurricular activities.

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INVESTIGATING LEADERSHIP SKILLS UTILIZED BY PRINCIPALS IN THE MANAGEMENT OF STUDENTS EXPOSED TO DRUGS: A CASE STUDY OF PUBLIC SECONDARY SCHOOLS IN EMBAKASI SUBCOUNTY, KENYA

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Abstract

Drug and substance abuse among secondary school students represents a persistent educational, social, and public health challenge globally and within the Kenyan context. Adolescence is a critical developmental phase marked by identity formation, experimentation, emotional vulnerability, and strong peer influence, which collectively increase susceptibility to substance use. In school environments, exposure to drugs manifests through declining academic performance, chronic absenteeism, indiscipline, violence, and increased school dropout rates. The purpose of this study was to examine leadership skills utilized by principals in the management of students exposed to drugs in public secondary schools in Embakasi Subcounty, Nairobi City County, Kenya. Guided by Transformational Leadership Theory and Situational Leadership Theory, the study adopted a descriptive survey research design. A sample of 170 respondents comprising principals, teachers, school counsellors, students, and Parent–Teacher Association representatives was selected using simple random sampling techniques. Data were collected using structured questionnaires and interview schedules and analysed using SPSS version 26 through descriptive statistics and Pearson correlation analysis. The findings revealed a strong positive relationship (R = 0.753) between principals' leadership skills and effective management of students exposed to drugs. Leadership practices related to community engagement, counselling, inclusive decision-making, and conflict resolution emerged as significant predictors of effective management outcomes. The study concludes that strengthening leadership competencies among principals is essential for promoting learner discipline, psychosocial well-being, and sustainable drug prevention strategies. The findings have important implications for educational leadership training, school policy development, and the institutionalisation of collaborative school–community partnerships.

Keywords: Leadership skills; School principals; Drug exposure; Secondary schools; Counselling; Educational leadership; Kenya.

1. Introduction

Drug and substance abuse among adolescents has become a major concern for education systems worldwide due to its adverse effects on learning, behaviour, and long-term life outcomes. Adolescence is characterised by rapid physical growth, emotional development, and social

reorientation. During this period, young people seek independence, peer approval, and identity formation, often experimenting with risky behaviours such as alcohol, tobacco, and illicit drugs.

Globally, substance use among young people contributes significantly to health complications, crime, and social instability. Early initiation into drug use is associated with addiction, mental health disorders, impaired cognitive development, and reduced economic productivity later in life. Schools frequently become the first institutions to experience the consequences of adolescent drug use through indiscipline, academic decline, violence, absenteeism, and school dropout.

In sub-Saharan Africa, rapid urbanisation, unemployment, poverty, and the erosion of traditional family and community structures have intensified adolescents' exposure to drugs. Urban informal settlements present environments where drugs are readily available, law enforcement is inconsistent, and adult supervision is limited. Schools operating in such contexts face complex challenges in maintaining discipline and safeguarding learner well-being.

In Kenya, reports by the National Authority for the Campaign Against Alcohol and Drug Abuse indicate rising levels of alcohol, tobacco, bhang, and synthetic drug use among secondary school students. Nairobi City County, particularly Embakasi Subcounty, is among the most affected regions due to high population density, economic inequality, and proximity to drug distribution networks. Public secondary schools in this subcounty frequently report drug-related disciplinary cases that disrupt teaching and learning processes.

School principals are mandated to provide leadership that ensures discipline, safety, and holistic learner development. However, existing Kenyan studies have largely focused on the prevalence and effects of drug abuse, with limited emphasis on leadership skills utilised by principals in managing affected students. This study addresses this gap by examining leadership practices employed by principals and their influence on the management of students exposed to drugs.

2. Literature Review

The literature on drug and substance abuse among adolescents highlights its multifaceted causes and consequences. Empirical studies consistently associate drug use with poor academic performance, behavioural challenges, absenteeism, school violence, and dropout. Within this context, school leadership has emerged as a critical factor in shaping student behaviour and school climate.

Transformational leadership has been widely associated with positive school cultures that promote learner engagement, ethical conduct, and shared responsibility. Principals who demonstrate transformational leadership tend to foster supportive environments that discourage risky behaviours and encourage pro-social conduct.

Community engagement is recognized as a key strategy in preventing and managing drug abuse among students. Schools that collaborate with parents, community leaders, religious organisations, health professionals, and law enforcement agencies are better positioned to address the root causes of substance use. Such partnerships facilitate awareness creation, early intervention, and referral to counselling and rehabilitation services.

Decision-making processes within schools also influence disciplinary outcomes. Participatory decision-making enhances transparency, fairness, and stakeholder support, while authoritarian approaches often generate resistance and recurrence of indiscipline. Conflict resolution and counselling skills address the psychosocial dimensions of drug use by promoting dialogue, accountability, and rehabilitation.

Despite extensive literature on these leadership dimensions, few studies have examined how they collectively influence the management of students exposed to drugs in Kenyan public secondary schools, particularly within urban contexts. This gap underscores the need for the present study.

3. Theoretical and Conceptual Framework

This study was anchored on Transformational Leadership Theory and Situational Leadership Theory. Transformational Leadership Theory emphasises shared vision, ethical influence, intellectual stimulation, and individualised consideration. In school contexts, transformational principals create positive school cultures that promote learner engagement and discourage drug use.

Situational Leadership Theory posits that effective leadership depends on adapting leadership styles to the readiness, needs, and circumstances of followers. Managing students exposed to drugs requires flexibility, as principals must balance discipline with empathy, counselling, and rehabilitation. These theories informed the conceptual framework by linking leadership skills to management outcomes.

4. Research Methodology

The study adopted a descriptive survey research design to examine leadership skills utilised by principals and their influence on the management of students exposed to drugs. The study was conducted in public secondary schools in Embakasi Subcounty, Nairobi City County.

The target population comprised principals, teachers, school counsellors, students, and Parent–Teacher Association representatives. A sample of 170 respondents was selected using simple random sampling to ensure representativeness. Data were collected using structured questionnaires and interview schedules.

Quantitative data were analysed using SPSS version 26 to generate descriptive statistics and Pearson correlation coefficients, while qualitative data were analysed thematically. Ethical approval was obtained from KCA University, and informed consent, confidentiality, and anonymity were strictly maintained.

5. Results and Findings

5.1 Collaborative community engagement strategies

This objective examined the effect of collaborative community engagement strategies used by principals in managing students exposed to drugs. Findings revealed that principals actively engaged parents, community leaders, religious organisations, and government agencies such as NACADA in addressing drug-related challenges. Community sensitisation programmes and parental involvement were reported to enhance early identification and timely intervention.

5.2 Decision-making processes employed by principals

The findings revealed that principals largely adopted inclusive, consultative, and policy-guided decision-making approaches. Students involved in drug-related cases were accorded fair hearings, enhancing transparency, accountability, and acceptance of disciplinary outcomes.

5.3 Conflict resolution skills used by principals

Results indicated that principals prioritised dialogue, mediation, and problem-solving approaches over punitive measures. These approaches reduced conflict escalation and recurrence of drug-related offences while promoting behavioral change.

> Conflict resolution strategies emphasising dialogue and mediation were found to be effective in addressing drug-related cases, reducing recurrence and improving learner behaviour.

5.4 Counselling skills used by principals

Findings indicated that principals demonstrated empathy and facilitated referrals to professional counsellors. Counselling services addressed psychosocial challenges and supported rehabilitation and reintegration of affected students.

5.5 Relationship between leadership skills and management of students exposed to drugs

Pearson correlation analysis revealed a strong positive relationship ($R = 0.753$) between principals' leadership skills and effective management of students exposed to drugs. Correlation analysis revealed a strong positive and statistically significant relationship between principals' leadership skills and effective management of students exposed to drugs, confirming the central role of leadership competencies

6. Discussion

The findings of this study demonstrate that principals' leadership skills significantly influence the management of students exposed to drugs in public secondary schools. The strong positive relationship between leadership skills and management outcomes supports Transformational Leadership Theory, which emphasises ethical influence, collaboration, and the creation of supportive school environments.

Community engagement emerged as a critical leadership practice, highlighting the importance of multi-stakeholder involvement in addressing adolescent drug exposure. Schools that collaborated with parents, community leaders, and external agencies were better positioned to implement preventive and rehabilitative interventions.

Decision-making, conflict resolution, and counselling skills further underscored the need for balanced leadership approaches that integrate discipline with empathy and support. These findings align with existing literature that advocates holistic, non-punitive strategies in managing student drug-related challenges.

7. Conclusion

The study concludes that leadership skills play a critical role in the management of students exposed to drugs in public secondary schools. Principals who demonstrate strong leadership competencies are better positioned to prevent drug exposure, manage disciplinary cases, and promote positive learner outcomes.

8. Implications and Recommendations

The findings of this study have important implications for educational leadership practice, policy formulation, and school management. Leadership training programmes should integrate modules on counselling, community engagement, ethical decision-making, and conflict resolution to enhance principals' capacity to manage drug-related challenges effectively.

The Ministry of Education and other education stakeholders should strengthen school-based counselling services by providing adequate staffing, resources, and continuous professional development. Schools should also institutionalise collaborative partnerships with parents, community leaders, health professionals, and law enforcement agencies to enhance preventive and rehabilitative interventions.

At the policy level, clear guidelines should be developed to support rehabilitative approaches to student drug exposure, emphasising counselling and reintegration rather than exclusionary disciplinary measures.

9. Study Limitations and Directions for Future Research

The study was limited by its descriptive research design and focus on a single subcounty, which may affect the generalisability of the findings. Future studies should expand to other regions and adopt mixed-methods or longitudinal designs to establish causal relationships and explore contextual variations in leadership practices.

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RELATIONSHIP BETWEEN COUNSELLING AND MARITAL QUALITY AMONG YOUNG COUPLES IN RUIRU SUB-COUNTY, KENYA

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Abstract

Marriage serves as a fundamental institution that unites individuals in companionship, requiring mutual commitment and emotional preparedness. Counselling plays a pivotal role in fostering marital stability by addressing potential challenges before and during marriage, including conflict resolution, financial management, intimacy issues, and communication barriers. This study examined the relationship between counselling and marital quality among young couples (married for 1–10 years) in Ruiru Sub-County, Kenya, focusing on three key dimensions: intimacy, anger management, and effective communication. The study was grounded in Bowen's Family Systems Theory, which emphasizes emotional differentiation and intergenerational transmission of relational patterns, and Carl Rogers' Person-Centered Theory, which highlights the importance of empathy and unconditional positive regard in therapeutic settings. Using an explanatory research design, the study collected data from 65 young couples through structured questionnaires, analysing responses via descriptive and inferential statistics, including correlation and regression analyses. Key findings reveal that intimacy is a critical predictor of marital quality, with couples reporting higher satisfaction when they foster emotional closeness and mutual understanding ($\beta = 2.224$, $p < 0.001$). Anger management also significantly influences marital stability, though its impact is mediated by constructive communication ($r = 0.934$, $p < 0.001$). Notably, professional counselling emerged as the most influential factor, explaining 97.1% of the variance in marital quality, compared to standalone training programs, which showed negligible effects. The study highlights socioeconomic and cultural moderators, such as income constraints (70.8% earn ≤ KShs 30,000/month) and religiosity (78.5% Christian), which shape counselling accessibility and effectiveness. Despite recognizing the benefits of counselling, many couples underutilize it due to stigma, financial barriers, or lack of awareness. The findings underscore the need for culturally adaptive, affordable, and accessible counselling interventions tailored to young couples in urbanizing African contexts. Recommendations include integrating counselling into community and faith-based programs, enhancing counsellor training, and developing tiered support systems to address varying marital needs. This study contributes to existing literature by providing empirical evidence on the role of counselling in marital quality and offers practical insights for policymakers, therapists, and religious institutions to strengthen marital relationships in Kenya and similar settings.

Keywords: Marital Quality, Post-Marital Counselling, Young Couples

Introduction

The distinct expert exercise of marriage therapy dates back to the 1900s when it was initiated (Stone, 1949). In the United States, Dr. Abraham Stone and Dr. Hannah Stone opened the first marital consulting clinic in New York in 1929 (Stone, 1949). The starting of consulting clinic quickly steered to development in like services that came up providing information and counselling to affianced and married individuals.

Marriage is an institution where two persons mainly a man and a woman agree together to form a family and commit to oneself under religious or legal rituals. The marriage as an institution is created to achieve a major purpose that was originally determined. Within marriage comes the notion of sexual intercourse between the agreed parties normally of different sexual orientation. Naturally, it is unique in nature and addresses cultural requirements amidst the bridging of the social and sexual gap leading to bearing of children. Ensuring growth of families and increasing generations. It also leads to a sound relationship between parents and relatives in the family setting (Eboigbe, 2019).

Premarital counselling is a therapy that helps in preparation of the coming years and how they can be addressed so as to clear up any challenge that is due to be faced by couples since such challenges are inevitable to avoid in marriages (Carlson *et al.* 2020). It is worth noting here that premarital counselling services talk of mutual concerns including medical screening, ideologies and ethics, expectations, partner knowledge, roles and responsibilities, sex, parenting, financial management, communiqué, and struggles (Osei-Tutu *et al.,* 2020). It should be noted that premarital counselling is one of the most dynamic practices to prevent transmissible diseases; it offers the ability to arbitrate according to predictable perils, inoculations, genetic consulting, nutrition, conduct, and guidance regarding contraception (Al-Qahtani *et al.,* 2019).

Marriage counselling in a report has comprehensively noted that numerous couples are beholding for a precise form of counselling to reinforce their relationships and obtain an upper gratitude of one another. Couples counselling is regularly used to accomplish certain concerns, including: divorce, betrayal, anger, monetary concerns, substance use and abuse, conflicts around parenting, combined families, sexual issues, and lack of communication (Devi *et al.* 2021).

According to Karimi *et al.* (2019), assurance reserves the pillars of marriage, whereas intimacy shows a central role in producing marital exclusivity and delight. The study further noted that interpersonal and intrapersonal factors lead to marital steadiness in long-term marriages. The authors acknowledged several specific issues, including religiousness and belief, obligation, intimacy, communication, children, love and affection, and approaches to conflict resolution (Karimi *et al.,* 2019).

Marital disharmony negatively influences mental and physical health; although premarital counselling is a worthwhile opportunity to progress marriage, it is often underutilized (Lawrence *et al.,* 2019). It is worth noting that the people who are ill-fated with their marriage are almost 40% more probable to die during their marriage, and ill-fated spouses face related or even poorer health and mortality dangers as compared to persons who have never wed, are separated, are divorced, or are bereaved (Lawrence *et al.,* 2019).

Kariuki (2018) indicated that counselling increased marital satisfaction and quality. However, as much as counselling has been advocated to address marriage stability and quality, domestic violence has been recorded in recent times leading to dysfunctions in marriage such as fights separations, divorce and even partner planned deaths. The rising number of marriage breakups has become a universal disastrous phenomenon in recent times as there has been an increase of reported cases of domestic violence some resulting to serious injuries and deaths which is a symptom of marriage instability that can be addressed by Counselling (Watenga, 2023). How to address such factors that affect marital quality has been elusive and needs to be addressed.

Premarital preparation is an important foundation for future stable marriage relationships. It has been noted that marriage stability does not accidentally happen, instead couples should adequately prepare before getting married if at all they should have stable and quality unions. Counselling is presumed to minimize dysfunction, bringing stability reflected by quality communication, conflict solving, quality financial management, mutual understanding, satisfaction, role function, self-disclosure and decision making. Based on previous studies highlighted and the gap they presented but are yet to be addressed, this study sought to determine the relationship between counselling and marital quality among marriages on young couples between 1 - 10 years of marriage in Ruiru Sub- County, Kenya and forged ahead to fill the gap presented.

In essence, it is viable to note the significance of this study as it is very effective since it addresses issues that iron out any inefficiency in marriage. An effective marital counselling determines the degree and span of divorce and separation that has adversarial effects not only on the people involved but also children, family and community. The findings in this study add value to the existing literature and become a point of reference.

The study objectives include:

To determine the relationship between intimacy issues and marital quality among marriages on young couples in Ruiru Subcounty, Kenya.

To find out the relationship between anger management and marital quality among marriages on young couples in Ruiru Subcounty, Kenya.

To determine the relationship between effective communication and marital quality among marriage on young couples in Ruiru Subcounty, Kenya.

Literature Review

Theoretical Review: This study was based on two theories namely Bowen Family Systems theory and Person-Centered theory.

Bowen Family Systems theory: was developed by psychiatrist Murray Bowen in the late 1940s and early 1950s. The theory underscores the need of the multigenerational diffusion practice in influencing family crescendos. The theory can aid families who are facing conflict or communication difficulties. It can also assist individuals experiencing anxiety and stress (Marschall, 2022). Based on the underlying components of the Bowen family systems theory, this study will be very much important. It will be used to address family systemic issues and will delve

into the understanding of importance of having and addressing intimacy issues, enabling families to communicate effectively while resolving conflicts and addressing anger management'. Additionally, the theory gives perception into behavior patterns transmission from generation to generation which will help in knowing the marital quality status of families.

Person-Centered theory: was developed in the USA in the 1950s as a counselling theory whose origin could be drawn from the humanistic psychology which perceives personalities as being skillful and possessing the prospective of resolving their own hitches (Seligman, 2006). Person-Centered therapists use the major technique that creates an environment that facilitates the development of self-awareness and self-esteem. Person-centered approach theory accepts that each individual has the propensity to work towards self-actualization (Seligman, 2006). This theory with its basic aim in possessing capability to solving problems comes in handy in this study. The theory relates to creation of a mutual ground where even the counsellor will be comfortable in assisting couples to address their marital issues and lead to marital quality among couples.

Empirical Review

Relationship between intimacy issues and marital quality among young couples:

Intimacy comprises different definitions centered on age, sex, education, and culture, and there is no consent amongst researchers on the root notion of intimacy which makes its definition difficult. Intimacy is strongly associated with the worth of couples' life and is commonly referred to as a simple psychological important and one of the key features of marital communication which effects on marital alteration and mental health, such as decreasing the threat of depression, increasing contentment and well-being, and providing a valuable satisfactory life of a person (Kardan-Souraki *et al.* 2018).

Deficiency of intimacy is a concern for it is taken as one of the most important foundations for divorce. Due to its varied and significant roles, intimacy has come to be observed as a universal human necessity that is domineering for healthy functioning. When marriage partners are friends, they dedicate more time together in schedules and attention and hence the marital relationship is enriched (Mutai, 2019). Lack of intimacy is presently the key dread of the specialists in psychology and counselling. It is reflected as one of the most imperative grounds for divorce, and as such to surge marital intimacy a great number of interventions have been projected (Siji & Rekha, 2018).

Intimacy is a key factor contributing to marriage satisfaction, marriage quality, marriage stability, and marriage functioning. Despite significant attention on marital intimacy, the focus of most research has either centered on the functions of marital intimacy or aspects of the construct in marriage satisfaction. Factors that influence couple intimacy are largely overlooked. Existing studies mainly have used cross-sectional survey data. Very little exists on intimacy factors in non-western cultures. No previous research has explored intimacy through the lens of intimate couples (Tayebeh, *et al.* 2023).

It is clear that intimacy is strongly associated with the quality of couples' life and is often referred to as a basic psychological need and one of the key characteristics of marital communication and is often supposed to be a strong predictor of physical health and a healthy marriage life. From the

aforesaid, it is clear that intimacy in marriage is a determinant of marital quality. Many couples are faced with sexual dysfunctions, poor companionship and less love. This study is carried out to identify and fill the gap left out through addressing intimacy issues in marriage.

Relationship between anger management and marital quality among young couples:

Even the happiest married couples endure conflict simply because dissimilarities are a part of the best relationships. Even though conflict and anger in marriage is a projected spectacle, it is vivacious to study to handle with it in order for a relationship to bloom and tolerate. Some people blow up and definite their anger while others quell it. Gusting up can lead to upsetting arguments that can lead to long-term association defacement. On the offhand side, subduing anger in marriage can cause inflammation, which also can be damaging for affiliations (McFadden, 2023).

Aggression and violence, a contributing factor to couple dissatisfaction, often stem from family backgrounds, and an inability to manage anger between partners can lead to significant and irreversible harm to the marriage's foundation and, subsequently, to the family structure. Thus, attempting to preserve and manage it is a crucial element in enhancing marital satisfaction. Practicing religious beliefs reduces verbal aggression and marital conflicts and disputes and affects marital satisfaction (Bakhtiarvand *et al.* 2023).

Marital disputes arise due to dissatisfaction with marriage and living together. Marital discord escalates when emotions such as anger, hostility, resentment, hatred, jealousy, along with verbal and physical abuse, prevail in the couple's relationship. Marital disputes slowly result in hostility and resentment towards the partner and such individuals eventually find it harder to manage their anger and become aggressive more rapidly (Rezazadeh *et al.* 2024).

The success of a marriage depends on whether it provides satisfaction for the whole family, not just one or two of the members. A husband and wife who are happy together derive satisfaction from the roles they play; they also have a mature and stable love for each other, make good sexual adjustments and accept the parental role. But they are not playing their roles satisfactorily when anger sets in (Munirajamma,, 2022) and hence this study intends to fill this gap.

Relationship between effective communication and marital quality among young couples:

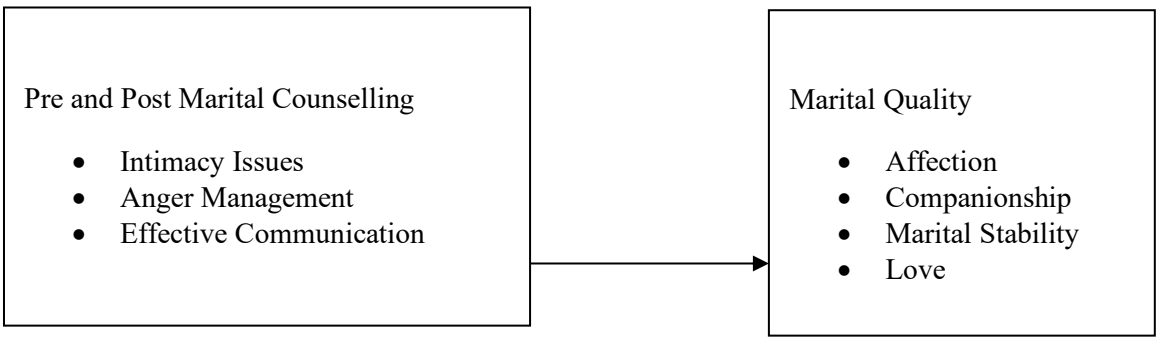
Communication skills are one of the best predictors of an ineffective marriage and one way to speak about the issue is through effective communication abilities. Couples who have real communication skills direct their needs more efficiently, address their conflicts, share their opinions and approaches more easily with each other, sense more closeness and friendship to each other, and finally they experience a developed quality of marriage. A high excellence of marriage backs couples to be less at danger of marital fatigue (Harris & Kumar, 2018).

Open communication builds trust and respect and these are two very important attributes of any marriage. When couples show honesty and vulnerability through open communication, they are showing that they trust and respect each other. Trust is built by being vulnerable and honest and respect is always gained as a result. Couples who have mastered the art of communication are more likely to grow as individuals and as a couple, than those who have not. Communication strengthens relationships and the more couples get to know each other and share ideas, the closer they will grow together (Savra, 2022).

It is well noted that couples who have effective communication skills express their desires more effectively, resolve their conflicts, share their thoughts and feelings more easily with each other, feel more intimacy and closeness to each other, and finally they experience a higher quality of marriage. Effective communication is therefore key to a happy marriage. How to ensure that there is effective communication in a marriage is required (Arumugam *et al.* 2021).

Communication has a great impact on how humans relate to each other, whether it's good or bad. It can be made through statements, spoken or written, actions or symbols, silence or sound, touches that is a caring touch or avoidance of touch, facial expressions such as a smiles or jeer among others (Yoo & Bartle., 2018). The gap remains that how communication is undertaken between couples is an issue. This study then intends to first find the relationship between effective communication and marital quality and how to address issues within it.

Theoretical and/or Conceptual Framework



Research Methodology

Research design uninterruptedly determines the types of investigation that are to be done so as to get the needed outcomes. This study used exploratory research design in order to focus on extracting insights that could guide further, more focused investigations without necessarily reaching definitive conclusions. The target population of this study was 100 young couples between 1 - 10 years of marriage who were purposively selected by the researcher to provide information sought and sourced them from the churches. This research used purposive sampling which was used to select respondents that are most likely to yield appropriate and useful information' and in a way of identifying and selecting cases that will use limited research resources effectively. The sample size was arrived at by using the Slovin's formula which arrived at a sample size of 80 young couples between 1 - 10 years of marriage. The researcher intended to collect detailed information from respondents and as such used primary data whereby structured closed-ended questionnaire was used as a data collection instrument. After data was collected, it was screened and cleaned to find out whether there were errors that could be corrected. Data was analyzed using quantitative techniques. It was the researcher's obligation to do everything in her power to make sure that a respondent was not teased, embarrassed, or forced to disclose information they were uncomfortable sharing during the entire study. In this case, the researcher had to identify a neutral place to conduct her study, provided her identifications since this was an academic research, sought authority from NACOSTI for allowance to undertake this study and

also the researcher had to get permission from the local authority (Area Chief) and church leaders to collect data.

Results / Findings

Intimacy within marital relationships is foundational to emotional bonding, mutual satisfaction, and resilience during conflict. The results revealed several key dynamics. The intimacy dimension reveals striking disparities in spousal perceptions. Friendship in Marriage emerged as exceptionally strong (M=4.43, SD=0.64), with 95.4% agreement (A+SA), suggesting peer-like companionship serves as a foundational marital strength in this cohort.

Effective anger management is essential for marital stability. The data indicated widespread awareness of the negative impacts of poorly managed anger. Anger-related measures demonstrated concerning patterns. The item "Anger Harms Marriage" (M = 3.54, SD = 1.48) had nearly half the respondents (47.7%) strongly agreeing. This consensus highlights a shared perception that unchecked anger erodes trust, safety, and communication in marriage.

The frequency and descriptive analysis of responses related to communication and marital quality offers valuable insights into how young couples in Ruiru Sub- County perceive the role of communication and counseling in enhancing marital satisfaction. Regarding the item "Enhance Marital Quality," a majority of respondents (49.2%) strongly disagreed with the statement that enhancing marital quality is simply about reducing exhaustion, suggesting a more nuanced view of marital quality. The mean score of 2.48 and a high standard deviation (SD = 1.491) indicates divergent opinions on this issue.

Discussion

The findings of the study provided robust evidence supporting the significant influence of intimacy-related factors on marital quality among young couples. The exceptionally high agreement (95.4%) that friendship is essential in marriage (M = 4.43) highlights the increasing centrality of emotional intimacy in sustaining marital satisfaction.

The findings on anger management underscore its pivotal role in shaping marital stability among young couples. Despite nearly half of the participants (47.7%) acknowledging that anger negatively affects marital relationships (M = 3.54), a similarly large proportion (46.2%) admitted to suppressing marital issues (M = 3.28), and only 35.4% strongly affirmed the usefulness of counseling services in managing anger (M = 3.20). This discrepancy between awareness and action points to a critical gap in the availability, accessibility, and perceived effectiveness of coping mechanisms for emotional regulation within marriages.

The objective which investigated the relationship between effective communication and marital quality among young couples, revealed two significant insights. Effective communication was found to significantly predict marital quality ($\beta = .320$, $p < .001$), corroborating extensive literature that emphasizes its central role in relationship satisfaction. These findings suggest that while communication is a necessary competency, it is insufficient without the scaffolding of counseling. As such, interventions aimed at improving marital quality among young couples should prioritize integrated models that combine communication training with culturally grounded, long-term counseling approaches. This supports the theoretical framework of systems theory, which posits

that marital quality is the result of interdependent factors—where communication skills function optimally only when embedded within supportive, structured contexts.

Conclusion

Intimacy also played a critical role. The study concluded that those with emotionally close couples and sharing friendship, trust, and mutual understanding, reported greater marital stability and fulfillment. While intimacy alone cannot resolve conflicts, it provides the emotional foundation upon which successful communication and resolution are built. Emotional and relational intimacy is a critical foundation for a fulfilling marriage.

Anger management demonstrated the strongest influence. Couples who effectively managed anger through calm conflict resolution and constructive dialogue reported higher marital satisfaction, emphasizing the importance of emotional regulation in sustaining healthy relationships.

Although effective communication is slightly less impactful individually, it is essential in strengthening the benefits of both intimacy and anger management. Open, respectful communication allowed couples to express needs, resolve misunderstandings, and maintain emotional connection. However, communication alone, without emotional closeness or conflict regulation, was insufficient in promoting high marital satisfaction.

Implications and Recommendation

Strategy aimed at improving marital quality must integrate culturally sensitive, accessible, and affordable counselling services into the community. Government too should enforce policies that realign marriage institutions so as to decrease possible failing marriage institutions.

As for the career counsellors, this study recommends that they use it as a green light as well as a process to follow for them to do their work diligently and provide excellent counselling services to married spouses and those who are in the process of formalizing their marriages. This study and its entire findings recommend to counselling students the vitality and objectivity of the study and endorses to them to use it as a basis for their study, more so in addressing such issues as intimacy, anger management and also provision of modalities to address lack of effective communication between 0 - 10 years of marriage. It is therefore recommended that the government puts in place modalities to address the issues that may crop up between 0 - 10 years of marriage couples such as lack of intimacy between spouses, anger that creeps in between marriages and also effective communication, which is key in quality marriages. This study recommends to the stakeholders, such as churches, NGOs, specialists such as marriage counsellors and other individual persons to ensure they understand what quality marriages consists of and how to address any eventualities of marriages.

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EVALUATING ACCESS AND EQUITY IN PUBLIC SPECIAL NEEDS SCHOOLS THROUGH THE DISTRIBUTED LEADERSHIP MODEL: A STUDY IN MURANG'A COUNTY, KENYA

HANNAH WANJIRU GICHURE

Abstract

In Kenya, every child has a right to quality and equitable education. The Sustainable Development Goals show that by the year 2030, the Kenyan government aims to provide free, equitable and quality education for both Primary and Secondary school students. The purpose of this research is to assess equity and access issues in education among special needs students. It will do this by looking at the current state of special needs education and identifying some existing gaps. The objectives of the study include: to find out the current state of special needs education in Murang'a County, to identify barriers to access of quality education among special needs students in Murang'a and to assess the application of the distributed leadership model in Murang'a County. The study utilizes literature from various scholars and looks at their study design, sample and findings. The study will be guided by the social justice and distributed leadership theories. The theories outline some of the difficulties special needs students face and how they should be treated fairly. The study will utilize mixed research methods design to collect data from teachers to special needs students. This involves the use of both interviews and surveys. The sample size is 54 which includes teachers, headteachers and head of departments in special schools. The population includes 30 teachers, 12 head teachers and 12 heads of departments in the special schools. Stratified and random purposive sampling techniques will be used. The study will administer questionnaires to principals and teachers to these children to understand their view on accessibility of education among special needs students. Interviews will be done to head teachers in an attempt to understand the plight of special needs students in their schools. It will then be analyzed using linear regression. Further analysis will include the use of descriptive statistics and correlation analysis. The quantitative data will be analyzed using SPSS version 26 to provide meaningful inferences about special needs students in Murang'a County. The data will provide insights on some barriers to accessing quality education and some policies that are employed to ensure special needs students get access to quality education. During the data collection process, a total of 55 questionnaires were administered. Out of the 55, 45 questionnaires were returned, resulting in a 81.8% response rate. The research used the 5-point Likert scale represented by 1- Strongly Disagree, 2-Disagree. 3- Moderately Agree, 4-Agree and 5-Strongly Agree. The results show that a majority of the respondents disagreed with the fact that the public special needs schools in Murang'a County have adequate resources designed for special needs students. The standard deviation (0.944) shows that there are moderate variations. This means that some schools may have great infrastructure while some have none at all. The findings show that there is a positive relationship between effective infrastructure and proper teacher training (0.0784). This implies that schools with proper and effective infrastructure are likely to offer training to their teachers. Adequate government funding has a strong positive relationship with availability of effective infrastructure (0.821). This implies that with an increase in government funding, there is a

corresponding increase in the availability of infrastructure to take care of special needs students. The model summary shows that the coefficient of determination (R-square) is 0.745. This means that 74.5% of the variations in special needs education can be explained by the variables in this model. The variables include the availability of an inclusive and collaborative environment, schools working closely with external stakeholders to ensure well-being of the students, availability of opportunities for students to participate in co-curricular activities and government funding for special needs schools. The ANOVA results show that the overall regression model was statistically significant. This is in line with the calculated F-statistic (18.458) which is greater than the critical F-value of 2.298. The reported P value is 0.000, which is less than the critical p-value of 0.05. Adequate government funding has a β= 0.458 with a Sig=0.002. This is a statistically significant measure. A unit increase in government funding in special schools within Murang'a County increases the accessibility and equity by 0.458. Government funding is found to be a statistically significant measure given the P-value of 0.002, which is less than 0.05. Adequate government funding, therefore, significantly improves access and equity in special needs education. Workshops and training for teachers in special needs schools yield a β=0.432. This implies a positive relationship with access and equity in special education. The coefficient shows than a unit increase in training and workshops for teachers, equity and access to special needs education increases by 0.432. The P-value of 0.005 is less than 0.05, meaning that it is statistically significant and is a very important predictor.

IMPACT OF LOW PARTICIPATION IN STUDENT ELECTION ON SELECTED LEADERSHIP ELEMENTS: A CASE STUDY OF KCA UNIVERSITY, KENYA

Mutuku Mwinzi
Jackson Mwangi
Susan Kimotho

Abstract

This study examined the impact of low student participation in university elections on key leadership attributes, namely accountability, integrity, and decisiveness, amid growing concern over declining student electoral engagement and its implications for the legitimacy and effectiveness of student governance. Grounded in Social Capital Theory and Principal–Agent Theory, the study investigated how levels of electoral participation influence the quality of student leadership. A descriptive research design was employed, targeting a population of 3,476 individuals at KCA University in Nairobi, Kenya. Using stratified random sampling, 359 participants were selected, comprising 354 students and 5 faculty members. Data were collected through structured questionnaires administered to students and semi-structured interviews conducted with faculty members. Quantitative data were analyzed using SPSS, while qualitative data were examined through thematic analysis. The findings revealed that low voter turnout significantly weakens student leadership, with over 60% of respondents expressing a lack of trust in leaders elected under conditions of low participation due to reduced transparency and accountability. More than half of the respondents also perceived declines in ethical decision-making and decisiveness among such leaders. Hypothesis testing indicated that accountability was the most significantly affected leadership attribute ($p < 0.05$), underscoring a strong relationship between electoral participation and leadership effectiveness. The study concludes that reduced student electoral participation undermines the credibility, trustworthiness, and overall performance of student leaders, and recommends civic education initiatives, adoption of digital voting systems, and strengthened election oversight to enhance participation and leadership outcomes.

Keywords: student elections, voter turnout, leadership accountability, student governance, university leadership.

1. INTRODUCTION

Student participation in university elections is globally recognized as a critical foundation for effective student governance, leadership development, and long-term civic engagement. Research from diverse contexts demonstrates that engagement in student elections strengthens students' commitment to democratic norms, institutional accountability, and future political participation beyond the university (Smith et al., 2019; Johnson & Harris, 2021). Despite these benefits, voter turnout in student elections remains persistently low, often falling below 20 percent in many universities worldwide (Brown, 2020; Davis, 2022). Existing scholarship attributes this trend to a combination of psychological, structural, and institutional factors, including limited political efficacy, weak interest, restricted voting accessibility, administrative interference, and perceived lack of transparency in electoral processes (Kiyaga, 2020; Alonso, 2024). Although various

reforms and incentive-based interventions have been introduced to reverse declining participation, their mixed outcomes suggest that the challenge is complex and insufficiently understood. Notably, much of the global literature emphasizes the causes of low participation or the normative benefits of engagement, with limited empirical focus on how low voter turnout affects the quality, legitimacy, and effectiveness of student leadership.

Within the African context, student governments have historically served as important platforms for political mobilization, resistance to authoritarianism, and leadership training, particularly following the reintroduction of multiparty democracy in the 1990s. However, voter turnout in Student Representative Council elections remains low across many African universities, reflecting broader patterns of youth political disengagement (Mboyonga, 2018; Kiyaga, 2020). In Kenya, governance reforms introduced through the Universities Act of 2016 replaced direct elections with an electoral college system, a shift intended to improve efficiency and gender representation but widely criticized for reducing inclusivity, weakening student activism, and enabling administrative influence over electoral outcomes (Kweya, 2018; Wangila, 2019). At KCA University, where this system was implemented in 2017, preliminary evidence indicates a notable decline in student participation. Addressing a critical gap in the literature, this study examines the impact of low student participation on leadership accountability, integrity, and decisiveness at KCA University, drawing on Social Capital Theory and Principal–Agent Theory. By foregrounding the consequences of electoral disengagement rather than its causes alone, the study contributes globally relevant empirical insights into student governance, youth participation, and leadership development, with implications for higher education institutions and policymakers seeking to strengthen democratic practices and leadership quality.

2. LITERATURE REVIEW

2.1 Determinants of Low Student Participation in University Elections

The literature identifies low student participation in university elections as a multidimensional issue influenced by informational, perceptual, socio-economic, psychological, and institutional factors. Limited awareness of electoral procedures and candidate platforms reduces turnout in the United States and the United Kingdom (Smith, 2018; Brown & Davis, 2020), while perceptions of student governments as ineffective or symbolic diminish students' motivation to vote in contexts such as Australia, Canada, and the UK (Jones & Taylor, 2019; Clark & White, 2021). Socio-economic constraints, including financial pressures and academic workload, disproportionately affect participation among lower-income students in China and South Africa (Lee & Zhang, 2020; Adams & Green, 2022), alongside low political efficacy (Miller & Jackson, 2021) and institutional barriers such as administrative interference and opaque electoral processes, particularly in developing-country contexts (Hernandez & Ali, 2020).

2.2 Effects of Low Participation on Leadership Accountability

Low voter turnout is consistently associated with weakened accountability in student leadership. Leaders elected by narrow electorates often lack legitimacy and responsiveness, resulting in concentrated power and limited oversight (Smith, 2018; Brown & Davis, 2020; Jones & Taylor, 2019). In African universities, including Kenya and Egypt, low participation further undermines students' capacity to monitor leadership performance, enabling unaccountable governance

practices (Njoroge & Achieng, 2021; Ahmed & Musa, 2022). However, existing studies provide limited insight into how accountability deficits persist across leadership cycles or how institutional mechanisms might mitigate these effects in low-turnout settings.

2.3 Implications of Low Voter Turnout for Leadership Integrity

Global evidence links low electoral participation to compromised leadership integrity, reflected in reduced trust, limited transparency, and increased perceptions of unethical behavior. Studies from the United States, the United Kingdom, Australia, and Asia show that leaders elected with weak mandates struggle to establish ethical credibility and transparent decision-making processes (Brown & Davis, 2019; Jones & Taylor, 2020; Lee & Zhang, 2021). Socio-economic exclusion and digital inequality further undermine integrity by reinforcing governance inequities (Kim & Lee, 2023; Patel & Green, 2022), while psychological pressures associated with weak legitimacy may increase vulnerability to misconduct (Miller & Jackson, 2023), particularly in under-researched African university contexts.

2.4 Impact of Low Electoral Turnout on Leadership Decisiveness

Low voter turnout also negatively affects leadership decisiveness, with leaders elected under weak mandates often exhibiting hesitation and risk aversion due to legitimacy concerns. Empirical studies from Asia and Africa indicate that such leaders are more likely to delay or avoid critical decisions (Chen & Park, 2020; Ahmad & Wanjala, 2022), while comparative research in the United Kingdom and South Africa shows a tendency toward passive or reactive leadership styles (Williams & Thomas, 2021). Peer factionalism, excessive consensus-seeking, and overreliance on digital feedback mechanisms further intensify decision-making paralysis (Kim & Wang, 2022; Patel & Green, 2022), with gendered and socio-cultural dynamics disproportionately constraining female leaders (Akinyi & Mungai, 2021).

3. THEORETICAL AND CONCEPTUAL FRAMEWORK

This study is grounded in Social Capital Theory (Putnam, 2000) and Principal–Agent Theory, which together provide a robust framework for analyzing student leadership dynamics in university elections at KCA University. Social Capital Theory explains how weak social networks, low trust, and diminished civic norms contribute to voter apathy, thereby undermining leadership legitimacy, accountability, and decisiveness. Complementarily, Principal–Agent Theory conceptualizes students as principals and elected leaders as agents, demonstrating that low voter turnout weakens oversight mechanisms, reduces accountability, and increases the risk of self-interested behavior, while higher participation strengthens leaders' mandates and responsiveness. Building on these theoretical foundations, the study's conceptual framework positions low voter turnout as the independent variable influencing leadership accountability, integrity, and decisiveness, with intervening factors such as awareness initiatives, student engagement levels, socio-economic conditions, peer influence, and institutional support shaping this relationship. This framework informs the study's research questions, hypotheses, and methodological approach, providing a coherent basis for examining how electoral participation affects student leadership quality and governance in higher education.

4. METHODOLOGY

4.1 Research Design

The study adopted a convergent mixed-methods design, integrating quantitative and qualitative approaches to examine how low student electoral participation influences leadership accountability, integrity, and decisiveness at KCA University (Creswell & Creswell, 2021). This

design enabled simultaneous collection and triangulation of numerical trends and contextual insights, strengthening the validity of the findings.

4.2 Study Population and Sampling

The study targeted third-year undergraduate students and faculty members involved in student governance, selected due to their exposure to electoral processes and oversight roles. From a population of 3,476, a sample of 359 respondents was determined using Yamane's (1967) formula with a 5% margin of error. Stratified random sampling ensured representation across academic schools, while purposive sampling selected five governance-involved faculty members

(Taherdoost,2018;Israel,2019).

Data Collection Methods

Data were collected using structured questionnaires administered to students and semi-structured **i**nterviews conducted with faculty members. Questionnaires employed Likert-scale and closed-ended items to quantify perceptions of participation and leadership performance, while interviews captured institutional perspectives on electoral engagement and leadership outcomes.

Data Analysis Procedures

Quantitative data were analyzed using descriptive and inferential statistics in SPSS, with significance set at $p < 0.05$ (Field, 2018). Qualitative interview data were analyzed thematically using inductive coding, with iterative validation to ensure coding consistency (Braun & Clarke, 2006). Triangulation enhanced credibility and interpretive depth (Cohen et al., 2018; Denzin & Lincoln,2018).

Ethical Considerations

The study adhered to ethical standards including **informed consent, confidentiality, anonymity, and voluntary participation**, ensuring the protection of all participants throughout the research process.

5. FINDINGS

The study analyzed responses from 354 students and five faculty members, achieving a 100% response rate for both questionnaires and interviews. Reliability analysis indicated strong internal consistency for Accountability ($\alpha = 0.925$) and Decisiveness ($\alpha = 0.770$), with moderate reliability for Integrity ($\alpha = 0.595$), while validity was confirmed through expert review and exploratory factor analysis. Demographic results showed that most respondents were aged 22–24, with only 26.5% consistently participating in student elections, and key participation barriers identified as limited interest, inadequate candidate information, and time constraints.

Table 1: **Demographic Characteristics and Electoral Participation of Respondents**

(N = 354)

Variable	Category	n	%
Gender	Male	200	56.5
	Female	154	43.5
Age (years)	18–21	92	26.0

Variable	Category	n	%
	22–24	198	56.0
	25 and above	64	18.0
Participation in Student Organizations	Yes	189	53.4
	No	165	46.6
Frequency of Voting in Elections	Always	94	26.5
	Occasionally	150	42.4
	Rarely/Never	110	31.1

Note. Percentages may not total 100 due to rounding.

Quantitative analysis revealed that low voter participation was associated with weakened leadership **accountability (M = 2.90)**, **decisiveness (M = 3.02)**, and perceptions of **ethical leadership**, alongside moderate perceptions of transparency and information access (M ≈ 3.1). Hypothesis testing at **$p < 0.05$** confirmed that low electoral participation significantly undermines all three leadership attributes. Qualitative insights from faculty interviews reinforced these findings, highlighting insufficient voter education, procedural reforms, and digital voting challenges, and recommending awareness campaigns, hybrid voting models, and increased leadership visibility.

Table 2: Descriptive Statistics and Reliability of Leadership Attributes

Leadership Attribute	Mean (M)	Standard Deviation (SD)	Cronbach's α
Accountability	2.90	0.74	0.925
Integrity	3.88	0.68	0.595
Decisiveness	3.02	0.71	0.770
Transparency & Information Access	3.10	0.69	—

Note. Responses were measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

6. DISCUSSION

This study examined the effects of low voter turnout on student leadership accountability, integrity, and decisiveness at KCA University, integrating quantitative and qualitative evidence. The findings demonstrate that reduced electoral participation significantly undermines leadership performance, supporting the propositions of Social Capital Theory and Principal–Agent Theory, which emphasize trust, legitimacy, and effective oversight as foundations of good governance (Putnam, 2000). Weak student engagement was shown to erode trust in electoral processes, limit students' ability to hold leaders accountable, and diminish leaders' perceived legitimacy, underscoring the central role of broad-based participation in sustaining effective and credible student governance.

The discussion further reveals that low participation is driven by intersecting structural and socio-economic barriers, including limited digital literacy and access to online voting platforms, time constraints, inadequate candidate information, and voter apathy (Research Findings, 2024). These challenges are consistent with prior studies highlighting the combined influence of structural,

psychological, and perceptual factors on electoral engagement (Patel & Green, 2022; Kim & Lee, 2023). Empirically, low turnout was associated with weakened accountability, compromised integrity, and reduced decisiveness, as leaders elected with narrow mandates were perceived as less transparent, more self-interested, and hesitant in decision-making (Jones & Taylor, 2020; Research Findings, 2024). Faculty perspectives reinforced these patterns, pointing to insufficient voter education and procedural constraints. Collectively, the findings highlight the need for institutional interventions such as improved digital infrastructure, voter sensitization, leadership training, and transparent oversight mechanisms to strengthen student participation and promote accountable, ethical, and decisive leadership within university governance structures.

7. CONCLUSION

This study concludes that low voter turnout in university student elections significantly undermines core leadership attributes; accountability, integrity, and decisiveness, by weakening leaders' legitimacy, reducing transparency, and increasing perceptions of unethical behavior (Research Findings, 2024). Leaders elected by limited electorates were less confident and effective in decision-making, reflecting patterns highlighted in Social Capital Theory and Principal–Agent Theory, which link trust, oversight, and electoral participation to leadership performance (Putnam, 2000). The findings underscore that enhancing student participation alone is insufficient; robust accountability mechanisms, including performance monitoring and transparent governance practices, are essential to uphold leadership standards. Complementary interventions, such as leadership development programs focused on ethical decision-making, stress management, and procedural knowledge, alongside institutional reforms addressing socio-economic and structural barriers such as accessible voting platforms, flexible academic schedules, and targeted awareness campaigns are necessary to strengthen governance, reinforce legitimacy, and promote ethical, accountable, and decisive student leadership in higher education contexts (Patel & Green, 2022; Kim & Lee, 2023; Jones & Taylor, 2020).

8. RECOMMENDATIONS

This study recommends targeted interventions to enhance student electoral participation and strengthen leadership effectiveness at KCA University and similar higher education contexts. For university administration, initiatives should include voter education campaigns for first-year students, independent oversight of student leaders, secure digital voting platforms, and institutionalized leadership development programs focusing on ethics, communication, and decision-making (Putnam, 2000; Research Findings, 2024). Student leaders are encouraged to adopt transparency practices such as periodic performance reviews, financial disclosures, and open forums, alongside structured governance and ethics training to mitigate legitimacy challenges (Jones & Taylor, 2020). For the student body, active engagement beyond voting including committee participation, attending dialogues, and providing feedback can reinforce accountability, integrity, and effective decision-making (Patel & Green, 2022; Kim & Lee, 2023). The study acknowledges limitations, including a small qualitative sample and single-university focus, and recommends future research using longitudinal and multi-institutional designs, exploring socio-economic and structural determinants, hybrid voting systems, and enhanced faculty involvement to improve inclusive and effective student governance.

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IMPACT OF PRINCIPALS' HUMAN RESOURCE MANAGEMENT CAPACITY ON STAFF PERFORMANCE IN PRIVATE SECONDARY SCHOOLS IN EMBAKASI SUB-COUNTY, KENYA

OUMA VICTOR ALLAN ONYANGO

Abstract

Head-teachers, often seen as leaders of learning or instructional leaders, are responsible for shaping the culture and vision of their schools, inspiring and managing teachers, and improving the curriculum to enhance student outcomes. The main aim of the study was to examine the influence of principals' human resource capacity on staff performance at private secondary schools in Embakasi Sub-County, Kenya. Specifically, the study sought to establish the influence of principals' recruitment capacity, staff performance management capacity, staff professional development capacity, and employee relations management capacity on staff performance at private secondary schools. The study was anchored on both Resource Dependence Theory and the Social Learning Theory. The study targeted all private secondary school teachers in Embakasi Sub-County, Nairobi, with a total population of 463 teachers as reported by the Ministry of Education (2024). The study employed simple random sampling to select 157 teachers and schools. Additionally, 20 Key In-depth Informants (KIIs), comprising education officials and head teachers, were purposively selected for qualitative interviews to provide expert insights and triangulate quantitative data. Primary data were collected using self-administered questionnaires and structured interview guides, employing a drop-and-pick method to maximize response rates. Quantitative data were coded and entered into the Statistical Package for the Social Sciences (SPSS Version 26) and analyzed using descriptive and inferential statistics. Descriptive statistics involved the use of absolute and relative (percentages) frequencies, as well as measures of central tendency and dispersion (mean and standard deviation respectively). The study also employed multiple regression and Pearson correlation analysis to establish the relationship between the independent and dependent variables. At the 95% significance level, principals' recruitment capacity, staff performance management capacity, and employee relations management capacity were significant factors influencing staff performance, with p-values of .000, .000, and .000 respectively. However, principals' staff professional development capacity was found to be an insignificant factor with a p-value of .349. Principals' recruitment capacity emerged as the most significant factor influencing staff performance, followed by staff performance management capacity, then employee relations management capacity, while staff professional development capacity had minimal influence. The study recommended that school principals prioritize enhancing their recruitment capacity, as it had the strongest influence on staff performance. Strengthening staff performance management and employee relations management capacities should also be emphasized, given their significant impact. Professional development initiatives, while important, may require reevaluation or redesign, as they showed minimal influence on staff performance. Overall, resource allocation and training efforts should focus on the most impactful areas to improve staff outcomes effectively.

RELATIONSHIP BETWEEN DOMESTIC ABUSE AND INTERGENERATIONAL TRAUMA IN FAMILIES: A CASE STUDY OF KIAMBU COUNTY, KENYA

NJOROGE RUTH WANGUI

Abstract

Awareness has increased among health professionals that trauma is significantly associated to experiences of abusive relationships that tend to be characterized by intimate partner violence (IPV) and/or domestic abuse. The purpose of the study is to assess the relationship between domestic abuse and intergeneration trauma in Githurai Sub-County of Kiambu County, Kenya. The study was directed by four objectives: to investigate the nature of domestic abuse; to assess the impact of domestic abuse on the psychological and emotional well-being of children, to assess the extent of intergenerational trauma in family members affected by domestic abuse and, to suggest suitable trauma interventions for victims in Githurai Sub-County of Kiambu County, Kenya. This study incorporated Social Learning Theory and Bowen Family Systems Theory. The study population was families living in Githurai Sub-County where at least one family member experienced domestic abuse in childhood and is experiencing domestic abuse in adulthood (either as a victim or perpetrator) and the impacts of trauma from domestic abuse have been passed down to subsequent generations. A sample size of approximately 15-20 families was used, selected through purposive and snowball sampling techniques. This number was appropriate given the sensitive nature of the topic and the focus on gathering in-depth, experience-based responses. The structured nature of the questionnaire allowed for both quantitative and qualitative analysis, supporting a comprehensive understanding of the relationship between domestic abuse and intergenerational trauma. The study employed descriptive statistics to summarize participants' demographic and background information, and inferential statistics to explore possible relationships between key variables related to domestic abuse and intergenerational trauma, while qualitative responses were examined using thematic analysis, ensuring a thorough and comprehensive evaluation. The analysis was done using the SPSS data analysis and a report generated after all empirical data had been collected and organized in a manner so as to make conclusive arguments on the relationship between domestic abuse and intergenerational trauma. The research finds that domestic abuse exists in four primary forms which include emotional abuse, physical abuse, financial abuse and sexual abuse. The findings demonstrate the psychological and emotional consequences that domestic abuse has on children. Findings suggest that the intergenerational transmission of violence, which occurs when victims have witnessed domestic abuse from their families and subsequently expose their own children to it, occurs through various mechanisms such as learned behaviors, normalized violence, disruption of attachment, and compromised parenting capacity due to trauma. The research indicates that children are not only experiencing immediate psychological symptoms of domestic abuse but also experience functional impairments that limit their ability to perform well in school and maintain healthy relationships. The study recommends that the government of Kenya should fund, promote and develop integrated responses to domestic violence, coordinating services nationwide to minimize the impact on victims and their families. Interventions for trauma victims should include

trauma-informed care implementation, family-based intervention programs, community-based support networks and school-based mental health services. The future research should involve longitudinal studies of children who experienced domestic violence throughout their adult years to gain a better understanding of long-term outcomes and factors that contribute to resilience. The research would be advantageous in identifying potential prevention and intervention measures.

IMPACT OF DRUG USE ON ACADEMIC PERFORMANCE OF STUDENTS: THE CASE OF NYS ENGINEERING INSTITUTE, NAIROBI CITY COUNTY, KENYA

TABITHA NYAMBURA GITHOGO

Abstract

This study investigated the impact of drug use on the academic performance of students at the NYS Engineering Institute, Mathare, Nairobi City County, Kenya. The research was guided by four specific objectives: to determine the prevalence of drug use, identify the main factors driving it, examine its impact on academic performance, and assess the interventions available to manage related challenges. A descriptive research design was employed, utilizing a stratified random sampling technique to select a sample of 400 students from a population of 1,000. Data was collected through structured questionnaires and focus group discussions, and analyzed using both descriptive and inferential statistics, including correlation analysis and independent samples t-tests. The findings revealed a high prevalence of drug use, with 56.8% of students identified as users of substances other than alcohol or tobacco. Miraa (Khat) was the most prevalent substance (44.2%), followed by alcohol (35.0%), cannabis, tobacco, and Kuber. Academic pressure was identified as the primary driver, with drug users significantly more likely to increase substance use during stressful periods. A statistically significant, moderate positive correlation was found between drug use frequency and negative academic impact ($r = .489$, $p < .001$). Drug users reported significantly higher levels of declining grades, exam cheating, low concentration, and truancy compared to non-users. The study also identified a significant gap in intervention services, with critical supports like counselling and stress management programs perceived as less available, particularly by drug users. The study concludes that drug use is a pervasive and significantly detrimental issue at the institute, directly impairing academic outcomes. It recommends the implementation of targeted stress management programs, enhanced counselling services, and structured peer support initiatives to mitigate the problem and improve student well-being and academic success.

IMPACT OF CHILDHOOD EXPOSURE TO DOMESTIC VIOLENCE ON PARENTING PRACTICES AMONG ADULTS IN MAKUENI COUNTY, KENYA

JEDIDAH WAYUA MUNYOKI

Abstract

Childhood exposure to domestic violence is increasingly recognized as a critical factor influencing long-term psychosocial development and parenting practices in adulthood. Despite its profound implications, this area remains underexplored within rural Kenyan contexts, where cultural, social, and economic dynamics may perpetuate intergenerational cycles of violence. This study examined the types of domestic violence experienced during childhood and assessed their impact on adult parenting practices among residents of Makueni County, Kenya. A Correlational research design was adopted, involving 218 adults aged 30–50 years who had been exposed to domestic violence during childhood and were currently parents. Data were collected using semi-structured questionnaires, focus group discussions, and key informant interviews. Quantitative data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis, while qualitative data were thematically analyzed to complement the quantitative findings. The findings revealed a high prevalence of childhood exposure to domestic violence, with respondents reporting experiences of physical, emotional, and psychological abuse. Statistical analysis demonstrated a significant positive relationship between childhood exposure to domestic violence and maladaptive parenting practices in adulthood ($r = 0.412$, $p < 0.001$). This indicates that higher levels of childhood exposure to violence were associated with increased likelihood of harsh, inconsistent, or emotionally unresponsive parenting behaviors. Multiple regression analysis further showed that childhood exposure to domestic violence significantly predicted parenting practices even after controlling for selected socio-demographic factors. The study concludes that childhood exposure to domestic violence has enduring negative effects on parenting behaviors, reinforcing the intergenerational transmission of violence. It underscores the need for trauma-informed parenting interventions, community-based psychosocial support, and early prevention programs to mitigate the long-term effects of childhood violence and promote positive parenting practices in rural Kenyan settings.

Keywords: Childhood exposure to domestic violence; Parenting practices; Intergenerational.transmission of violence; Maladaptive parenting; Trauma-informed interventions; Rural Kenya.

Introduction

Childhood exposure to domestic violence is increasingly recognized as a critical determinant of long-term psychosocial outcomes, including adult parenting practices. Exposure to violence within the family during formative years disrupts emotional development, attachment formation, and

coping mechanisms, which may later influence how individuals relate to and care for their own children. Beyond immediate physical and emotional harm, domestic violence leaves enduring psychological scars on children who grow up in violent households, often shaping their interpersonal relationships and caregiving behaviors in adulthood.

While global and regional studies have documented the intergenerational effects of domestic violence, limited empirical evidence exists within rural Kenyan contexts. In such settings, poverty, entrenched cultural norms, gender inequalities, and limited access to psychosocial services may exacerbate vulnerability and normalize violence within families. National surveys in Kenya continue to report high prevalence of domestic and gender-based violence, particularly in rural and marginalized communities.

Makueni County is characterized by high poverty levels and persistent cases of domestic violence, making it a critical setting for examining the long-term effects of childhood exposure to domestic violence. Understanding how such exposure shapes adult parenting practices is essential for informing targeted, trauma-informed interventions aimed at breaking intergenerational cycles of violence. This study therefore examined the types of domestic violence experienced during childhood and their influence on adult parenting practices in Kibwezi west Makueni County, Kenya.

Statement of the Problem

Despite ongoing efforts to address domestic violence in Kenya, interventions have largely focused on immediate victims, with limited attention to adults who were exposed to violence during childhood and are now parents. In rural areas such as Kibwezi West, Makueni County, domestic violence remains prevalent and is often normalized, yet its long-term effects on parenting practices remain under-researched.

Existing policies and interventions primarily emphasize prevention, protection, and short-term recovery, with minimal focus on adult survivors of childhood domestic violence. Consequently, many parents continue to struggle with emotional regulation, discipline practices, and parent–child relationships, potentially perpetuating intergenerational cycles of violence. The lack of localized empirical evidence limits the development of targeted, trauma-informed parenting interventions and policies.

This study addressed this gap by examining the relationship between childhood exposure to domestic violence and adult parenting practices within a rural Kenyan context, providing empirical evidence to inform practice and policy.

Theoretical Review

Attachment Theory

Attachment theory posits that early interactions with caregivers shape emotional regulation, interpersonal relationships, and caregiving behaviors across the lifespan (Bowlby, 1969). In violent households, disrupted caregiver responsiveness often results in insecure attachment styles, which persist into adulthood and affect parenting sensitivity, consistency, and emotional availability.

Trauma Theory

Trauma theory explains how exposure to chronic violence during childhood leads to long-term emotional dysregulation, hypervigilance, and maladaptive coping mechanisms (Herman, 1992). Adults with unresolved childhood trauma may struggle to provide emotional warmth, consistency, and safe environments for their children, increasing the risk of maladaptive parenting behaviors.
Together, these theories provide a framework for understanding how childhood exposure to domestic violence shapes adult parenting practices and contributes to the intergenerational transmission of violence.

Literature Review

Empirical studies consistently demonstrate that childhood exposure to domestic violence is a significant risk factor for adverse psychosocial outcomes across the life course, particularly in relation to adult parenting practices. Children who witness or directly experience domestic violence are more likely to develop emotional dysregulation, insecure attachment styles, and maladaptive coping mechanisms, which may later influence their parenting behaviors in adulthood.
Domestic violence manifests in multiple forms, including physical, emotional, psychological, and verbal abuse. Evidence from global and African contexts indicates that emotional and psychological violence, though less visible, has profound and lasting effects on self-esteem, emotional functioning, and interpersonal relationships.
Existing literature further supports the concept of intergenerational transmission of violence, whereby individuals exposed to domestic violence during childhood are at increased risk of adopting harsh, authoritarian, or inconsistent parenting styles (Jouriles et al., 2001; Ngugi et al., 2020). However, studies also highlight the presence of resilience and protective factors, such as access to counseling, social support, education, and positive role models, which can interrupt this cycle and promote healthy parenting practices.
Despite extensive international research, limited context-specific evidence exists within rural Kenyan settings. This study contributes to the literature by providing empirical data from Makueni County, addressing this critical gap.

Methodology

The study adopted a correlational research design to examine the relationship between childhood exposure to domestic violence and adult parenting practices. The target population comprised adults aged 30–50 years residing in Kibwezi West, Makueni County, who had experienced domestic violence during childhood and were currently parents. A sample of 218 respondents was selected using multistage stratified random sampling across six wards.
Data were collected using semi-structured questionnaires containing Likert-scale and open-ended items, complemented by focus group discussions and key informant interviews. Quantitative data were analyzed using SPSS to generate descriptive statistics, Pearson correlation coefficients, and multiple regression models. Qualitative data were thematically analyzed to enrich interpretation of the quantitative findings.

Ethical approval was obtained from KCA University, and authorization to conduct the study was granted by the National Commission for Science, Technology and Innovation (NACOSTI), and local administrative offices. Ethical principles, including informed consent, confidentiality, anonymity, and voluntary participation, were strictly observed throughout the study.

Results by Study Objective

Response Rate and Socio-Demographic Characteristics of Respondents

The study achieved a strong response rate of 90.8%, with 198 out of 218 questionnaires successfully completed and analyzed. This high response rate enhanced the reliability and representativeness of the findings. Females constituted 56.1% of the respondents, while males accounted for 43.9%. The majority of participants were aged between 36–45 years (41.9%), reflecting a mature parenting population. Most respondents were married (74.7%), had one to two children (49.5%), and possessed tertiary-level education (87.9%), indicating a relatively educated and actively parenting cohort.

Types of Domestic Violence Experienced During Childhood

The first objective sought to identify the types of domestic violence experienced by respondents during childhood. Descriptive analysis revealed a high prevalence of exposure to multiple forms of domestic violence. Witnessing physical violence between caregivers recorded the highest mean score ($M = 3.60$, $SD = 1.31$), indicating that a substantial proportion of respondents frequently observed physical abuse within their households during childhood. Emotional abuse by caregivers was also commonly reported ($M = 3.04$, $SD = 1.39$), alongside direct physical abuse directed at the respondents themselves ($M = 2.96$, $SD = 1.37$).

Additionally, many respondents reported witnessing the abuse of a parent or caregiver by an intimate partner ($M = 2.95$, $SD = 1.40$). Respondents also indicated moderate levels of perceived unsafety within the home environment during childhood due to family conflict ($M = 2.59$, $SD = 1.35$). Long-term emotional and psychological effects linked to childhood exposure to domestic violence were also reported ($M = 2.71$, $SD = 1.38$).

These findings demonstrate that childhood exposure to domestic violence in Makueni County was widespread and multifaceted, encompassing physical, emotional, and psychological forms of abuse.

Parenting Practices Among Adults Exposed to Domestic Violence in Childhood

The second objective examined the parenting practices of adults who had been exposed to domestic violence during childhood.

Descriptive findings indicated considerable variability in parenting behaviors among respondents. A notable proportion exhibited authoritarian, harsh, or emotionally inconsistent parenting practices, characterized by rigid discipline, difficulty regulating anger, and limited emotional responsiveness toward their children.

However, qualitative findings from focus group discussions and key informant interviews revealed that some respondents consciously adopted non-violent, empathetic, and supportive parenting approaches. These respondents often reported participation in counseling services, parenting skills workshops, faith-based support groups, or community psychosocial programs. Such support appeared to enhance emotional awareness, patience, and intentional efforts to avoid repeating violent patterns experienced during childhood.

These findings suggest that while childhood exposure to domestic violence increases vulnerability to maladaptive parenting practices, access to psychosocial support serves as an important protective factor in promoting positive parenting behaviors.

Relationship Between Childhood Exposure to Domestic Violence and Adult Parenting Practices

The third objective sought to determine the relationship between childhood exposure to domestic violence and adult parenting practices.

Pearson correlation analysis revealed a moderate, positive, and statistically significant relationship between childhood exposure to domestic violence and maladaptive parenting practices in adulthood ($r = 0.412$, $p < 0.001$). This indicates that higher levels of exposure to domestic violence during childhood were associated with an increased likelihood of harsh, inconsistent, or emotionally unresponsive parenting behaviors.

Multiple regression analysis further demonstrated that childhood exposure to domestic violence was a significant predictor of adult parenting practices even after controlling for selected socio-demographic variables, including age, gender, marital status, and education level. This finding confirms that childhood exposure to domestic violence independently contributes to parenting outcomes in adulthood.

Summary of Results

Overall, the results indicate that childhood exposure to domestic violence was highly prevalent among respondents in Kibwezi West, Makueni County and manifested in multiple forms. Such exposure was significantly associated with parenting practices in adulthood, increasing the risk of maladaptive behaviors. However, the presence of psychosocial support and trauma-informed interventions emerged as key protective factors capable of fostering healthier parenting practices and interrupting intergenerational cycles of violence.

Discussion

The study found a high prevalence of childhood exposure to domestic violence among adults in Kibwezi West Makueni County, with emotional, physical, and psychological abuse emerging as the most common forms. These findings suggest that domestic violence remains a pervasive experience within family settings in this rural context, with lasting implications beyond childhood.

Consistent with Attachment Theory, repeated exposure to violence during formative years likely disrupts the development of secure attachment relationships, resulting in long-term challenges in emotional regulation, trust, and caregiving sensitivity.

The significant association between childhood exposure to domestic violence and adult parenting practices supports Trauma Theory, which posits that unresolved childhood trauma can impair stress regulation and emotional responsiveness in adulthood. Parents who were exposed to violence in childhood may struggle with managing anger, providing consistent discipline, and responding empathetically to their children's emotional needs, thereby increasing the likelihood of authoritarian or emotionally inconsistent parenting behaviors.

These findings align with existing literature on the intergenerational transmission of violence, which demonstrates that individuals exposed to domestic violence during childhood are at increased risk of replicating maladaptive parenting patterns in adulthood. However, the study also identified evidence of resilience among respondents who had accessed counseling, parenting support programs, or other psychosocial interventions. Such support appeared to enhance emotional awareness and intentional efforts to adopt non-violent parenting practices, indicating that exposure to domestic violence does not inevitably result in negative parenting outcomes.
Overall, the findings underscore the importance of trauma-informed and community-based interventions in mitigating the long-term effects of childhood exposure to domestic violence. By addressing unresolved trauma and strengthening positive parenting skills, such interventions hold significant potential for disrupting intergenerational cycles of violence within rural Kenyan communities.

Conclusion

The study concludes that childhood exposure to domestic violence significantly influences parenting practices in adulthood. While early exposure increases the risk of maladaptive parenting behaviors, access to trauma-informed interventions plays a critical role in promoting positive parenting and breaking intergenerational cycles of violence.
These findings underscore the need for long-term psychosocial support for adult survivors of childhood domestic violence, particularly in rural communities. Integrating trauma-informed care into parenting, mental health, and child protection programs is essential for strengthening family functioning and safeguarding future generations.

Implications of the Study

Theoretically, the study strengthens the applicability of attachment and trauma theories within rural Kenyan contexts by providing empirical evidence on how childhood trauma shapes adult parenting behaviors. Practically, the results highlight the need for trauma-informed parenting programs targeting adult survivors of childhood domestic violence, particularly in high-risk rural settings such as Makueni County.
From a policy perspective, the study underscores the importance of integrating long-term psychosocial support for adult survivors into existing gender-based violence and child protection frameworks. Current interventions largely focus on immediate victims, overlooking adults who were exposed to violence in childhood and are now raising children. Addressing this gap is critical for breaking intergenerational cycles of violence.

Recommendations

1. **Strengthening Trauma-Informed Counseling Services:**

   Government and non-governmental organizations should expand access to trauma-informed counseling and mental health services for adult survivors of childhood domestic violence, particularly in rural and underserved areas.

2. **Implementation of Parenting Skills Programs:**

   Community-based parenting programs should be developed and scaled up to equip parents with positive parenting skills, emotional regulation strategies, and non-violent discipline methods.

3. **Integration into County and National Policies:**

   County governments and relevant ministries should incorporate the needs of adult survivors of childhood domestic violence into existing GBV, child protection, and mental health policies.

4. **Capacity Building for Practitioners:**
5.

   Social workers, counselors, teachers, and healthcare providers should be trained in trauma-informed care to enable early identification and appropriate support for parents affected by childhood trauma.
6. Community Awareness and Prevention Initiatives:

   Community sensitization programs should be strengthened to challenge the normalization of domestic violence, promote healthy family relationships, and encourage help-seeking behaviors.

7. **Further Research:**

   Future studies should adopt longitudinal and qualitative designs to explore resilience factors, gender differences, and the long-term effectiveness of intervention programs in disrupting intergenerational violence.

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SOCIOECONOMIC FACTORS AS CORRELATES OF POSTGRADUATE STUDENTS SELF ACTUALIZATION: A CASE OF KCA UNIVERSITY, NAIROBI

Martha Maina

Abstract

In recent years, the goals of higher education have expanded beyond academic performance to include the holistic development of students, particularly in relation to personal growth and psychological well-being. Within postgraduate education, self-actualization has emerged as a critical developmental milestone, closely tied to academic engagement and personal advancement. However, the extent to which postgraduate students attain self-actualization is often shaped by various external factors, especially socioeconomic conditions. In the Kenyan context, many students face persistent barriers such as limited academic guidance, financial instability and inadequate institutional support, which can hinder their ability to achieve meaningful academic and personal outcomes. Despite the relevance of self-actualization in postgraduate development, few studies have examined how academic, financial and social factors collectively correlate with self-actualization. This study examined the correlation between socioeconomic factors and the self-actualization of postgraduate students at KCA University, Kenya. The objectives were to determine the levels of self-actualization among postgraduate students, assess the correlation between academic factors and self-actualization, examine the relationship between financial factors and self-actualization, and evaluate how social factors relate to self-actualization. Guided by Maslow's Hierarchy of Needs and Bandura's Social Cognitive Theory, the study explored how these dimensions are associated with students' personal growth. The target population consisted of 940 postgraduate students, from which a sample of 94 was selected using random sampling. A correlational research design was adopted, and quantitative data were collected using a structured questionnaire incorporating a self-actualization scale. Data were analyzed using descriptive and inferential statistics, including Pearson's product-moment correlation and regression analysis. The findings showed that only 38.30% of students had high levels of self-actualization, suggesting that a majority of postgraduate students were either in moderate (44.68%) or low (17.02%) self-actualization categories. Among the three factors examined, academic factors showed the strongest positive correlation with self-actualization ($\beta = 0.45$, $p = 0.001$), indicating that postgraduate students who reported greater academic support such as supervision and feedback, also tended to report higher levels of self-realization. Financial factors also showed a significant association ($\beta = 0.32$, $p = 0.024$), implying that economic stability plays a notable role in facilitating personal development. Social factors, while positively related, had minimal significance ($\beta = 0.18$, $p = 0.233$), suggesting that interpersonal dynamics had a more limited role in relating to self-actualization. The overall model was significant ($F = 5.01$, $p = 0.003$), accounting for 17% of the variance in self-actualization ($R^2 = 0.17$). Based on these findings, the study recommends that KCA University enhance institutional support mechanisms by strengthening academic mentorship and supervision frameworks, expanding financial aid options to alleviate economic constraints and establishing psychosocial support programs tailored to the unique needs of

postgraduate students. Additionally, continuous monitoring of student development and increased exposure to research and career development opportunities are encouraged to foster holistic self-actualization throughout the postgraduate journey.

AN ASSESSMENT OF CONFLICT MANAGEMENT STRATEGIES AND ORGANIZATIONAL PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN TESO NORTH SUB COUNTY, KENYA

EKIRING D. AKULEUT

Abstract

Conflict is an inevitable part of any organizational environment, and public secondary schools are no exception. In the educational sector, conflicts may arise between students, teachers, administrators, or among parents. The study sought to assess conflict management strategies and organizational performance in public secondary schools in Teso North Sub-County, Kenya. The rising conflicts in Teso North Sub-County, hindering teacher involvement in the education system, and paucity of research examining the viability of avoidance, collaboration, and negotiation strategies as conflict management techniques, are the main issues that has driven the need for this research. This study was guided by the following objectives: To assess causes of conflict in public secondary schools, to evaluate conflict management strategies used by public secondary schools in, to examine organizational performance of public secondary schools in, and to assess relationship between conflict management strategies and organizational performance in public secondary schools all in Teso North Sub-County, Kenya. This study was guided by the Constructive Controversy Theory and supported by the Social Exchange Theory. It aimed to shed light on conflict management tactics, assist decisionmakers, education stakeholders, and school administration teams like MoE and TSC on in identifying the factors that contribute to conflict in social institutions, getting sustainable remedies to factors and add to the body of knowledge already existing. A Correlational research design was used in an attempt to compare conflict management techniques employed with employee performance. Quantitative data were analyzed using descriptive and inferential statistics. Narratives and direct quotations were used to present thematically analyzed qualitative data in this research. Multi-stage sampling strategies, specifically simple sampling and stratified sampling techniques were used; yielding sample size of 73 research subjects (63 teachers, 9 principals and the Sub-County director of education). A questionnaire and

an interview guide were used to collect data from 67 respondents (58 teachers, 9 principals and Sub-County director of education). The findings revealed that teachers predominantly identified ideological differences as a major cause of conflict (42.3%), principals cited inadequate resources (50.0%), and Sub-County Director of Education poor communication (50.0%). Avoidance emerged as the most preferred conflict management strategy among teachers (69%) and principals (62.5%), with negotiation being the least preferred by both groups (69% and 62.5%, respectively). Teachers generally rated the organizational performance lower than principals. Correlation analysis demonstrated a strong positive relationship between negotiation ($r = 0.808$, $p < 0.001$) and organizational performance, a moderate positive correlation for collaboration ($r = 0.673$, $p < 0.001$), and a strong negative correlation for avoidance ($r = -0.897$, $p < 0.001$). The study concluded that while avoidance is a prevalent conflict management strategy, it is significantly associated with lower organizational performance. Conversely, negotiation and collaboration are strongly linked to better outcomes. The research contributes to the understanding of organizational performance in public secondary schools and suggests that fostering negotiation and collaboration, while discouraging avoidance, could enhance school effectiveness. Furthermore, the study found that certain individual differences of teachers and administrators (gender, marital status, training status, yearly income, and educational experience) did not significantly affect school organizational conflict.

PSYCHOLOGICAL PREDICTORS OF MARITAL SATISFACTION AMONG NEWLYWED COUPLES: A CASE STUDY OF SELECTED PARISHES AT THE ARCHDIOCESE OF NAIROBI, KENYA

LILLIAN WAIRIMU MAINA

Abstract

Marital satisfaction is a key determinant of individual well-being and family stability; however, its psychosocial predictors remain underexplored within the Kenyan context, particularly among newly married couples. This study examined the extent to which psychosocial factors predicted marital satisfaction among newlywed couples in selected parishes within the Archdiocese of Nairobi. Specifically, the study sought to determine the level of marital satisfaction, examine the predictive role of personality traits, assess the influence of social support, and develop an evidence-based intervention model to enhance marital satisfaction. The study was grounded in the Big Five Personality Traits Theory and the Social Exchange Theory. It investigated how personality traits—extraversion, agreeableness, conscientiousness, neuroticism, and openness—and perceived social support from family, friends, and clergy influenced marital satisfaction during the early years of marriage. A descriptive survey research design was adopted, and a census sampling technique was used to target 108 newlywed individuals from Divine Mercy Kariobangi and Ngararigа Parishes. Data were collected using standardized questionnaires, with a response rate of 100 participants. Data analysis was conducted using Microsoft Power BI, employing both descriptive and inferential statistics. The findings indicated that 63% of the respondents reported moderate marital satisfaction, 22% reported high satisfaction, while 15% reported low satisfaction. Regression analysis revealed that personality traits significantly predicted marital satisfaction, $F(5, 94) = 7.09$, $p < .001$, with an adjusted R^2 of .28, leading to the rejection of the first null hypothesis (H_{01}). Conscientiousness, agreeableness, and extraversion were significant positive predictors, whereas neuroticism was a significant negative predictor. Openness was not a significant predictor. When social support was added to the model, the explained variance increased to 37%, $F(6, 93) = 11.03$, $p < .001$, resulting in the rejection of the second null hypothesis (H_{02}). Social support emerged as a significant positive predictor of marital satisfaction. Based on the findings, a culturally responsive intervention model emphasizing personality-informed counselling, faith-based support systems, and community-based enrichment programs was developed. The study concluded that personality traits and social support significantly influence marital satisfaction among newlywed couples and recommended their integration into church-based counselling and marital support initiatives.

AN ASSESSMENT OF PREDICTIVE ABILITY OF EMOTIONAL INTELLIGENCE ON EMPLOYEE PRODUCTIVITY AMONG HEALTH WORKERS IN SELECTED PUBLIC HOSPITALS IN UASIN-GISHU COUNTY, KENYA

MOVINE MORAA TONOGO

Abstract

This study was an assessment of predictive ability of emotional intelligence on employee productivity among health workers in selected public hospitals in Uasin-Gishu County, Kenya. The purpose of the study entails assessing the predictive ability of emotional intelligence on employee productivity among healthcare workers in public healthcare setting. The study assesses the predictive ability of emotional intelligence on employee productivity among health workers in public hospitals in Uasin-Gishu County, Kenya. The study objectives were to examine the relationship between self–awareness and employee productivity, to investigate the relationship between self–management and employee productivity, to explore the relationship between social awareness and employee productivity, and to determine the relationship between relationship management and employee productivity, among healthcare workers in Uasin-Gishu County, Kenya. Hypotheses were used to assess and address the study objectives, which generally implied emotional intelligence did not have significantly predict employee productivity. A correlational research design was employed to facilitate a structured approach in quantitative data collection and analysis towards determining the predictive ability of emotional intelligence on employee productivity. The study population encompassed 282 healthcare workers currently working in 6 conveniently sampled public hospitals. The stratified Fisher's Exact Test was used to establish the suitable sample size of the study, which involved 163 participants, 58% of the target population. The stratified random sampling method was used to select and disproportionately group the study participants to represent different healthcare professionals in the public hospitals. Research instrumentation featured a self-administered Health Service Employee Questionnaire (SAHS-EQ). A pilot study was conducted at Roysambu in Nairobi, Kenya, which tested the validity and reliability of the research instruments. Descriptive statistics, including mean, frequencies, and standard deviation, and inferential statistics, encompassing correlation and linear regression analyses, were performed and study results presented through tables and figures generated with statistical software. The study results indicated no significant relationship between the dimensions of emotional intelligence and employee productivity, wherein self-awareness ($r = -0.165$, $p > 0.05$), self-management ($r = -0.081$, $p > 0.05$), social awareness ($r = -0.065$, $p > 0.05$), and relationship management ($r = -0.003$, $p > 0.05$). Moreover, the study concluded that emotional intelligence is not a significant predictor of employee productivity among health workers in public hospitals, $F(1,129) = 1.609, p>0.05$. The findings suggest that emotional intelligence does not predict employee productivity among healthcare workers. The findings are aimed at informing public health policy makers, administrators, and personnel on the role of emotional intelligence on productivity in the healthcare settings. The study ensured ethical considerations by obtaining informed consent from all participants, providing them with on the study's purpose, procedures, and capacity to withdraw from the study at any time. All study data was safely and securely stored

by the researcher. The study recommends future studies to investigate effective emotional intelligence frameworks that establish the effect of emotional intelligence on employee productivity in public healthcare settings. The study also recommends emotional intelligence should be considered as a complementary tool rather than a primary indicator of employee productivity in healthcare settings.

THE ROLE OF SCHOOL MANAGEMENT PRACTICES ON THE ACADEMIC PERFORMANCE OF PRIVATE SECONDARY SCHOOLS: A CASE STUDY THE KAJIADO COUNTY KENYA

MUTISYA CHRISTINE MUTHEU

Abstract

Education is universally acknowledged as a cornerstone for individual empowerment, social transformation, and national development. It serves as the foundation upon which societies build human capital, foster innovation, and achieve sustainable growth. Effective school management, therefore, plays a crucial role in ensuring that educational institutions fulfill their fundamental purpose of nurturing learners, promoting intellectual growth, and shaping responsible and productive citizens. This study examined the role of school management practices on the academic performance of private secondary school students in Isinya Sub-County, Kajiado County. Specifically, it sought to determine how curriculum implementation procedures, quality assurance mechanisms, availability and utilization of teaching and learning materials, resource mobilization, and monitoring and evaluation processes influence student academic outcomes. The research was motivated by the growing concern over disparities in academic performance among private secondary schools despite the availability of resources and qualified personnel. The study was anchored in Instructional Leadership Theory, which posits that effective school leaders enhance student learning outcomes by actively supporting and supervising teaching and learning processes. Leadership activities such as curriculum supervision, classroom observation, teacher mentoring, and data-driven decision-making were emphasized as essential components of effective school management. A qualitative research design was adopted to gain deeper insights into how management practices translate into student achievement. The quantitative analysis was also used to give the existing relationship between school management practices and students performance. Data was collected through questionnaires and interviews administered to a sample of 78 respondents, including principals, teachers, and other stakeholders, selected through purposive and simple random sampling techniques. The data collected were analyzed descriptively using percentages and presented alongside detailed narrative explanations to provide a comprehensive interpretation of the findings. Findings from the study contributed to a deeper understanding of how specific management practices influence academic performance in private secondary schools. The results offered valuable implications for education policymakers, school administrators, and consultants by highlighting practical strategies for strengthening instructional quality, teacher motivation, and learner achievement. Ultimately, the study concluded that strong instructional leadership, supported by effective management systems, is a key driver of educational excellence and a crucial pathway toward sustained improvement in student performance within private secondary schools.

MEDIATING ROLE OF LEADERSHIP STYLE ON THE RELATIONSHIP BETWEEN CHURCH SPONSORSHIP AND ORGANIZATIONAL CULTURE IN SELECTED PRIVATE UNIVERSITIES IN NAIROBI, KENYA

MUTIE WAMAITHA

Abstract

This study concerns an exploration of the mediating role of leadership style on the relationship between church sponsorship and organizational culture in selected private universities in Nairobi, Kenya. The study stemmed from the recognition of the significant role that organizational culture plays in shaping the identity, values, and operations of educational institutions. The study was undertaken between August and September 2024. The study sought to achieve four specific objectives: to assess how the sponsor's involvement in governance influenced the organizational culture of selected private universities in Nairobi, Kenya; to determine the organizational culture of selected private universities in Nairobi, Kenya; to assess how the sponsor's material support influenced the organizational culture of selected private universities in Nairobi, Kenya; and, to determine whether leadership style mediates the impact of church sponsorship on organizational culture of selected private universities in Kenya. The research was quantitative in nature and adopted a correlational design, grounded in both resource dependence theory and stakeholder theory. The target population was 474 university staff comprising faculty, heads of departments and deans of schools. A sample size of 217, representing 45.8% of the target population, was selected via disproportionate stratified sampling technique. Data was collected using standardized instruments such as Denison et al.'s (2014) Organizational Culture Survey Questionnaire, the Multifactor Leadership Questionnaire by Bass and Avolio (1996), and a researcher-developed Likert scale questionnaire for measuring church sponsorship. The questionnaires were administered online using Google Forms. Instrument reliability was determined using Cronbach's alpha while instrument validity was ascertained through thorough review of literature and expert review by the thesis supervisors. Data was analyzed using mean and standard deviation scores as well as correlation and regression analysis in SPSS. The data was presented using figures and tables. Results showed a positive relationship between sponsor involvement in governance and organizational culture, indicating that increased sponsor participation improves organizational culture. A similar positive relationship between sponsors' material support and organizational culture was established, suggesting that more material support leads to better organizational culture. Majority of respondents rated the organizational culture as excellent. However, leadership style does not significantly mediate the relationship between church sponsorship and organizational culture. Conclusion was drawn that church sponsorship has a positive impact on organizational culture. In practice, sponsors should prioritize board representation and engage in student life and academic initiatives. Institutions should foster structured and formalized engagements between sponsors and key academic and student leaders to enhance organizational culture, with leadership style playing no significant mediating role. Policymakers within church-sponsored universities should develop clear guidelines on the role of sponsors in governance, focusing on strategic rather than operational engagement. Governance frameworks should be

reviewed to ensure that sponsors maintain a strong presence on university boards without micromanaging daily administrative functions. Future studies should adopt a mixed-methods approach so as to yield a more comprehensive investigation of the mechanism through which church sponsorship influence organizational culture. Future research should also include non-church-sponsored private universities in Nairobi or other regions in Kenya. In addition, future research should incorporate student perspectives by expanding the participant pool to include students alongside administrators, faculty, and staff.

ROLE OF UNDERLYING DYNAMICS ON QUALITY OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING PROGRAMMES WITHIN THE NATIONAL YOUTH SERVICE – KENYA -AN ANALYSIS OF RESOURCE MOBILIZATION AND ITS IMPACT ON TVET SKILLS QUALITY-

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Abstract

The objective of the study was to find the role resource mobilization play on the quality of technical, vocational, education and training in the National Youth Service-Kenya. The study was theoretically anchored on Resource Mobilization Theory. The relationship between the study variables was determined by descriptive research design where purposive sampling and basic random sampling were used to determine a sample size of 38 out of a targeted a population of 567 which included NYS TVET principals and trainers. Structured questionnaires, interview guides and secondary data sources were used to collect data. Data was analysed using SPSS 27.0, correlation and regression analysis were done for inferential statistics while the standard deviation, mean, percentages and frequencies were for the descriptive statistics. The findings indicated that resource mobilization does not have a statistically significant influence on the quality of TVET programs. Furthermore, the standardized beta value indicates that the effect size is small and in the opposite direction of the hypothesized positive influence an indication that resource mobilization might not be contributing positively to TVET skills quality. The study recommends NYS to invest in resource planning for practical skills development, employ digital tools for instructional delivery, develop quality assurance mechanisms and Monitoring and Evaluation frameworks in TVET programme to enhance quality TVET skills education and training.

Key words: TVET Skills Quality, Resource Mobilization, Competence.

INTRODUCTION

In a global learning environment, technical vocational education and training (TVET) programmes interact with diverse range of dynamic factors, collectively shaping the quality and efficacy of such programmes. Labour market demands well equipped individuals with competencies, knowledge and skills, which TVET systems are key enablers and instruments that increase employability, improve social inclusion and better job prospects (ILO, 2020).

The evolution of TVET in Kenya over time has aimed at providing practical skills and competencies to meet the economic needs. In the early 19th century, TVET programmes were initially limited and considered a secondary option compared to academic education. Since then, TVETs have undergone reforms to ensure bridging of the skills gap to enhanceg employability. According to ZIZI Afrique Foundation (2022), the Kenyan government has expanded TVET institutions to 2,431 accredited TVET institutions in 2024 (TVETA website) compared to 753 in 2013. This growth is attributed to the Kenya's TVET sector experiencing increased collaboration between industry and education stakeholders to bridge skills gaps and enhance employability. Technical Trainers Colleges, Vocational Training Centres (VTCs), Technical Training Institutes (TTIs) and National Polytechnics forms part of the TVET sector in Kenya.

The quality of programmes in TVETs is directly associated with how well institutions achieve learning outcomes in relation to knowledge, skills and competence which subsequently fulfils the objectives of learning (UNESCO-UNEVOC, 2020). Ideally, adequate funding and qualified infrastructure are essential in ensuring quality education. The quality of TVET programs, particularly within the National Youth Service (NYS) in Kenya, is influenced by several underlying dynamics. This study examines resource mobilization, highlighting the role it plays in shaping the quality of TVET programs.

At the NYS, youth aged 18 to 24 are voluntary recruitment to access free technical and vocational education courses offered in seventeen NYS vocational training institutions across Kenya. NYS since establishment has faced increase in yearly youth intake from 4,000 to a projection of 100,000 by 2028. The increase of youth into NYS has created competition for resources for the three training sub programmes of Paramilitary Skills, National Service and TVET. The resources allocated to TVET training also has to be reallocated to the seventeen NYS TVET institutions. This therefore affects the TVET programme and compromises on quality of graduates' learning experience.

However, no existing studies have comprehensively addressed the specific context the role of resource mobilization on the quality of TVET programmes in NYS. There is a research gap in understanding the roles the underlying dynamics such as resource mobilization play in this context. This study bridges this gap by studying relation of resource mobilization for TVET skills and the quality of TVET programmes in NYS-Kenya. This study focuses on ways to which resource mobilization influence the quality of TVET programmes in NYS-Kenya. Hypothesising that Resource mobilization has a positive influence on the quality of TVET programs at NYS-Kenya.

LITERATURE REVIEW

Empirical Literature Review

Musyoka (2014) research study explored how resource mobilization influences the performance of Community Based Organizations (CBOs) in Tseikuru Sub County, Kenya. Resource mobilization theory framed this investigation, and the findings highlighted significant challenges, such as over 33% of respondents reporting children missing school due to water-fetching responsibilities impacting their health and education negatively. Despite the study focussing on resource mobilization, it did not focus on how resource mobilization influenced the quality of TVET programmes.

Densford et al. (2018) aimed to investigate how the mobilization of resources impacts the performance of road projects executed by local firms. The study focused on the Lake Basin Region in Kenya. The findings indicated that the mobilization of project resources significantly influenced the performance of road infrastructure projects done by these firms. Densford et al. in 2018 focused on the performance of projects while this study concentrated on the quality of programmes.

Gachunga (2021) study aimed to assess the capacity of TVET institution leaders to mobilize resources and how this impacted institutional competitiveness, guided by resource dependency theory. Their findings highlight resource mobilization as a critical component of strategic leadership that influences the competitiveness of TVET institutions in Kenya. It concludes that TVET institutions suffer from insufficient resources that could otherwise enhance their competitiveness, emphasizing the necessity for institutional leaders to develop strategies for effective resource mobilization. It failed in assessing the quality attributes of outcomes, which this study evaluated.

Silus (2020) study specifically explored how resource mobilization during the period the world was experiencing Covid-19 influenced empowerment projects for the youth in Busia County, Kenya. This study focused on youth empowerment projects in Busia, with major focus on performance, while the focus of the current study is on the quality of TVET programmes.

From the above studies, it is evident that effective resource mobilization has a positive substantial influence on the performance of various projects. However, no project has concentrated on the quality outcome of resource mobilization. In addition, no study focused on the TVET programmes offered by NYS. Therefore, this study specifically evaluated how resource mobilization influences the quality of TVET programmes at NYS, Kenya.

Theoretical Review

Resource Mobilization Theory (RMT) originated in the 1970s within the field of sociology, particularly associated with scholars like Mayer Zald and John D. McCarthy. Proponents of the theory such as Zald and McCarthy (1977) argued that understanding resource mobilization is crucial for explaining the success or failure of social movements and organizations. In this context, RMT offers a lens to understand how technical and vocational education and training (TVET) institutions mobilize and allocate resources to enhance programme quality. This study examines how NYS-Kenya leverages external funding, partnerships with industry, and political support to improve the delivery and outcomes of its TVET programmes. By applying Resource Mobilization Theory, the study analyzes the role of organizational structures, resource dependencies, and political opportunities in shaping the effectiveness of resource mobilization efforts within the context of TVET programme quality improvement.

Conceptual Framework

The conceptual framework showcases how the quality of TVET programmes in NYS-Kenya (dependent variable) is impacted by the resource mobilization on TVET skills (independent variables). The quality of TVET skills is projected through three key areas encompassing quality assurance system effectiveness, capacity to perform tasks and trainees to trainer ratio. The outcomes of the quality of TVET skills are premised on the independent variables resource mobilization entailing strategies for acquiring necessary resources to support the TVET programme. The strategies such as exchequer (government) funding, partnerships and collaborations, and optimizing internal resources ensure sustainability of the TVET training in NYS.

RESEARCH METHODOLOGY

Descriptive research design was employed for the in seventeen NYS TVET Institutions in Kenya. The study population was 567 trainers and principals in NYS TVET institutions with a sample size of 38 respondents who were three principals selected using purposive sampling and thirty-four instructors selected using simple random sampling method.

Data collection used survey questionnaires with strict confidentiality and structured interviews on the three institution principals. Secondary data sources obtained from performance reports, strategic plan, Kenya National Bureau of Statistics economic survey reports, and Kenya Vision 2030 reports.

A research permit was secured from the National Commission for Science, Technology and Innovation (NACOSTI) and professional norms established by the KCA University and ethical research principles throughout the study was adhered to and the information wass used solely for research purposes.

Cronbach's Alpha analysis was used to assess the internal consistency of measurement scales, Validity methods were used to ensure validity (content, construct, and face validity). The reliability analysis using Cronbach's Alpha shows a value of 0.833, which indicates a high level of internal consistency across the 18 items measured in the study.

SPSS was used for descriptive analysis, including frequency tables, percentages, and means to summarize and explore the data. Linear regression analysis employed to investigate the relationships between variables. Pearson correlation used to assess the strength and direction of these relationships, with a significance level

set at 0.05. Additionally, tables are created to display response frequencies and percentages of respondents' opinions in a clear and understandable manner regarding the influence of dynamic factors on the quality of NYS TVET programmes is used to present the findings.

RESULTS/ FINDINGS

Demographic Characteristics of the Respondents

A total of 37 instructors and principals participated in this study. The gender distribution indicated that the female was making up 62.2% (23) of the sample, while males comprised 37.8% (14). The majority of respondents were staff members at 91.9% (34), and only 8.1% (3) of respondents were principals. The data indicated that the majority of respondents at 70.3% (26) have been with the institution for over 4 years, followed by 21.6% (8) for 3-4 years, 5.4% (2) less than 1 year and 2.7% (1) 1-2 years indicating that most participants have long-standing experience with the institution.

Descriptive Statistics

Respondents expressed their agreement levels with hypothesis 1: Resource mobilization has a positive influence on the quality of TVET programs at NYS-Kenya.

Table 5: Descriptive Statistics for Resource Mobilization Variable indicators

	N	Range	Minimum	Maximum	Mean	Std. Deviation
National Youth Service mobilizes resources through fundraising.	37	4	1	5	1.41	1.066
National Youth Service mobilizes resources through partnerships and collaboration.	37	4	1	5	2.86	1.417
National Youth Service actively engages in partnerships to source more resources.	37	4	1	5	2.86	1.437
National Youth Service conducts regular capacity assessments and skills development programmes to maximize internal expertise.	37	4	1	5	3.24	1.442
The Service leverages technology for efficient resource mobilization.	37	4	1	5	3.27	1.326
Valid N (listwise)	37					

The descriptive statistics for resource mobilization indicate a mix of perceptions. The lowest mean score of 1.41 is for the statement "National Youth Service mobilizes resources through fundraising," suggesting that NYS do not perceive fundraising as an effective means of resource mobilization. Other aspects, such as regular capacity assessments and skills development programmes to maximize internal expertise and partnerships and leveraging technology, have relatively higher mean scores, ranging from 3.24 and 3.27 respectively. These scores suggest a more neutral stance on how NYS engages in partnerships, conducts capacity assessments, and uses technology for resource mobilization. Although there is little satisfaction with partnerships and capacity-building efforts, there is need to improve to leverage these factors to enhance the overall quality of TVET programs at NYS.

While resource mobilization is an essential factor, the data shows that it currently does not have a significant positive impact on the quality of TVET programs at NYS-Kenya. More effective strategies may be needed to leverage resource mobilization to improve the quality of these programs.

Descriptive statistics for TVET skills quality

The descriptive statistics presents the distribution of variables related to TVET Skills Quality outcomes, which are crucial indicators of the quality of TVET programs.

Table 6: Descriptive Statistics for TVET Skills Quality and Related Variables indicators

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Has the recommended trainees to trainer ration	37	4	1	5	1.95	1.452	2.108
Integrates industry-relevant skills, practical training, and experiential learning opportunities to prepare students for immediate employment and career advancement.	37	4	1	5	3.19	1.221	1.491
Has quality assurance systems	37	2.00	1.00	3.00	1.3243	.62601	.392
Has high student satisfaction rates, positive outcomes in job placement and employer feedback.	37	4	1	5	3.22	1.250	1.563
Prioritizes skill development by offering specialized training, hands-on learning experiences, and industry certifications.	37	4	1	5	3.16	1.323	1.751
Has tailored programmes, mentorship opportunities, and collaboration with industry partners to ensure students acquire practical competencies required in the workforce.	37	4	1	5	2.97	1.404	1.971
Has strong job placement rates, positive employer feedback, and graduates' success in applying industry-relevant skills to real-world settings.	37	4	1	5	3.30	1.266	1.604
Has graduates who are well-equipped to meet the demands of the workforce, contributing positively to their respective industries and communities.	37	4	1	5	3.46	1.304	1.700
Valid N (listwise)	37						

Respondents generally indicate that the institutions are not meeting the recommended trainee-to-trainer ratio, with a relatively low mean score of 1.95. This suggests that there are serious staffing challenges in NYS that impact students' learning experience. The Student Satisfaction and Job Placement mean of 3.22 shows a more positive perspective on job placement and employer feedback. This suggests institutions are somewhat meeting student expectations in terms of employment outcomes, but there is potential to improve further to ensure higher satisfaction. Similarly, the score of 3.16 for skill development indicates that institutions are somewhat prioritizing skill development through specialized training and certifications, though it is necessary to put in place measures that fully prepare students for the workforce.

The Tailored Programs and Mentorship mean of 2.97 reflects that institutions are somewhat offering tailored programs and mentorship opportunities, an initiative that needs to be enhanced to better equip students with practical, workforce-relevant skills. The Job Placement and Employer Feedback mean of 3.30 indicates a positive perception of job placement rates, signalling some success in employability efforts. However, strengthening employer relations and refining graduate outcomes may lead to even better results. Graduate Preparedness has a relatively high mean of 3.46, suggesting that graduates are well-prepared to meet workforce demands, and are contributing positively to their industries and communities. This paints a more optimistic picture of institutional performance in preparing graduates for real-world challenges. However, the lower scores in other areas indicate that there are still critical areas, such as trainees to trainer ration, that need improvement. While institutions are perceived to have a strong graduate preparedness and decent job placement outcomes, there are notable gaps in areas such as trainee-to-trainer ratios, industry relevance, and tailored programs. Improving engagement with industry partners, providing more specialized, hands-

on training, and addressing staffing shortages will be crucial for enhancing training quality and employment outcomes for students.

Resource mobilization on the TVET skills quality and TVET skills quality aggregated variables indicators

The descriptive statistics presents the distribution of independent variables Resource Mobilization on the TVET Skills Quality in relation to dependent variable TVET Skills Quality

Table 7: Descriptive Statistics for Resource Mobilization on the TVET Skills Quality and TVET Skills Quality aggregated variables Indicators

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Resource Mobilization	37	15.00	7.00	22.00	13.6486	4.02227	16.179
TVET Skills Quality	37	30.00	8.00	38.00	22.5676	7.88297	62.141
Valid N (listwise)	37						

The mean score for resource mobilization is 13.65, with a range between 7 and 22, and a standard deviation of 4.02. This indicates that there is disparity on how NYS TVET institutions mobilize resources. Institutions with lower scores may need to enhance their partnerships, and internal resource generation to meet their needs effectively. Consistent and robust resource mobilization is essential to maintaining and improving program quality across all institutions.

The mean score of 22.57 indicates that respondents generally perceive the quality of TVET programs as moderate. However, the wide range from 8 to 38 highlights significant disparities in program quality between institutions, with some performing very well and others struggling. High variability in quality also suggests that some institutions may benefit from increased oversight or targeted interventions to ensure students are receiving high-quality education and training. The insights emphasize that challenges remain in resource mobilization and institutions scoring lower may struggle to maintain high-quality programs.

Inferential Statistics

The correlation results provide insights into the relationships between the variable Resource Mobilization, and the dependent variable TVET skills quality.

Table 8: Correlation Matrix for TVET Skills Quality and Independent Variable Resource Mobilization on the TVET Skills Quality

		Resource Mobilization	TVET Skills Quality
Resource Mobilization	Pearson Correlation	1	.231
	Sig. (2-tailed)		.169
	N	37	37
TVET Skills Quality	Pearson Correlation	.231	1
	Sig. (2-tailed)	.169	
	N	37	37

In Table 8, Resource Mobilization while positive, shows a weaker and non-significant correlation with TVET Skills Quality ($r = 0.231$, $p = 0.169$). This suggests that although mobilizing resources might contribute to TVET skills quality, its impact is less direct or less strong compared to other factors. The analysis reveals that Resource Mobilization shows a weaker association to TVET skills quality.

The figure below present scatterplots for TVET skills related resource dynamic- resource mobilization on TVET skills quality and TVET skills quality. The points distribution shows the variable correlation. The

points in resource mobilization against TVET skills quality scatter all over indicating non existing correlation between the variables.

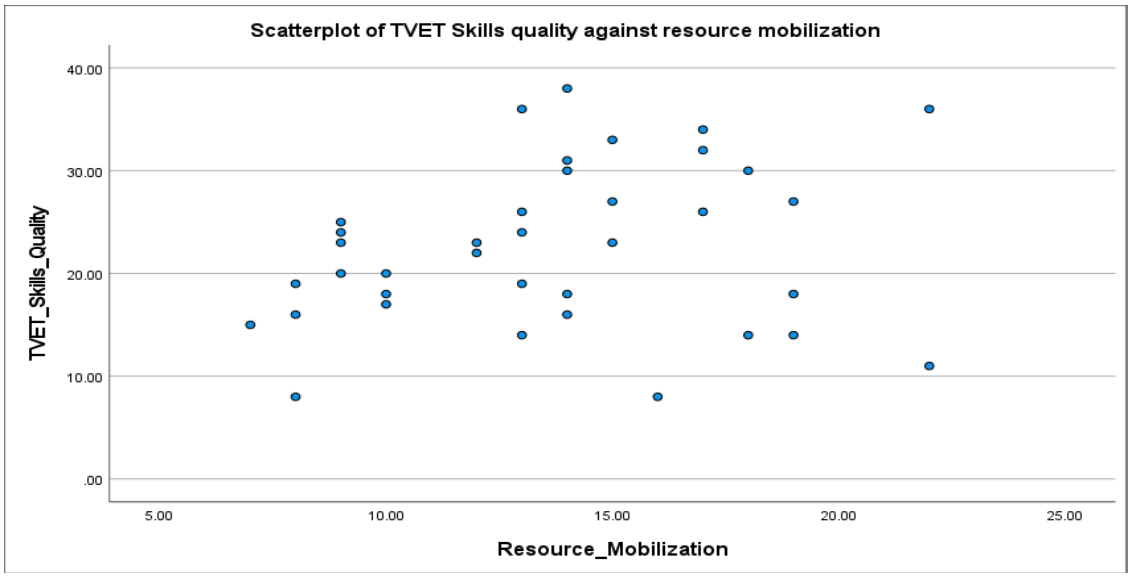


Figure 2: Scatter plot of TVET skills quality against resource mobilization

Table 9: Coefficients Table for Predictors of TVET skills quality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.052	3.784		.542	.591
	Resource Mobilization	-.142	.230	-.072	-.618	.541

a. Dependent Variable: TVET Skills Quality

The coefficients table provides insight into the predictors of TVET program quality at NYS-Kenya. The coefficient for Resource Mobilization is negative (-0.142) with a p-value of 0.541. Since the p-value is greater than 0.05, this suggests that resource mobilization does not have a statistically significant influence on the quality of TVET programs. Furthermore, the standardized beta value (-0.072) indicates that the effect size is small and in the opposite direction of the hypothesized positive influence. This means that, contrary to expectations, resource mobilization might not be contributing positively to TVET skills quality.

These results highlight that mobilization does not appear to contribute significantly to quality improvements. Therefore, to enhance the effectiveness of TVET programs at NYS-Kenya, it is crucial to focus on strengthening other dynamics on the TVET skills quality, particularly those related to curriculum development, competency-based education, and adherence to industry standards.

DISCUSSION

The findings show that resource mobilization was not positively correlated, an indication that variations in TVET skills quality was not influenced by the Resource Mobilization on the TVET Skills Quality. Based on the the hypothesis - Resource Mobilization Positively Influences the Quality of TVET Programs at NYS-Kenya, the multiple regression analysis, the coefficient for Resource Mobilization was -0.142 with a p-value of 0.541>0.05 indicating that resource mobilization does not significantly influence TVET program

quality at NYS. The negative standardized beta value (-0.071) suggests that resource mobilization may not have a meaningful effect on the quality of TVET programs. However, resources are key to execution and implementation of policies and play the aptly part in TVET skills development, their mobilization does not have direct link to the quality of TVET as the study indicates.

CONCLUSIONS OF THE STUDY

The study provides clear evidence that the impact of resource mobilization on TVET skills quality was found to be smaller. Although NYS-Kenya has successfully mobilized external resources, such as funding and partnerships, these resources are not fully optimized to produce significant improvements in program quality. This finding suggests that while mobilizing resources is important, the strategic allocation and utilization of those resources, supported by effective policies, have a more direct and substantial influence on improving the quality of TVET programs. According to Zald and McCarthy (1977), the success of an organization is not solely dependent on the availability of resources but also on how well these resources are strategically managed and utilized.

IMPLICATION AND RECOMMENDATIONS OF THE STUDY

The study highlights gaps in the use of resources for hands-on learning and specialized training. NYS should invest in better resource planning for practical skills development, ensuring that adequate materials and facilities are available to foster competency-based training by improving resource utilization for practical skills development. While technology integration scored positively, there is room for improvement in utilizing digital tools for resource mobilization and instructional delivery. NYS should invest in technologies that enhance both administrative efficiency and teaching methodologies, such as online learning platforms and virtual workshops. Resource mobilization through partnerships was identified as an area with lower satisfaction. NYS should actively seek new partnerships with private sector companies, NGOs, and international organizations to mobilize additional resources and expand opportunities for students. This study has opened several avenues for future research. Future research could examine the role of human resources, including staff qualifications, training, and development, in enhancing TVET program quality. Similar research could be conducted in other TVET institutions in Kenya or across different sectors, allowing for comparisons and generalizations of resource management practices. Longitudinal studies could assess the impact of policy changes on TVET skills quality over time, helping policymakers understand the long-term effects of their decisions on program outcomes. Given the importance of partnerships in resource mobilization, further studies should investigate the effectiveness of government and private sector collaborations in improving TVET infrastructure and learning outcomes.

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IMPACT OF PRINCIPALS' LEADERSHIP APPROACHES ON PERFORMANCE OF PUBLIC SECONDARY SCHOOL STUDENTS IN EXTRA- CURRICULAR ACTIVITIES: A CASE STUDY OF MAKADARA SUB COUNTY, KENYA

PHOEBE WANJIKU KANG'ORO

Abstract

The importance of extracurricular activities in fostering the psychological and intellectual development of students has been recognized globally, particularly in countries such as the United States of America (U.S.A), Jamaica, Germany, England, and China. In Kenya, these activities play a crucial role in providing students with a holistic education, contributing significantly to their social development from preparatory to college levels. The aim of this study is to examine impact of principals' leadership approaches on performance of public secondary school students in extra-curricular activities in Makadara Sub County. The specific objective was to find out types of extracurricular activities that students participate in public secondary school; to identify the different leadership approaches; to assess the attitude of principals and application of leadership approaches used by principals in public secondary schools; and, to determine the relationship between principals' leadership styles and performance of students of public secondary schools in Makadara Sub County in extracurricular activities. The study was underpinned to relationship theory and contingency theory of leadership. Adopting a descriptive research design, the proposed study justifies its approach for examining leadership impacts on student performance. The target population were principals, teachers in charge of extracurricular activities, and students participating in these programs, totaling 266. The study adopted stratified sampling approach, where the Israel formula, was used to arrive at a sample of 160 participants. This study used questionnaires and in-depth interviews to gather information. Data analysis was conducted using SPSS Version 26. Qualitative data underwent content analysis to interpret respondents' information. Frequencies, percentages, means, and standard deviations were computed and presented in the form of tables and figures. The study revealed that democratic and transformational styles positively impact student involvement in extracurricular activities. Principals who foster supportive environments see higher student engagement and achievement. The study is significant for policymakers, school leaders, and future researchers. It recommends adopting inclusive leadership styles, engaging teachers in creating welcoming environments, and encouraging student participation. The Ministry of Education should develop policies emphasizing extracurricular activities as essential for students' personal growth, academic success, and skill development.

INVESTIGATING LEADERSHIP SKILLS UTILIZED BY PRINCIPALS IN MANAGEMENT OF STUDENTS EXPOSED TO DRUGS: A CASE STUDY OF PUBLIC SECONDARY SCHOOLS IN EMBAKASI SUBCOUNTY KENYA

SILAS NDWIGA NJIRU

Abstract

Principals managing students set clear boundaries to enforce consequences, and model positive behavior. Problem-solving skills are vital for intervention and support. Crisis management ensures swift action during incidents. The purpose of this study was to investigate leadership skills utilized by principals in management of students exposed to drugs in public secondary Schools in Embakasi Subcounty Kenya. The specific objectives were to examine collaborative community engagement strategies used by principals, to identify decision-making processes employed by principals, to examine conflict resolution skills used by Principals and to identify counselling skills used by principals when managing students exposed to drugs in Embakasi Subcounty. Transformational Leadership Theory and Situational Leadership Theory guide the study. The research design for this study is a descriptive survey. For this study, a descriptive survey was used as the research design. The target population for this study was 297 respondents. Simple random sampling was used to determine the sample size, the following formula by Yamane (1967) was used to calculate the sample size. Thus, the sample was 170 respondents. This study took place in Embakasi Subcounty. Data was collected using questionnaires and interviews. The questionnaire was used to collect primary data, which was entered into an MS Excel application and exported to SPSS version 26 for further analysis. Results from data analysis was both descriptive and inferential. Descriptive comprise of statistics averages, standard deviations, and percentages whereas inferential statistics comprised of Pearson correlation analysis. Permission was sought from the Graduate School and the National Commission for Science and Technology. The correlation coefficient (R) of 0.753 indicates a strong positive relationship between the community engagement strategies, decision-making processes, conflict resolution skills, counselling skills and the managing students exposed to drugs. The study concluded that principals effectively engaged the community in efforts to tackle drug-related issues by recognizing the diverse needs and perspectives of community members when implementing management strategies for students exposed to drugs. They made informed decisions regarding the management of these students, carefully considering the time required to reach those decisions. Furthermore, principals employed problem-solving techniques that emphasized collaboration and creativity when addressing drug-related issues among students. Students recounted specific instances of community involvement, such as organizing awareness campaigns and workshops aimed at educating both students and parents about the dangers of drug use. Students mentioned that principals tended to listen to both sides of a conflict before making any judgments or decisions. The study recommended that, to effectively address drug-related issues among students in Embakasi Sub County, policymakers should implement comprehensive policies that promote collaborative community engagement strategies. Additionally, principals are encouraged to adopt a more proactive approach in employing conflict resolution and counseling skills when managing students affected by drug-

related issues. Students should also be encouraged to take an active role in their own well-being by participating in peer-led initiatives aimed at drug prevention and awareness.

RELATIONSHIP BETWEEN COUNSELING AND MARITAL QUALITY AMONG YOUNG COUPLES IN RUIRU SUBCOUNTY, KENYA

FRACIER WANJIKU NGURU

Abstract

Marriage serves as a fundamental institution that unites individuals in companionship, requiring mutual commitment and emotional preparedness. Counselling plays a pivotal role in fostering marital stability by addressing potential challenges before and during marriage, including conflict resolution, financial management, intimacy issues, and communication barriers. This study examined the relationship between counselling and marital quality among young couples (married for 1–10 years) in Ruiru Sub-County, Kenya, focusing on three key dimensions: intimacy, anger management, and effective communication. The study was grounded in Bowen's Family Systems Theory, which emphasizes emotional differentiation and intergenerational transmission of relational patterns, and Carl Rogers' Person-Centered Theory, which highlights the importance of empathy and unconditional positive regard in therapeutic settings. Using an explanatory research design, the study collected data from 65 young couples through structured questionnaires, analysing responses via descriptive and inferential statistics, including correlation and regression analyses. Key findings reveal that intimacy is a critical predictor of marital quality, with couples reporting higher satisfaction when they foster emotional closeness and mutual understanding ($\beta = 2.224$, $p < 0.001$). Anger management also significantly influences marital stability, though its impact is mediated by constructive communication ($r = 0.934$, $p < 0.001$). Notably, professional counselling emerged as the most influential factor, explaining 97.1% of the variance in marital quality, compared to standalone training programs, which showed negligible effects. The study highlights socioeconomic and cultural moderators, such as income constraints (70.8% earn ≤ KShs 30,000/month) and religiosity (78.5% Christian), which shape counselling accessibility and effectiveness. Despite recognizing the benefits of counselling, many couples underutilize it due to stigma, financial barriers, or lack of awareness. The findings underscore the need for culturally adaptive, affordable, and accessible counselling interventions tailored to young couples in urbanizing African contexts. Recommendations include integrating counselling into community and faith-based programs, enhancing counsellor training, and developing tiered support systems to address varying marital needs. This study contributes to existing literature by providing empirical evidence on the role of counselling in marital quality and offers practical insights for policymakers, therapists, and religious institutions to strengthen marital relationships in Kenya and similar settings.

EVALUATING ACCESS AND EQUITY IN PUBLIC SPECIAL NEEDS SCHOOLS THROUGH THE DISTRIBUTED LEADERSHIP MODEL: A STUDY IN MURANG'A COUNTY, KENYA

Hannah Wanjiru Gichure
Susan Kimotho
Anne Munuku

Abstract

This study examines issues of equity and access to quality education for special needs students in Murang'a County, Kenya, within the broader national and global commitment to inclusive education as outlined in the Sustainable Development Goals. By 2030, Kenya aims to provide free, equitable, and quality education at both primary and secondary levels. The research specifically sought to assess the current state of special needs education in Murang'a County, identify barriers to accessing quality education, evaluate the impact of educational policies, and examine the application of the distributed leadership model in special needs schools.

Guided by social justice and distributed leadership theories, the study reviewed existing literature to contextualize the challenges faced by learners with special needs and the importance of fair treatment. A mixed-methods research design was employed, combining quantitative and qualitative approaches. Data were collected through questionnaires administered to teachers and interviews conducted with headteachers. The target population comprised teachers, headteachers, and heads of departments in special needs schools, with a total sample size of 54 participants selected using stratified, random, and purposive sampling techniques.

Quantitative data were analyzed using SPSS version 26, while qualitative insights helped deepen understanding of access and equity issues. The findings revealed significant barriers, particularly inadequate resources and uneven infrastructure across schools. Most respondents disagreed that public special needs schools were sufficiently resourced. The study also found a positive relationship between effective infrastructure and teacher training, as well as between government funding and infrastructure availability. Overall, the results highlight the critical role of adequate funding, infrastructure, and trained personnel in improving access to quality education for special needs students in Murang'a County.

Keywords: Accessibility, Distributed Leadership Model, Equity, Inclusive education, Inclusivity, Social Justice.

Introduction

Chapter One introduces the study by situating it within the global, regional, and local context of Special Needs Education (SNE) and inclusive education. It outlines the background of the study, the research problem, purpose, objectives, research questions, and the significance of the study.

The background highlights that Special Needs Education is grounded in the right of all children to access quality and equitable education regardless of physical, psychological, or mental disabilities.

Globally, inclusive education has evolved from segregated systems to more inclusive approaches, influenced by international frameworks such as the Salamanca Statement, UNESCO guidelines, and the UN Convention on the Rights of Persons with Disabilities. Regions such as Europe, Asia, Africa, and specifically Kenya have made varying degrees of progress, shaped by policy reforms, economic capacity, and availability of resources. While developed regions have advanced inclusive education policies, implementation gaps persist, especially in developing countries where limited resources, inadequate infrastructure, and insufficient teacher training remain major challenges.

In Africa, despite policy commitments and support from governments and NGOs, many children with disabilities still face barriers to accessing education. Kenya, in particular, has made notable strides through policy reforms, establishment of institutions like the Kenya Institute of Special Education, domestication of international laws, and expansion of Free Primary Education.

However, challenges such as inadequate specialized resources, negative teacher attitudes, insufficient training, and rural disparities continue to limit equitable access for learners with special needs.

The statement of the problem emphasizes that despite Kenya's policy efforts, a significant number of learners with disabilities still lack access to equitable and inclusive education. Research on Special Needs Education in Kenya, particularly at the county level, remains limited. Existing studies indicate high exclusion rates, inadequate facilities, and systemic barriers that perpetuate inequality, poverty, and illiteracy among persons with disabilities. In Murang'a County specifically, persistent barriers continue to hinder equity and access, creating a clear research gap.

The purpose of the study was to assess equity and access issues in education among special needs students in Murang'a County using the distributed leadership model. The study sought to examine the current state of Special Needs Education, identify barriers to access and equity, evaluate the impact of educational policies, and analyze how leadership styles influence the implementation of Special Needs Education.

The research was guided by four objectives and corresponding research questions focusing on the status of SNE in Murang'a County, barriers to equitable access, the influence of educational policies, and the role of leadership models in shaping Special Needs Education. Overall, the chapter establishes the significance of the study by addressing a critical gap in literature and practice, and by contributing evidence to inform policy, leadership, and educational reforms aimed at improving inclusive and equitable education for learners with special needs.

The study is significant to a wide range of educational stakeholders as it addresses existing disparities in access to equitable and quality education for special needs students. By examining the current state of Special Needs Education in Murang'a County and identifying key barriers, the study provides evidence-based insights to support improved educational practices and decision-making.

The findings are expected to inform and strengthen educational policies, frameworks, and school management practices, particularly by evaluating the effectiveness of the distributed leadership

model in special schools. This will support better resource allocation, staff training, and overall management of Special Needs Education institutions.

Policymakers, teachers, County Education Officers, and local education boards will benefit from a clearer understanding of challenges facing special needs learners and the actions required to enhance access, equity, and quality. Parents and caregivers will gain awareness of the role of leadership, reduced stigma, and supportive environments in improving learning outcomes for children with disabilities.

Additionally, the study will benefit teacher training institutions, NGOs, advocacy groups, donors, and scholars by providing guidance for program design, funding priorities, capacity building, and further research. Ultimately, the government will use the findings to assess the effectiveness of existing practices, guide policy formulation, and promote an equitable and inclusive education system for special needs students.

Literature Review

Chapter Two critically reviews relevant empirical and theoretical studies related to Special Needs Education (SNE), inclusive education, educational policies, barriers to access and equity, and leadership models. The chapter situates the study within existing scholarship, identifies methodological and contextual gaps, and justifies the need for the current research. It also outlines the theoretical foundations, conceptual framework, and operationalization of study variables in relation to the research objectives.

The empirical literature on the quality of Special Needs Education highlights the importance of effective teacher training, adequate resources, inclusive instructional strategies, and positive attitudes toward learners with disabilities. Studies conducted in Murang'a County and other regions in Kenya reveal that while teachers and school leaders generally support inclusive education, implementation is hindered by insufficient resources, limited training, and overreliance on traditional teaching methods. Existing studies are often geographically limited, rely on small samples, or use single research methods, creating a gap that this study addresses by focusing on Murang'a County as a whole and employing a mixed-methods approach.

Literature on educational policies in special schools emphasizes the role of curriculum design, teacher capacity building, assistive technology, and resource allocation in promoting inclusion.

Although Kenya has made progress in developing supportive policies, studies show that implementation remains inconsistent and many learners with disabilities remain excluded from schooling. Several studies rely on secondary data or narrow samples, limiting their applicability.

This study responds to these gaps by providing primary, localized evidence on policy effectiveness and equity in access.

Research on barriers to access and equity consistently identifies inadequate funding, insufficient teacher training, negative attitudes, weak institutional structures, and limited monitoring and evaluation as major obstacles to inclusive education. While global and regional studies provide valuable insights, many are either theoretical or focused on higher education or developed

contexts. The current study fills this gap by examining practical, school-level barriers affecting special needs learners in Murang'a County using both qualitative and quantitative data.

The reviewed literature on leadership models underscores the growing relevance of distributed leadership in education. Studies indicate that distributed leadership enhances collaboration, staff engagement, resource sharing, and overall school effectiveness. However, most research in this area relies on secondary data or is conducted outside the Kenyan context. There is limited empirical evidence on how distributed leadership influences Special Needs Education in Kenyan schools.

This study addresses this gap by empirically examining the role of leadership styles, particularly distributed leadership, in improving access, equity, and quality of education for learners with special needs.

Overall, the literature reveals progress in inclusive education policy and practice but also highlights persistent gaps in implementation, contextual evidence, and leadership-focused research. These gaps demonstrate the need for the current study, which contributes to existing scholarship by offering localized, empirical insights into equity, access, policy implementation, and leadership in Special Needs Education within Murang'a County.

Theoretical and Conceptual Framework

The study was guided by Social Justice Theory and Distributed Leadership Theory, which together explain the need for equity, fairness, and collaborative leadership in special needs education. These theories informed the study's research questions, objectives, and methodological choices by highlighting how justice and leadership practices influence access to quality education for learners with special needs.

Social Justice Theory, developed by John Rawls, emphasizes fairness, protection of human rights, and equitable distribution of resources. It underscores the importance of equal access to education regardless of learners' abilities or backgrounds. The theory is particularly relevant to special needs education, as students with disabilities often face stigmatization, discrimination, and unequal allocation of resources. By applying this theory, the study examined whether schools provide fair and inclusive learning environments and equitable access to resources for special needs students, especially within contexts where infrastructure and funding are limited.

Distributed Leadership Theory, advanced by scholars such as Peter Gronn and James Spillane, views leadership as a collective rather than individual responsibility. The theory promotes collaboration among formal and informal leaders in achieving organizational goals. In the context of special needs education, distributed leadership supports personalized learning and shared decision-making among stakeholders, ensuring that diverse learner needs are addressed. The theory informed the study by guiding the examination of how leadership styles influence policy implementation, resource allocation, and inclusive educational practices.

The Conceptual Framework linked these theories by identifying equity and access to special needs education as the dependent variable. Independent variables included barriers to access (such as inadequate resources, teacher shortages, insufficient training, and inaccessible facilities), government educational policies, and distributed leadership practices.

Educational policies acted as a mediating variable, influencing how barriers affect access and quality of education, while leadership played a critical role in implementing policies and addressing systemic challenges. Together, the framework illustrated how justice-oriented principles and collaborative leadership can enhance equitable access to special needs education.

Research Methodology

This chapter outlines the systematic procedures used to conduct the study, ensuring rigor, credibility, and reliability of the findings. It describes the research design, study location, target population, sampling procedures, data collection methods and tools, ethical considerations, validity and reliability measures, and data analysis techniques.

The study adopted a mixed methods research design, integrating both quantitative and qualitative approaches. This design was appropriate because issues of equity and access to special needs education are complex social phenomena that require both statistical analysis and in-depth understanding of participants' experiences. The mixed methods approach also enabled triangulation, enhancing the validity and reliability of findings by cross-verifying data from multiple sources.

The study was conducted in Murang'a County, a rural region in central Kenya characterized by diverse socio-economic conditions and several public special schools. The county was selected to capture challenges faced by special needs students in rural settings with limited resources. Six public special schools representing different categories of disabilities were included to provide a comprehensive picture of special needs education across the county.

The target population comprised headteachers, deputy headteachers, heads of departments, and teachers from the selected special schools. These participants were chosen because of their direct involvement in teaching, managing, and implementing policies in special needs education. A total of 54 participants (nine from each school) were selected using a combination of purposive and stratified random sampling techniques to ensure representation of different leadership and teaching roles.

Data collection employed a mixed-methods approach, using questionnaires for teachers togather quantitative data and semi-structured interviews for headteachers to collect qualitative insights. Questionnaires focused on resource availability, training, and barriers to access, while interviews explored leadership practices, policy implementation, and contextual challenges.

Ethical considerations were strictly observed. Necessary approvals were obtained from relevant authorities, including the Ministry of Education and the university ethics board. Participants provided informed consent, confidentiality was maintained through anonymization, and participation was voluntary.

To ensure validity and reliability, a pilot study was conducted in two special schools in Kiambu County. Research instruments were refined based on pilot findings. Validity was ensured by aligning instruments with research objectives, while reliability was tested using consistency checks and Cronbach's Alpha to confirm acceptable internal consistency.

Data analysis involved both descriptive and inferential statistics, using SPSS for quantitative data. Descriptive statistics included frequencies, means, and standard deviations, while inferential analysis employed correlation, ANOVA, and multiple linear regression. Qualitative data from interviews and open-ended questionnaire items were analyzed thematically to identify key patterns and insights.

Results / Findings

The study examined access and equity in public special needs schools in Murang'a County within the context of the distributed leadership model, focusing on whether leadership practices enhance inclusivity, equity, and access. Data were collected from teachers and school leaders with substantial experience in special needs education, most of whom had served for 6–10 years.

Descriptive findings revealed significant gaps in the provision of special needs education. A large proportion of respondents reported inadequate teacher training, with 40% disagreeing that teachers were sufficiently trained to handle learners with disabilities. Additionally, 24.44% strongly disagreed that schools had effective and accessible infrastructure, highlighting persistent resource and facility challenges.

Correlation analysis showed a strong positive relationship between government funding and the

availability of effective infrastructure ($r = 0.821$), indicating that increased funding leads to improved school facilities. Government funding also showed a positive relationship with the availability of educational resources. Conversely, inadequate resources were associated with reduced student participation in co-curricular activities, limiting inclusivity and equity.

Regarding the current state of special needs education, both survey and interview findings indicated widespread infrastructural inadequacies. Participants cited poor or poorly maintained facilities, such as lack of ramps and delayed repairs, as major barriers to accessibility and equity for learners with special needs.

Analysis of barriers to access and equity demonstrated that government funding is a significant predictor of equitable access ($\beta = 0.458$, $p = 0.002$). Increased funding was found to directly improve accessibility and equity in special needs education. Participation in co-curricular activities, however, did not significantly influence access and equity ($\beta = –0.06$), suggesting it is not a reliable indicator of inclusivity in this context.

The study also established that educational policies, particularly teacher training and workshops, significantly enhance equity and access in special needs education ($\beta = 0.432$, $p = 0.005$). Interview findings reinforced the need for continuous professional development to improve teachers' capacity to support learners with disabilities.

Finally, findings on the impact of leadership styles showed that a collaborative environment promoted by headteachers had a positive but statistically insignificant effect on equity and access ($\beta = 0.100$, $p = 0.256$). High variation across schools suggested inconsistent application of collaborative leadership practices, indicating the need for more structured implementation of distributed leadership to improve outcomes in special needs education.

Discussion

The findings of the study were interpreted in relation to the research objectives, theoretical framework, and existing literature. The results strongly support social justice theory, demonstrating that equitable access to special needs education depends largely on fair distribution of resources. Adequate government funding emerged as a key determinant of equity and access, confirming prior studies that emphasize the resource-intensive nature of special needs education.

The study also found that teacher training and professional development significantly improve inclusivity and equity, aligning with existing literature that highlights the role of skilled teachers in addressing diverse learner needs. These findings further reinforce social justice principles by emphasizing fairness and responsiveness in instructional practices.

Inadequate infrastructure and facilities, particularly in rural settings, were identified as major barriers to access, a finding consistent with earlier studies on special needs education in resource-constrained contexts. This highlights persistent systemic inequalities that limit learners' rights to equitable education.

While distributed and collaborative leadership showed a positive relationship with equity and access, the effect was not statistically significant. This partially supports distributed leadership theory, suggesting that collaborative leadership can contribute to inclusivity but is insufficient on its own without adequate funding and supportive policies.

Overall, the discussion underscores that achieving equity and access in special needs education requires a holistic approach that integrates sufficient funding, continuous teacher training, inclusive leadership practices, and strong policy support.

Conclusions

The study concluded that adequate and consistent government funding is a critical factor in promoting equity and access in special needs education, as sufficient resources are essential for providing specialized care and support to learners with disabilities. Sustained financial commitment by the government is therefore necessary to strengthen public special needs schools.

The findings further emphasized the importance of regular training and workshops for teachers, noting that continuous professional development enhances inclusivity and equity by improving teachers' capacity to effectively support students with special needs. Training initiatives were also seen as beneficial for parents, helping them understand and support equitable educational opportunities for their children.

Finally, the study highlighted the persistence of cultural stigma and negative perceptions of disability as barriers to equity and access. Addressing these social attitudes through community awareness and public education campaigns was identified as essential. Collaboration between the government and relevant ministries was recommended to promote acceptance of disability and foster inclusive attitudes, thereby supporting equitable access to special needs education.

Implications and Recommendations The study provides important practical, policy, and theoretical implications for improving equity and access in special needs education.

From a managerial perspective, the findings highlight the need for school leaders to actively advocate for adequate funding by presenting clear, evidence-based reports on resource gaps such as assistive devices and accessible infrastructure. School leadership should also prioritize continuous capacity building through regular internal training and engagement with external experts to support both teachers and parents. Additionally, fostering a collaborative leadership environment is essential to ensure inclusive decision-making and enhance staff engagement in addressing challenges faced by special needs learners.

In terms of policy implications, the study recommends the formulation and enforcement of policies that guarantee timely and sufficient funding for special needs education. Policy frameworks should be revised to explicitly promote inclusive and distributed leadership practices in special schools. Regular policy evaluation and monitoring are also necessary to assess effectiveness, ensure compliance, and guide improvements in promoting equity and access.

Regarding future research, the study suggests further investigation into the long-term effects of inclusive and distributed leadership on students' academic performance. Additional research is also recommended on the impact of teacher training on students' social outcomes. Finally, comparative studies between public and private special needs schools across rural and urban settings are encouraged to better understand disparities in infrastructure and their implications for learners with special needs.

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IMPACT OF LOW PARTICIPATION IN STUDENT ELECTIONS ON SELECTED LEADERSHIP ELEMENTS: A CASE STUDY OF KCA UNIVERSITY, KENYA

MUTUKU MWINZI

Abstract

This study investigated the impact of low voter participation in university elections on key leadership attributes, specifically accountability, integrity, and decisiveness. The research addressed the pressing concern of declining electoral engagement among students, which undermines the legitimacy and effectiveness of student governance. Guided by Social Capital Theory and Principal-Agent Theory, the study explored the relationship between electoral participation and leadership quality, emphasizing the critical role of voter engagement in ensuring leader accountability and transparency. The study aimed to achieve four primary objectives: to identify the factors contributing to low voter turnout in student elections, examine its impact on the accountability of student leaders, assess how it affects their integrity, and analyze its influence on decisiveness in governance. Employing a descriptive research design, the study targeted a population of 3,476 participants—comprising 3,462 students and 14 faculty members—at KCA University in Nairobi County. Stratified random sampling was utilized to select 359 respondents, including 354 students and 5 faculty members. Data were collected using structured questionnaires and semi-structured interview guides. Quantitative data were analyzed using SPSS, while qualitative data underwent thematic analysis. Findings revealed that low electoral participation significantly undermines student leadership. Approximately 65% of respondents indicated that leaders elected under low voter turnout were less transparent and less accountable, with 60% reporting a decline in trust towards such leaders. Furthermore, 55% agreed that low voter engagement weakened leaders' ethical decision-making, leading to perceived lapses in integrity. Reduced voter turnout also impacted leadership decisiveness, as 58% of participants noted that student leaders faced difficulties in making firm governance decisions due to diminished support and legitimacy. From the hypothesis, accountability emerged as the most significantly impacted leadership attribute ($p < 0.05$), confirming that low participation negatively affects student leaders' ability to remain transparent and answerable to their constituents. The study concludes that low electoral participation adversely affects the effectiveness of student leadership. It highlights the need for initiatives that promote voter engagement, including awareness campaigns, digital voting platforms, and leadership training programs. Strengthened accountability mechanisms and improved election management were also recommended to restore trust and enhance governance. By addressing these challenges, universities can foster a culture of vibrant electoral participation, ensuring that student leaders are equipped to uphold integrity, make decisive choices, and effectively represent their constituents. This research provides a foundation for policy formulation aimed at enhancing student governance in higher education institutions.

IMPACT OF PRINCIPALS' HUMAN RESOURCE MANAGEMENT CAPACITY ON STAFF PERFORMANCE IN PRIVATE SECONDARY SCHOOLS IN EMBAKASI SUB-COUNTY, KENYA

OUMA VICTOR ALLAN ONYANGO

Abstract

Head-teachers, often seen as leaders of learning or instructional leaders, are responsible for shaping the culture and vision of their schools, inspiring and managing teachers, and improving the curriculum to enhance student outcomes. The main aim of the study was to examine the influence of principals' human resource capacity on staff performance at private secondary schools in Embakasi Sub-County, Kenya. Specifically, the study sought to establish the influence of principals' recruitment capacity, staff performance management capacity, staff professional development capacity, and employee relations management capacity on staff performance at private secondary schools. The study was anchored on both Resource Dependence Theory and the Social Learning Theory. The study targeted all private secondary school teachers in Embakasi Sub-County, Nairobi, with a total population of 463 teachers as reported by the Ministry of Education (2024). The study employed simple random sampling to select 157 teachers and schools. Additionally, 20 Key In-depth Informants (KIIs), comprising education officials and head teachers, were purposively selected for qualitative interviews to provide expert insights and triangulate quantitative data. Primary data were collected using self-administered questionnaires and structured interview guides, employing a drop-and-pick method to maximize response rates. Quantitative data were coded and entered into the Statistical Package for the Social Sciences (SPSS Version 26) and analyzed using descriptive and inferential statistics. Descriptive statistics involved the use of absolute and relative (percentages) frequencies, as well as measures of central tendency and dispersion (mean and standard deviation respectively). The study also employed multiple regression and Pearson correlation analysis to establish the relationship between the independent and dependent variables. At the 95% significance level, principals' recruitment capacity, staff performance management capacity, and employee relations management capacity were significant factors influencing staff performance, with p-values of .000, .000, and .000 respectively. However, principals' staff professional development capacity was found to be an insignificant factor with a p-value of .349. Principals' recruitment capacity emerged as the most significant factor influencing staff performance, followed by staff performance management capacity, then employee relations management capacity, while staff professional development capacity had minimal influence. The study recommended that school principals prioritize enhancing their recruitment capacity, as it had the strongest influence on staff performance. Strengthening staff performance management and employee relations management capacities should also be emphasized, given their significant impact. Professional development initiatives, while important, may require reevaluation or redesign, as they showed minimal influence on staff performance. Overall, resource allocation and training efforts should focus on the most impactful areas to improve staff outcomes effectively.

RELATIONSHIP BETWEEN DOMESTIC ABUSE AND INTERGENERATIONAL TRAUMA IN FAMILIES: A CASE STUDY OF KIAMBU COUNTY, KENYA

NJOROGE RUTH WANGUI

Abstract

Awareness has increased among health professionals that trauma is significantly associated to experiences of abusive relationships that tend to be characterized by intimate partner violence (IPV) and/or domestic abuse. The purpose of the study is to assess the relationship between domestic abuse and intergeneration trauma in Githurai Sub-County of Kiambu County, Kenya. The study was directed by four objectives: to investigate the nature of domestic abuse; to assess the impact of domestic abuse on the psychological and emotional well-being of children, to assess the extent of intergenerational trauma in family members affected by domestic abuse and, to suggest suitable trauma interventions for victims in Githurai Sub-County of Kiambu County, Kenya. This study incorporated Social Learning Theory and Bowen Family Systems Theory. The study population was families living in Githurai Sub-County where at least one family member experienced domestic abuse in childhood and is experiencing domestic abuse in adulthood (either as a victim or perpetrator) and the impacts of trauma from domestic abuse have been passed down to subsequent generations. A sample size of approximately 15-20 families was used, selected through purposive and snowball sampling techniques. This number was appropriate given the sensitive nature of the topic and the focus on gathering in-depth, experience-based responses. The structured nature of the questionnaire allowed for both quantitative and qualitative analysis, supporting a comprehensive understanding of the relationship between domestic abuse and intergenerational trauma. The study employed descriptive statistics to summarize participants' demographic and background information, and inferential statistics to explore possible relationships between key variables related to domestic abuse and intergenerational trauma, while qualitative responses were examined using thematic analysis, ensuring a thorough and comprehensive evaluation. The analysis was done using the SPSS data analysis and a report generated after all empirical data had been collected and organized in a manner so as to make conclusive arguments on the relationship between domestic abuse and intergenerational trauma. The research finds that domestic abuse exists in four primary forms which include emotional abuse, physical abuse, financial abuse and sexual abuse. The findings demonstrate the psychological and emotional consequences that domestic abuse has on children. Findings suggest that the intergenerational transmission of violence, which occurs when victims have witnessed domestic abuse from their families and subsequently expose their own children to it, occurs through various mechanisms such as learned behaviors, normalized violence, disruption of attachment, and compromised parenting capacity due to trauma. The research indicates that children are not only experiencing immediate psychological symptoms of domestic abuse but also experience functional impairments that limit their ability to perform well in school and maintain healthy relationships. The study recommends that the government of Kenya should fund, promote and develop integrated responses to domestic violence, coordinating services nationwide to minimize the impact on victims and their families. Interventions for trauma victims should include

trauma-informed care implementation, family-based intervention programs, community-based support networks and school-based mental health services. The future research should involve longitudinal studies of children who experienced domestic violence throughout their adult years to gain a better understanding of long-term outcomes and factors that contribute to resilience. The research would be advantageous in identifying potential prevention and intervention measures.

IMPACT OF DRUG USE ON ACADEMIC PERFORMANCE OF STUDENTS: THE CASE OF NYS ENGINEERING INSTITUTE, NAIROBI CITY COUNTY, KENYA

TABITHA NYAMBURA GITHOGO

Abstract

This study investigated the impact of drug use on the academic performance of students at the NYS Engineering Institute, Mathare, Nairobi City County, Kenya. The research was guided by four specific objectives: to determine the prevalence of drug use, identify the main factors driving it, examine its impact on academic performance, and assess the interventions available to manage related challenges. A descriptive research design was employed, utilizing a stratified random sampling technique to select a sample of 400 students from a population of 1,000. Data was collected through structured questionnaires and focus group discussions, and analyzed using both descriptive and inferential statistics, including correlation analysis and independent samples t-tests. The findings revealed a high prevalence of drug use, with 56.8% of students identified as users of substances other than alcohol or tobacco. Miraa (Khat) was the most prevalent substance (44.2%), followed by alcohol (35.0%), cannabis, tobacco, and Kuber. Academic pressure was identified as the primary driver, with drug users significantly more likely to increase substance use during stressful periods. A statistically significant, moderate positive correlation was found between drug use frequency and negative academic impact ($r = .489$, $p < .001$). Drug users reported significantly higher levels of declining grades, exam cheating, low concentration, and truancy compared to non-users. The study also identified a significant gap in intervention services, with critical supports like counselling and stress management programs perceived as less available, particularly by drug users. The study concludes that drug use is a pervasive and significantly detrimental issue at the institute, directly impairing academic outcomes. It recommends the implementation of targeted stress management programs, enhanced counselling services, and structured peer support initiatives to mitigate the problem and improve student well-being and academic success.

IMPACT OF CHILDHOOD EXPOSURE TO DOMESTIC VIOLENCE ON PARENTING PRACTICES AMONG ADULTS IN MAKUENI COUNTY, KENYA

JEDIDAH WAYUA MUNYOKI
SUSAN KIMOTHO
PRISCILLA GACHIGI

Abstract

Childhood exposure to domestic violence is increasingly recognized as a critical factor influencing long-term psychosocial development and parenting practices in adulthood. Despite its profound implications, this area remains underexplored within rural Kenyan contexts, where cultural, social, and economic dynamics may perpetuate intergenerational cycles of violence. This study examined the types of domestic violence experienced during childhood and assessed their impact on adult parenting practices among residents of Makueni County, Kenya. A Correlational research design was adopted, involving 218 adults aged 30–50 years who had been exposed to domestic violence during childhood and were currently parents. Data were collected using semi-structured questionnaires, focus group discussions, and key informant interviews. Quantitative data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis, while qualitative data were thematically analyzed to complement the quantitative findings. The findings revealed a high prevalence of childhood exposure to domestic violence, with respondents reporting experiences of physical, emotional, and psychological abuse. Statistical analysis demonstrated a significant positive relationship between childhood exposure to domestic violence and maladaptive parenting practices in adulthood ($r = 0.412$, $p < 0.001$). This indicates that higher levels of childhood exposure to violence were associated with increased likelihood of harsh, inconsistent, or emotionally unresponsive parenting behaviors. Multiple regression analysis further showed that childhood exposure to domestic violence significantly predicted parenting practices even after controlling for selected socio-demographic factors. The study concludes that childhood exposure to domestic violence has enduring negative effects on parenting behaviors, reinforcing the intergenerational transmission of violence. It underscores the need for trauma-informed parenting interventions, community-based psychosocial support, and early prevention programs to mitigate the long-term effects of childhood violence and promote positive parenting practices in rural Kenyan settings.

Keywords: Childhood exposure to domestic violence; Parenting practices; Intergenerational.transmission of violence; Maladaptive parenting; Trauma-informed interventions; Rural Kenya.

Introduction

Childhood exposure to domestic violence is increasingly recognized as a critical determinant of long-term psychosocial outcomes, including adult parenting practices. Exposure to violence within

the family during formative years disrupts emotional development, attachment formation, and coping mechanisms, which may later influence how individuals relate to and care for their own children. Beyond immediate physical and emotional harm, domestic violence leaves enduring psychological scars on children who grow up in violent households, often shaping their interpersonal relationships and caregiving behaviors in adulthood.

While global and regional studies have documented the intergenerational effects of domestic violence, limited empirical evidence exists within rural Kenyan contexts. In such settings, poverty, entrenched cultural norms, gender inequalities, and limited access to psychosocial services may exacerbate vulnerability and normalize violence within families. National surveys in Kenya continue to report high prevalence of domestic and gender-based violence, particularly in rural and marginalized communities.

Makueni County is characterized by high poverty levels and persistent cases of domestic violence, making it a critical setting for examining the long-term effects of childhood exposure to domestic violence. Understanding how such exposure shapes adult parenting practices is essential for informing targeted, trauma-informed interventions aimed at breaking intergenerational cycles of violence. This study therefore examined the types of domestic violence experienced during childhood and their influence on adult parenting practices in Kibwezi west Makueni County, Kenya.

Statement of the Problem

Despite ongoing efforts to address domestic violence in Kenya, interventions have largely focused on immediate victims, with limited attention to adults who were exposed to violence during childhood and are now parents. In rural areas such as Kibwezi West, Makueni County, domestic violence remains prevalent and is often normalized, yet its long-term effects on parenting practices remain under-researched.

Existing policies and interventions primarily emphasize prevention, protection, and short-term recovery, with minimal focus on adult survivors of childhood domestic violence. Consequently, many parents continue to struggle with emotional regulation, discipline practices, and parent–child relationships, potentially perpetuating intergenerational cycles of violence. The lack of localized empirical evidence limits the development of targeted, trauma-informed parenting interventions and policies.

This study addressed this gap by examining the relationship between childhood exposure to domestic violence and adult parenting practices within a rural Kenyan context, providing empirical evidence to inform practice and policy.

Theoretical Review

Attachment Theory

Attachment theory posits that early interactions with caregivers shape emotional regulation, interpersonal relationships, and caregiving behaviors across the lifespan (Bowlby, 1969). In violent households, disrupted caregiver responsiveness often results in insecure attachment styles, which persist into adulthood and affect parenting sensitivity, consistency, and emotional

availability.

Trauma Theory

Trauma theory explains how exposure to chronic violence during childhood leads to long-term emotional dysregulation, hypervigilance, and maladaptive coping mechanisms (Herman, 1992). Adults with unresolved childhood trauma may struggle to provide emotional warmth, consistency, and safe environments for their children, increasing the risk of maladaptive parenting behaviors.
Together, these theories provide a framework for understanding how childhood exposure to domestic violence shapes adult parenting practices and contributes to the intergenerational transmission of violence.

Literature Review

Empirical studies consistently demonstrate that childhood exposure to domestic violence is a significant risk factor for adverse psychosocial outcomes across the life course, particularly in relation to adult parenting practices. Children who witness or directly experience domestic violence are more likely to develop emotional dysregulation, insecure attachment styles, and maladaptive coping mechanisms, which may later influence their parenting behaviors in adulthood.
Domestic violence manifests in multiple forms, including physical, emotional, psychological, and verbal abuse. Evidence from global and African contexts indicates that emotional and psychological violence, though less visible, has profound and lasting effects on self-esteem, emotional functioning, and interpersonal relationships.
Existing literature further supports the concept of intergenerational transmission of violence, whereby individuals exposed to domestic violence during childhood are at increased risk of adopting harsh, authoritarian, or inconsistent parenting styles (Jouriles et al., 2001; Ngugi et al., 2020). However, studies also highlight the presence of resilience and protective factors, such as access to counseling, social support, education, and positive role models, which can interrupt this cycle and promote healthy parenting practices.
Despite extensive international research, limited context-specific evidence exists within rural Kenyan settings. This study contributes to the literature by providing empirical data from Makueni County, addressing this critical gap.

Methodology

The study adopted a correlational research design to examine the relationship between childhood exposure to domestic violence and adult parenting practices. The target population comprised adults aged 30–50 years residing in Kibwezi West, Makueni County, who had experienced domestic violence during childhood and were currently parents. A sample of 218 respondents was selected using multistage stratified random sampling across six wards.
Data were collected using semi-structured questionnaires containing Likert-scale and open-ended items, complemented by focus group discussions and key informant interviews. Quantitative data were analyzed using SPSS to generate descriptive statistics, Pearson correlation coefficients, and

multiple regression models. Qualitative data were thematically analyzed to enrich interpretation of the quantitative findings.

Ethical approval was obtained from KCA University, and authorization to conduct the study was granted by the National Commission for Science, Technology and Innovation (NACOSTI), and local administrative offices. Ethical principles, including informed consent, confidentiality, anonymity, and voluntary participation, were strictly observed throughout the study.

Results by Study Objective

Response Rate and Socio-Demographic Characteristics of Respondents

The study achieved a strong response rate of 90.8%, with 198 out of 218 questionnaires successfully completed and analyzed. This high response rate enhanced the reliability and representativeness of the findings. Females constituted 56.1% of the respondents, while males accounted for 43.9%. The majority of participants were aged between 36–45 years (41.9%), reflecting a mature parenting population. Most respondents were married (74.7%), had one to two children (49.5%), and possessed tertiary-level education (87.9%), indicating a relatively educated and actively parenting cohort.

Types of Domestic Violence Experienced During Childhood

The first objective sought to identify the types of domestic violence experienced by respondents during childhood. Descriptive analysis revealed a high prevalence of exposure to multiple forms of domestic violence. Witnessing physical violence between caregivers recorded the highest mean score ($M = 3.60$, $SD = 1.31$), indicating that a substantial proportion of respondents frequently observed physical abuse within their households during childhood. Emotional abuse by caregivers was also commonly reported ($M = 3.04$, $SD = 1.39$), alongside direct physical abuse directed at the respondents themselves ($M = 2.96$, $SD = 1.37$).

Additionally, many respondents reported witnessing the abuse of a parent or caregiver by an intimate partner ($M = 2.95$, $SD = 1.40$). Respondents also indicated moderate levels of perceived unsafety within the home environment during childhood due to family conflict ($M = 2.59$, $SD = 1.35$). Long-term emotional and psychological effects linked to childhood exposure to domestic violence were also reported ($M = 2.71$, $SD = 1.38$).

These findings demonstrate that childhood exposure to domestic violence in Makueni County was widespread and multifaceted, encompassing physical, emotional, and psychological forms of abuse.

Parenting Practices Among Adults Exposed to Domestic Violence in Childhood

The second objective examined the parenting practices of adults who had been exposed to domestic violence during childhood.

Descriptive findings indicated considerable variability in parenting behaviors among respondents. A notable proportion exhibited authoritarian, harsh, or emotionally inconsistent parenting practices, characterized by rigid discipline, difficulty regulating anger, and limited emotional

responsiveness toward their children.

However, qualitative findings from focus group discussions and key informant interviews revealed that some respondents consciously adopted non-violent, empathetic, and supportive parenting approaches. These respondents often reported participation in counseling services, parenting skills workshops, faith-based support groups, or community psychosocial programs. Such support appeared to enhance emotional awareness, patience, and intentional efforts to avoid repeating violent patterns experienced during childhood.

These findings suggest that while childhood exposure to domestic violence increases vulnerability to maladaptive parenting practices, access to psychosocial support serves as an important protective factor in promoting positive parenting behaviors.

Relationship Between Childhood Exposure to Domestic Violence and Adult Parenting Practices

The third objective sought to determine the relationship between childhood exposure to domestic violence and adult parenting practices.

Pearson correlation analysis revealed a moderate, positive, and statistically significant relationship between childhood exposure to domestic violence and maladaptive parenting practices in adulthood ($r = 0.412$, $p < 0.001$). This indicates that higher levels of exposure to domestic violence during childhood were associated with an increased likelihood of harsh, inconsistent, or emotionally unresponsive parenting behaviors.

Multiple regression analysis further demonstrated that childhood exposure to domestic violence was a significant predictor of adult parenting practices even after controlling for selected socio-demographic variables, including age, gender, marital status, and education level. This finding confirms that childhood exposure to domestic violence independently contributes to parenting outcomes in adulthood.

Summary of Results

Overall, the results indicate that childhood exposure to domestic violence was highly prevalent among respondents in Kibwezi West, Makueni County and manifested in multiple forms. Such exposure was significantly associated with parenting practices in adulthood, increasing the risk of maladaptive behaviors. However, the presence of psychosocial support and trauma-informed interventions emerged as key protective factors capable of fostering healthier parenting practices and interrupting intergenerational cycles of violence.

Discussion

The study found a high prevalence of childhood exposure to domestic violence among adults in Kibwezi West Makueni County, with emotional, physical, and psychological abuse emerging as the most common forms. These findings suggest that domestic violence remains a pervasive experience within family settings in this rural context, with lasting implications beyond childhood. Consistent with Attachment Theory, repeated exposure to violence during formative years likely disrupts the development of secure attachment relationships, resulting in long-term challenges in

emotional regulation, trust, and caregiving sensitivity.

The significant association between childhood exposure to domestic violence and adult parenting practices supports Trauma Theory, which posits that unresolved childhood trauma can impair stress regulation and emotional responsiveness in adulthood. Parents who were exposed to violence in childhood may struggle with managing anger, providing consistent discipline, and responding empathetically to their children's emotional needs, thereby increasing the likelihood of authoritarian or emotionally inconsistent parenting behaviors.

These findings align with existing literature on the intergenerational transmission of violence, which demonstrates that individuals exposed to domestic violence during childhood are at increased risk of replicating maladaptive parenting patterns in adulthood. However, the study also identified evidence of resilience among respondents who had accessed counseling, parenting support programs, or other psychosocial interventions. Such support appeared to enhance emotional awareness and intentional efforts to adopt non-violent parenting practices, indicating that exposure to domestic violence does not inevitably result in negative parenting outcomes.

Overall, the findings underscore the importance of trauma-informed and community-based interventions in mitigating the long-term effects of childhood exposure to domestic violence. By addressing unresolved trauma and strengthening positive parenting skills, such interventions hold significant potential for disrupting intergenerational cycles of violence within rural Kenyan communities.

Conclusion

The study concludes that childhood exposure to domestic violence significantly influences parenting practices in adulthood. While early exposure increases the risk of maladaptive parenting behaviors, access to trauma-informed interventions plays a critical role in promoting positive parenting and breaking intergenerational cycles of violence.

These findings underscore the need for long-term psychosocial support for adult survivors of childhood domestic violence, particularly in rural communities. Integrating trauma-informed care into parenting, mental health, and child protection programs is essential for strengthening family functioning and safeguarding future generations.

Implications of the Study

Theoretically, the study strengthens the applicability of attachment and trauma theories within rural Kenyan contexts by providing empirical evidence on how childhood trauma shapes adult parenting behaviors. Practically, the results highlight the need for trauma-informed parenting programs targeting adult survivors of childhood domestic violence, particularly in high-risk rural settings such as Makueni County.

From a policy perspective, the study underscores the importance of integrating long-term psychosocial support for adult survivors into existing gender-based violence and child protection frameworks. Current interventions largely focus on immediate victims, overlooking adults who were exposed to violence in childhood and are now raising children. Addressing this gap is critical for breaking intergenerational cycles of violence.

Recommendations

8. **Strengthening Trauma-Informed Counseling Services:**
   Government and non-governmental organizations should expand access to trauma-informed counseling and mental health services for adult survivors of childhood domestic violence, particularly in rural and underserved areas.
9. **Implementation of Parenting Skills Programs:**
   Community-based parenting programs should be developed and scaled up to equip parents with positive parenting skills, emotional regulation strategies, and non-violent discipline methods.
10. **Integration into County and National Policies:**
    County governments and relevant ministries should incorporate the needs of adult survivors of childhood domestic violence into existing GBV, child protection, and mental health policies.
11. **Capacity Building for Practitioners:**
    Social workers, counselors, teachers, and healthcare providers should be trained in trauma-informed care to enable early identification and appropriate support for parents affected by childhood trauma.
12. Community Awareness and Prevention Initiatives:
    Community sensitization programs should be strengthened to challenge the normalization of domestic violence, promote healthy family relationships, and encourage help-seeking behaviors.
13. **Further Research:**
    Future studies should adopt longitudinal and qualitative designs to explore resilience factors, gender differences, and the long-term effectiveness of intervention programs in disrupting intergenerational violence.

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PRAGMATIC REANALYSIS AND ADAPTIVE COGNITION IN GENERATIONAL PROVERB USE: EVIDENCE FROM CHAMILECHO WAHENGA

Robert Joseph Ochieng

Abstract

This paper examines how Generation Z speakers in social media such as Tik Tok and X in Kenya reinterpret chamilecho wahenga (ancestral proverbs) within contemporary sociocultural and digital environments. Moving beyond deficit narratives that frame such reinterpretations as cultural erosion, the study argues that Gen Z engagements with proverbial discourse constitute a process of pragmatic reanalysis driven by shifting economic realities, digital mediation, and evolving ideologies of success and agency. Focusing on recurrent cases such as mtaka yote hukosa yote "He who wants all, loses all", the paper demonstrates how inherited moral logics of restraint and moderation are recontextualised to index ambition, strategic risk-taking, and visibility in late-modern contexts e.g., wahenga hawamini mtaka yote amepata yote "The ancestors can't believe that he who wanted all got all." This study adopts a descriptive usage-based pragmatic approach within a broader cultural-cognitive framework, drawing on insights from cultural linguistics and adaptive cognition implicit in the proverbial discourse collected from select social media users on Tik Tok and X to account for generational reinterpretation of proverbs. Guided by three objectives, the study seeks: (i) to analyse how Generation Z pragmatically reworks the meaning and communicative functions of ancestral proverbs in interactional and digital spaces; (ii) to examine how these reinterpretations reflect broader cultural and ideological shifts concerning risk, success, and moral authority; and (iii) to evaluate proverb reinterpretation as an instance of adaptive cognitive processing, whereby inherited linguistic heuristics are selectively updated rather than discarded. The paper reframes chamilecho wahenga as a dynamic semiotic resource and positions Gen Z speakers as active cultural agents negotiating continuity and change through social media discourse.

Key words: Gen Z, Kenya, discourse, proverbs, Tik Tok, X.

SOIL EROSION SUSCEPTIBILITY ANALYSIS IN THE ECOTONE REGION OF WANJOGA RIVER CATCHMENT OF EMBU COUNTY IN KENYA, UNDER CLIMATE CHANGE VARIABILITY

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Abstract

The ecotone region of Wanjoga river catchment depicts a transitional zone between humid upland and lowland semi-arid region and, of moderate to steep slopes. Contrasting ecological and anthropogenic factors has led to geomorphological fragility, weakening the land ability to revert to its original condition after degradation. The study examines geomorphological challenges facing ecotone region of Wanjoga catchment under contemporary climate change scenarios. To achieve this, integrated methodological approach was used that captures spatial variability, temporal dynamics interactions between physical processes and human activities under changing climatic conditions over time. A combination of remote sensed data and field surveys provided a consistent multi-temporal coverage over large area using 15m resolution imagery such as Landsat and sentinel to derive land cover/land use information over 20 years. Field surveys were conducted for ground-truth eroded and non-eroded region under specified land use/ land cover characteristics using GPS and surveying equipment. The study examined the relationship between ecological factors, human activities and rainfall variability over a period of 20 years (2000-2020). The study reveals that cultivated land and settlement area increased from 24.31% in 2000 to 44.3% in 2020, 82.2% and 7.2% to 12.1% respectively while forest cover and bushland decreased from 18.9% to 4.5% and 51.52% to 26.1% respectively. Kappa statistic was used to access the accuracy of imagery confirmed accuracy at approximately 0.42, representing a moderate level of agreement with a positive value of 4% and a false-negative value of 7%.

A Bivariate statistical analysis for soil erosion susceptibility factor based on land use land cover and rainfall variability revealed a significant positive relationship with a consistency value at CR =0.093which is is < 0.1, an indication that individual variables have a relative importance in influencing soil erosion susceptibility in the study area. Bare land most impacted soil erosion susceptibility with a weighted value, Wi = 1.7. Bareness due to increased settlement and inflastrure exposes soil to raindrop impact and a possibility of overland surface flow and flow concentrating and accelerating increasing soil erosion susceptibility. Bushland used as communal grazing land is highly susceptible to erosion (Wi = 0.7). Contrarily, forested and cultivated land are least susceptible to soil erosion; Wi = 0.1 and 0.15 respectively. Soil erosion susceptibility imagery reveals high susceptible at 13.83%, 56% is in moderate while low susceptibility account for 23.95%. The high susceptibility areas are regions under settlement and different kinds of infrastructure while 12.3% is in very low susceptibility. Of concern is region of moderate susceptibility used as community herding, with low individual conservation responsibility, thus can transform into high susceptibility.

Accurate prediction of soil erosion in ecotonal and highly erosion-prone landscapes using bivariate statistical approaches enables the identification of critical geomorphic thresholds for the initiation of surface material movement. These thresholds inform the frequency, design, and spatial placement of soil and water conservation structures, thereby enhancing the effectiveness of erosion control, land rehabilitation, and sustainable management of ecotone environments with high sensitivity to overland flow.

Key words: Ecotone, Geomorphic factors, soil erosion, susceptibility.

1. Introduction

Soil erosion in ecotone regions is controlled by a wide range of factors, climatic; (rainfall, winds, temperature) land use/land cover, soil factors (prior conditions of the soil, soil characteristics) and human activities (Bloom, 1978). Increased human activities in a catchment leads to depletion of vegetation cover (Valentin, 2004), in turn affects the intensity of overland flow and subsequently causes surface wash erosion. Vegetation cover protects the soil from erosion by intercepting rain drops which may have reached the highest value of kinetic energy (9.81m/s-^{1}) which causes the loosening of soil particles, soil compaction and reduced infiltration (Neris and Tenedor, 2010; Ritter, 1978; Mitchell, 1990), and increase run off incidences. Changes in land use and land cover are therefore some of the most influential factors that affect soil erosion (Goudie, 1997).

Worldwide, developing countries are the most venerable to impacts of land use change due rapid population growth, shifting agricultural practices in ecotone regions (Osuji, *et al*, 2010). These countries (Conoscenti *et al*., 2014), ecotones are most affected by surface striping and agriculture intensification, in these regions originally dominated by natural vegetation paving way to crop cultivation, settlement and animal husbandly (Middleton, 2008). The sharp increases in population density and a mismatch of farming systems, depletion of bioresources (Ngugi *et al*, 2011) has led to intensified degradation of vegetation cover as a consequence of overgrazing, intensification of agriculture and poor farming practices increasing susceptibility to soil erosion. This is exacerbated by climate change scenarios which increases rainfall seasonality and variability and temperature changes as well as steep physiological characteristics of the Wanjoga ecotone region (McArthur and Sanderson, 1999).

In order to mitigate against adverse effects of soil erosion due to poor land use, there is need to identify anthropogenic, geomorphological and climatic characteristics that make soil susceptible to erosion so as to adopt appropriate conservation methods capable to mitigate against different forms of soil erosion (Osuji, *et al*, 2010). While the government has undertaken policy initiatives towards the conservation of ecotone catchment areas (GOK, 2000), such regions have gaping region of gullies and rills resulting in losses of tones of top fertile soil over the years. To effectively mitigate against such phenomenon, appropriate zonation and determination of potential erosion hazard areas, and factors that increase soil susceptibility is inevitable. This requires use of effective and accurate models to determine areas of high risk to soil occurrence. Thus, accurate prediction of soil erosion in ecotonal and highly erosion-prone landscapes using GIS based machine learning and bivariate statistical approaches which enables identification of critical geomorphic thresholds for the initiation of surface material movement was used. The information is important in

designing, and spatial placement of soil and water conservation structures, thereby enhancing the effectiveness in erosion control, land rehabilitation, and sustainable management of ecotone environments with high sensitivity to overland flow.

2. Materials and Methods

2.1 Study area

Wanjoga River catchment located in the ecotone region of Embu County at latitude 0°, 30'0.33'' to 0°, 35' 0.48''South and longitude 37°, 40' 33.88'' to 37° 50' 35.55'' East. The catchment is situated to the south eastern side of Mt. Kenya, about 30 km east of Embu town (Figure 1).

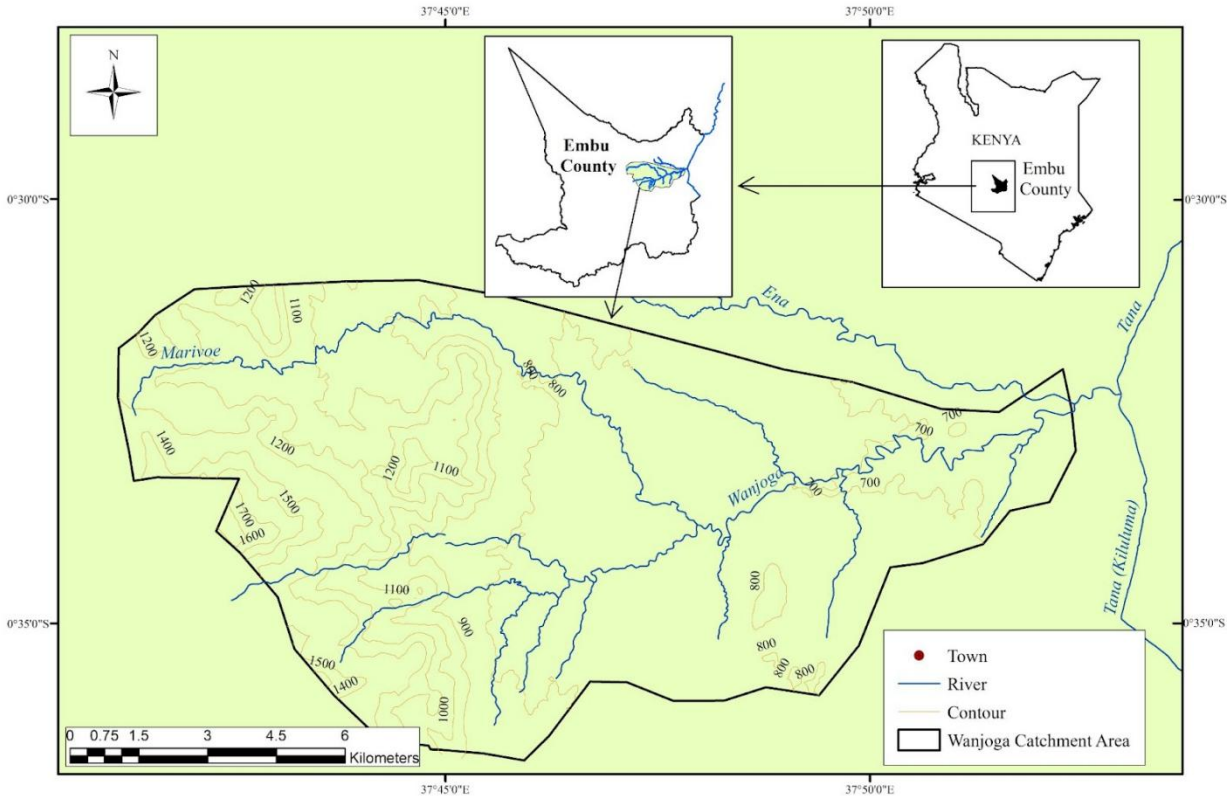


Figure 1: Location of Wanjoga river catchment (Source: Survey of Kenya.)

The catchment is located in Tana Basin, Embu County, Mbeere North Sub- County. The climate in ecotone region represents a transitional zone between humid upland and lowland semi-arid with an uneven rainfall regime distribution between days and months averaging at 650mm/per annum. Rainfall patterns are bimodal with 60% of the total rainfall received between March and May which is longer and more reliable season while 40% fall in the second rainy season between October and December which is shorter and less reliable season (Jaetzold and Schmidt, 1983). Rainfall episodes have become more seasonal, torrential and unreliable aggravated by climate

change. Population is ever increasing due to influx from high humid regions, seeking more land for settlement and agricultural space, bringing with them a more intensified and diverse agricultural practices, a shift from traditional indigenous practices (GOK, 2013).

2.2 Methodology

To determine soil erosion susceptibility in Wanjoga ecotone region, field surveyed data was collected using GPS tracking units to identify eroded and no eroded areas based on land use/land cover and human activities. This revealed 57 non-erosion areas and 77 eroded areas by different water erosion types including gullies, rills and sheet. Spatial rainfall data, obtained in (x, y) point format from the field was plotted in ArcGIS to come up with a raster format using ESRI ArcGIS software showing rainfall variability in the region. Land use/land cover changes over 20years; from 2000 to 2020 were mapped and analyzed using Normalized Difference Vegetation Index (NDVI). Digital Elevation Maps (DEM) were generated to show present land use/land cover, and changes over time.

To assess accuracy of land use/land cover maps, confusion matrix tables were generated with both user and producer accuracies. A Cohen's *kappa* statistics for the three period maps was calculated to measure inter-rater agreement using the GPS points acquired during the field study using the equation for κ (Smeeton, 1985):

$K = \frac{p_o - p_e}{1 - p_e}$ Where: p_o is the relative observed agreement among raters, p_e is the hypothetical probability of chance agreement, using the observed data to calculate the probabilities of each observer randomly in each category. If the raters are in complete agreement, then $\kappa = 1$. If there is no agreement among the raters other than what would be expected by chance (as given by p_e), $\kappa \leq 0$.

Weight of Evidence (WoE) applied simple geo spatial assessment tool was used to identify the weight of each influencing factor of land use/land cover on soil susceptibility (Bonham-Carter et al., 1988; Kakembo et al., 2009). The WoE model determines weight of soil erosion based total number of pixels for each conditioning factors where signs of soil erosion is identified, in relation to non-eroded pixel areas, in relation to the total number of pixels in the ecotone area (Yin and Yan, 1988)

$$Wi = \frac{NpixSi/NpixNi}{\sum NpixSi/\sum NpixNi}$$

Where;

Wi = is the weighting value of the class i;

NpixSi = is the number of pixels with eroded in the class i;

NpixNi = is the number of pixels in the class i;

PNpixSi = is the total number of pixels with eroded in the study area;

PNpixNi = is the total number of pixels in the whole study area.

Finally, the Weighted Overlay Tool in ArcGIS was used to combine the influence for each factor; each factor was assigned a weight depending on the level of influence used with identified eroded areas in the class by number of pixels in the class. After weighting of each conditioning factors is done, overlaying of all factors is carried out in ArcGIS to come up with final susceptibility map.

3. Results

3.1 Land use/land cover changes from 2000-2020

Within the framework of accelerated population growth driven by factors extending beyond natural increase, soil erosion represents a multifaceted geomorphological process governed by the dynamic interplay between vegetation cover and land-use systems and climatic factors; rainfall intensity, variability and seasonality and anthropogenic land management practices (Morgan, 2005; Montgomery, 2007; Pimentel et al., 1995). Understanding gully erosion dynamics under changing land cover conditions is essential for soil conservation and sustainable development in a river catchment. Land cover changes analyzed using supervised classification for the years 2000 and 2020, revealed four major land cover types; Forestland (wooded vegetation with little undergrowth, mainly predominantly evergreen at Kiang'ombe hills), bushland (open grasslands with scattered shrubs, uncultivated bushes and thickets), cultivated land (farmlands, abandoned lands), settlements (urban centers and homes).

The study revealed that the year 2000, wooded grasslands covered a total area 103.3km^2 (51.52%), forest cover 37.9km^2 (18.9%), cultivated land 48.74km^2 and 4.87km^2 of settlements land

(Figure 2).

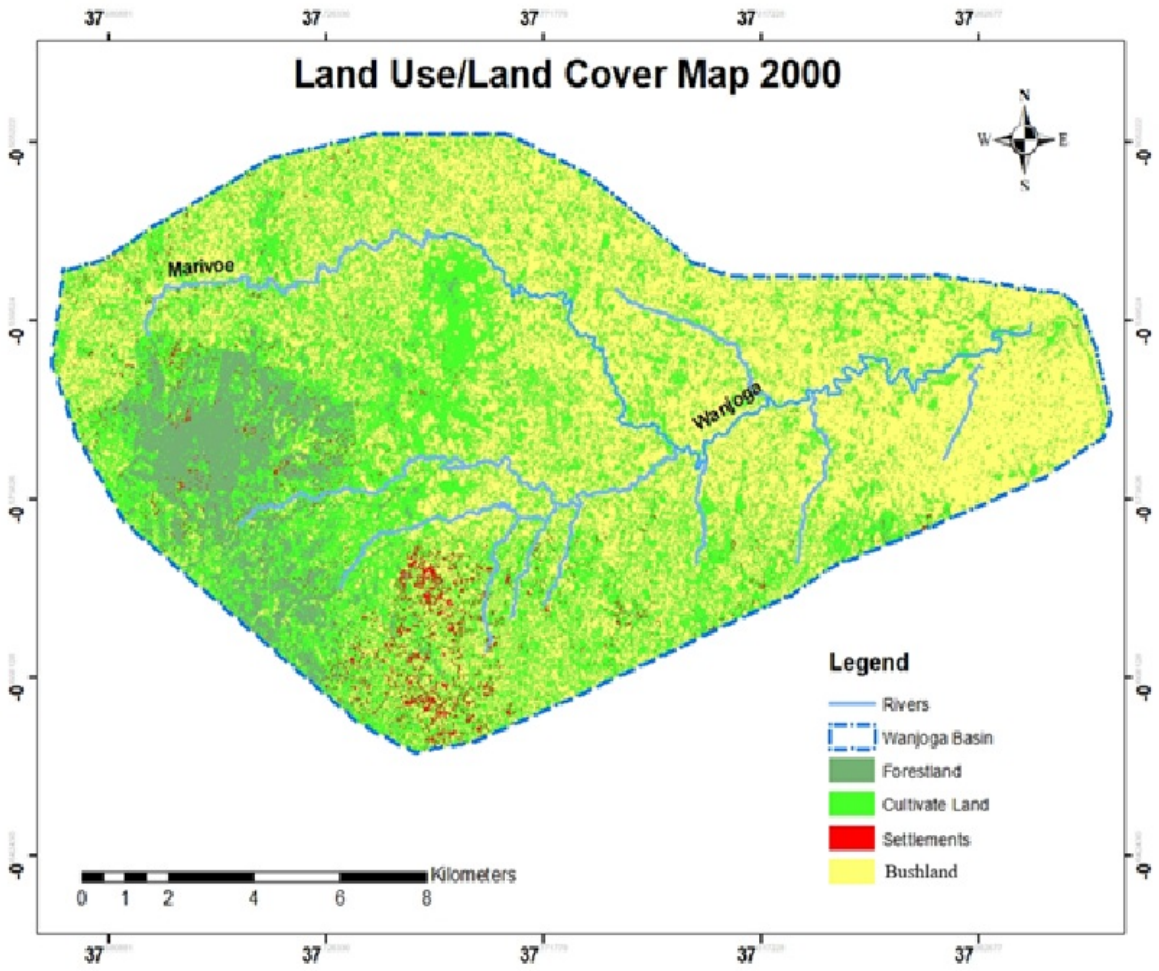


Figure 2: land use/land cover in Wanjoga river catchment 2000

A shift in land cover/land use from 2000 to 2020 saw bushlands and forest cover decreasing to 52.3Km^2 representing (26.1%) and 9.02km^2 representing (4.5%) respectively.

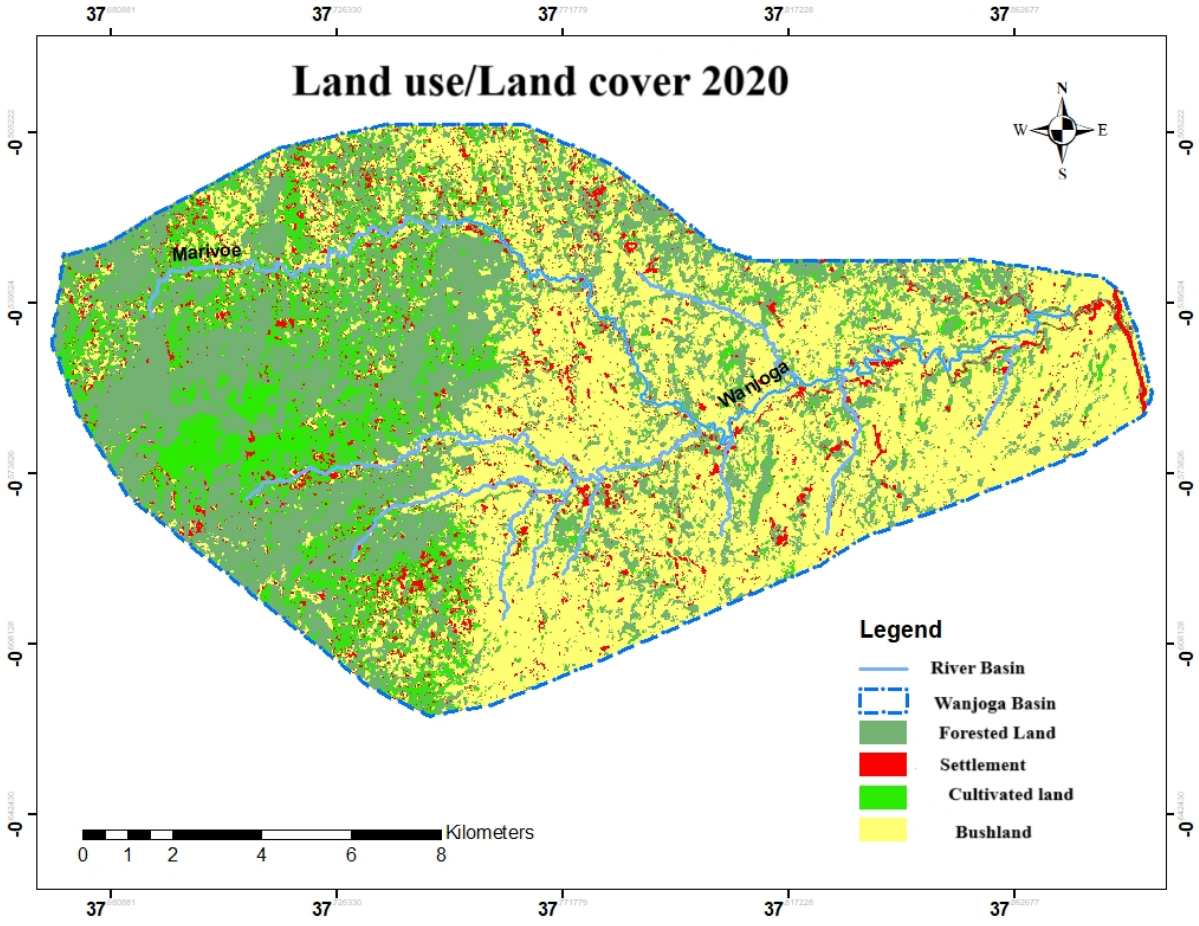


Figure 3: land use/land cover in Wanjoga river catchment 2020

Contrary, the same period saw an increase in cultivated land to 88.8km^2 (44.3%) and settlements to 24.3km^2 a 12.1% increase (Table 5.8)

TABLE 1: LAND USE/ LAND COVER İN WANJOGA RİVER CATCHMENT 2000-2018

Land use/Land cover	Area in km^2		% Relative change in land use		
	2000	2020	2000	2020	2000-2020
Bushland	103.3	52.3	51.52	26.1	–49.4

Forest Cover	37.9	9.02	18.9	4.5	–76.2
Cultivated land	48.74	88.8	24.31	44.3	82.2
Settlements	4.87	24.3	2.43	12.1	39

Spatial changes of land cover over time for the period 2000 to 2020 revealed negative relative change for forest cover and bushland by –49.4% and –50%, respectively. Contrary, cultivated land increased by 82.2% and settlement areas by 39%. Regions originally under forest cover and bushland were converted to cultivated and settlement lands by 2020. Conversion of vegetated land to cultivated and settlement land could be attributed to the influx of population in the Wanjoga catchment occasioned by overpopulation in high potential surrounding regions (Kisaka *et al.,* 2014). According to KNBS, (2019), Mbeere North Sub- County, saw a population increase from 89,035 in 1979 to a total population of 105,587 by 2019 (KNBS, 2019), an increase of 175 persons per square kilometer from 121 persons in 1979. An influx in population in the river catchment means increased demand for food, water, forage and site selection for constructing roads and other anthropogenic structures, increasing bareness that increases surface flow water and flow concentration. An increase in these unsustainable human practices, incompatible with an unstable and fragile ecotone environment, acts as a causative factor in environmental hazards for soil erosion (Southgate and Hulme, 1996).

3.2 Conditions factor weightiness and soil erosion susceptibility

Land cover and land use changes plays a significant role in in increasing surface overflow and water concentration increasing soil erosion hazard in a river basin. Removal of vegetation, settlement, creation of infrastructure creates bareness and crop cultivation exposed the ground to raindrop impact and a possibility of flow concentrating and accelerating. Bushland used as grazing land is highly impacted by soil erosion (Wi = 0.7), which creates bareness (Wi=1.7). Contrarily, forested and cultivated land are least impacted by gully density weighted Wi = 0.1 and 0.15 respectively. Presence of thick forest reduces possibility of gully erosion, since plant roots and leaves decrease the erosive action of surface runoff by protecting the soil from overland flow and rain drop impact. Kiang'ombe forested hills have a lower impact to gully occurrence (Wi=0.1) compared to lower areas under bushland and settlement areas, thus, weighted values decreased with increasing vegetation cover. A contrast positive value of Wi = 1.7 on settlement regions (bareness) and a low positive value in area covered by thick forest (WI=0.1) reveals, vegetation plays a significant role in prohibiting gully occurrence. The results match those of Valentin *et al., (*2005) which concludes, gully erosion is accelerated by land cover changes.

Table 2: Spatial relations on soil erosion and conditioning factors

Factor	Class	Number of gullies	Gullies %	NpixNi	NpixSi	Wi
Rainfall	653- 900	55	83.3	681,681	22,449	0.83

	90 1-1,200	11	16.7	209,590	13,201	1.57
LC	Cultivated	3	4.5	312,836	25	0.1
	bushland	34	51.5	359,182	23,170	0.7
	Forest cover	8	12.1	40,731	325	0.1
	Settlement land/ bareness	21	31.8	174,066	12,130	1.7

Lastly, an overlay analysis was carried out to determine the overall summation of the weight of each contributing fact. The bivariate statistical (Figure 3), shows 13.83% of the area has high susceptibility to soil erosion an indication that soils are under serious danger of soil erosion requiring immediate conservation strategies, 56% is in moderate/bush land susceptible; soil erosion is noticeable and could be of concern if not managed while low/cultivated land susceptibility; most areas have account for 23.95%. The high susceptibility areas are located regions mainly under settlement and different kinds of influstructure. 12.3% is in very low susceptible mainly in forested areas in regions where tree canopy protect the ground from rain drop accerelation (Figure 4)

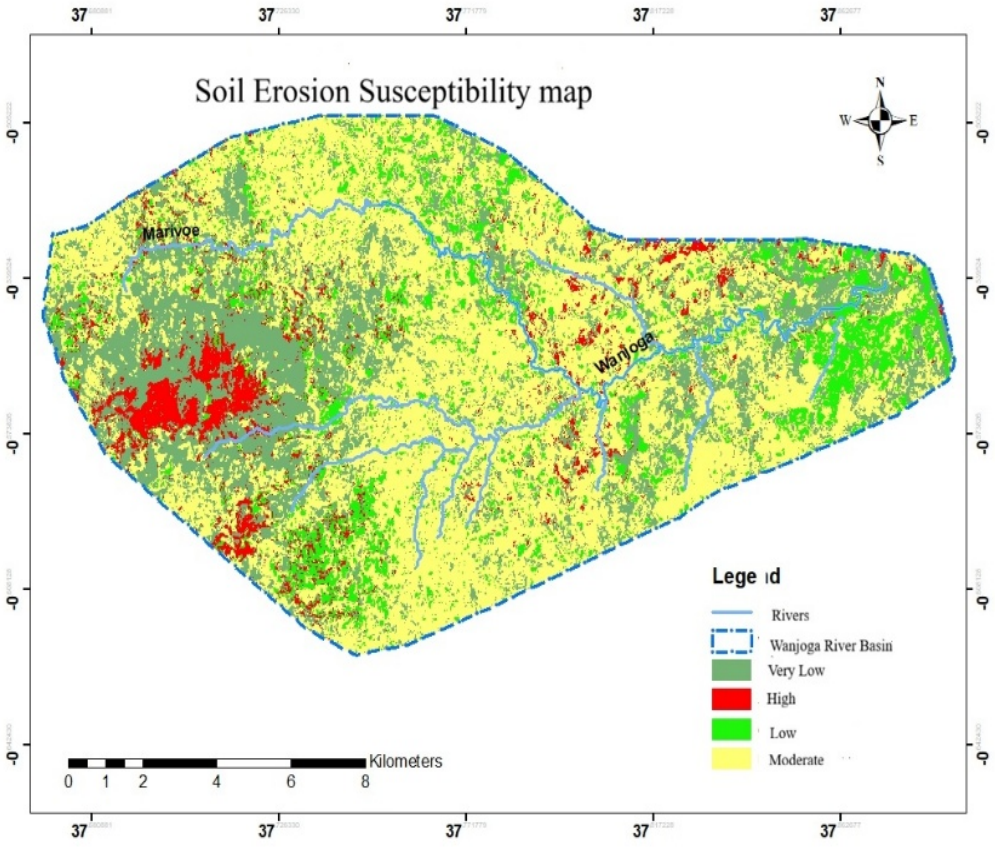


Figure 4: soil erosion susceptibility in Wanjoga River catchment 2020

3.3 Conclusions

Once such areas of soil erosion susceptibility are identified in ecotone landscapes using bivariate statistical approaches and identification of critical geomorphic thresholds for surface overland flow are identified, it forms the basis for informed designing, and spatial placement of soil and water conservation structures, by the local communities assisted by national and local government, thereby enhancing the effectiveness of erosion control, land rehabilitation, and sustainable management of ecotone environments with high sensitivity to overland flow.



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AN EXPLORATION OF ENGAGEMENT OF FEMALE STUDENTS IN UNIVERSITY STUDENT LEADERSHIP IN SELECTED PRIVATE UNIVERSITIES IN NAIROBI CITY COUNTY, KENYA

EMILLY ADHIAMBO OLOGI

Abstract

This study explored the involvement of female student leaders in university leadership in three private universities in Nairobi City County, Kenya. Concentrating on four themes; Mid-Level Role Dominance, Ineffective use of Gender Equity Policies, Structural and Electoral Biases as well as Structural and Electoral Biases and Symbolic Representation with Limited Influence the research was designed to bring a holistic idea of the issues and opportunities of female students as leaders. The main goals were to determine the level and nature of the participation of the female students in university leadership and to analyze the impact of the university management model on their participation and representation and to know the impact that the female student leaders have in making decisions on the student leadership bodies. The study based on the Feminist Theory and Social Role Theory adopted a descriptive research design with the population being 1,635 people who included deans of students, student council leaders, and representatives of student leaders. Purposive and random sampling were used to select 361 respondents. There were structured questionnaires and interviews based on collection of data. The results obtained indicated that although female students played an active role in leadership positions, they played them mostly in mid-level or lower levels, including class representatives and event coordinators, which failed to provide power to make decisions. Some of the barriers identified in the study were the social norms and gender bias that hindered women students to ascend to high leadership positions such as president or chairperson of the student council. Their failure to advance was further influenced by the fact that there are no formal mentorship programs, the policies governing gender equity were not well implemented, and a support system was poor. In addition, even where gender equity systems existed in certain institutions, the researchers concluded that such policies were in most cases not well implemented, which resulted in tokenism in representation as opposed to being taken seriously. Women leaders were frequently demoted to duties perceived more as female than non-female including welfare or cultural affairs, and were not offered a vital post like finance or even policy making in academia. It was found that the obstacles to the female leadership in universities are not only structural but also deep-rooted in the cultural and social norms. There were no strong mentorship programs, leadership training and a poor application of gender equity policies that worsened these problems. In order to enhance the female student leadership, the study suggests the institution of effective mentorship programs, strict implementation of gender equity policies and amendment of electoral system to give equal chances to the female students. When these systemic problems are reviewed, universities will be able to create more inclusive leadership atmosphere, and female students will be able to have a stronger impact on the decision-making process.

Key Words: Student Leadership, Female Engagement.

THE IMPACT OF HELICOPTER PARENTING ON SELF-HELP SKILLS AMONG YOUNG ADULTS: A CASE STUDY OF LANGATA SUB-COUNTY, KENYA

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Abstract

Helicopter parenting—characterized by overinvolvement, overprotection, and excessive parental control—has become increasingly evident in urban Kenyan families. This study examined its impact on self-help skills among young adults in Langata Sub-County, Nairobi, focusing on self-reliance, emotional regulation, and problem-solving. Using a descriptive mixed-methods design, data were collected from 100 purposively sampled young adults aged 18–30 from five churches. Quantitative data were analyzed using Pearson's correlation and regression, while qualitative data were thematically analyzed. Results indicated high prevalence of helicopter parenting (mean = 3.55/5.0), with 69.5% reporting parental interference in personal decisions and 63.1% experiencing constant monitoring. Significant negative correlations were found between helicopter parenting and self-reliance ($r = -0.687$, $p < 0.01$) and emotional regulation ($r = -0.621$, $p < 0.01$). Regression analysis showed helicopter parenting accounted for 55% of the variance in self-help skills ($R^2 = 0.550$, $p < 0.01$). Qualitative findings reinforced dependency tendencies, indecisiveness, and limited problem-solving initiative. The study concludes that helicopter parenting undermines young adults' independence and self-efficacy, recommending autonomy-supportive parenting programs, youth empowerment initiatives, and parent education interventions.

Keywords: helicopter parenting, self-help skills, self-reliance, emotional regulation, problem-solving, Kenya.

Introduction

Parenting significantly shapes children's emotional, social, and psychological development. Helicopter parenting, defined by excessive monitoring and control, can limit independence and emotional growth (Segrin et al., 2013). In urban Kenya, especially in middle-class areas such as Langata, globalization, academic competitiveness, and safety concerns have heightened parental involvement, potentially affecting the development of self-help skills critical for adulthood. This study aimed to investigate the impact of helicopter parenting on the development of self-help skills among young adults in Langata Sub-County, with emphasis on

four key objectives:
To determine the extent to which helicopter parenting impacts the self-reliance skills among young adults in Langata Subcounty.
To examine the relationship between helicopter parenting and emotional regulation skills among young adults in Langata Subcounty.

To explore how problem-solving skills are influenced by helicopter parenting among young adults in Langata Subcounty.
To identify the challenges to developing self-help skills among young adults in Langata Subcounty.

Background of the Study

Helicopter parenting has been linked globally to anxiety, reduced self-efficacy, and poor coping skills among young adults (LeMoyne & Buchanan, 2011; Segrin et al., 2015). In Kenya, urbanization and socio-economic changes have extended parental involvement into early adulthood (Githinji, 2012). While well-intentioned, overprotection often restricts the development of self-help skills such as decision-making, emotional regulation, and problem-solving (Odenweller et al., 2014; Padilla-Walker & Nelson, 2012).

Literature Review

Helicopter Parenting and Self-Reliance

Overparenting limits opportunities for autonomous decision-making, reducing young adults' confidence and independence (Padilla-Walker & Nelson, 2012). Erikson's psychosocial theory emphasizes autonomy development in late adolescence; overparenting interferes with this, fostering dependency (Erikson, 1968).

Emotional Regulation

Excessive parental control inhibits exposure to stress, impeding the development of adaptive coping strategies (Segrin et al., 2013). Young adults may rely excessively on parents for emotional decisions, increasing vulnerability to stress.

Problem-Solving Skills

Helicopter parenting restricts critical thinking and initiative, delaying problem-solving skills (LeMoyne & Buchanan, 2011). Self-Determination Theory (Deci & Ryan, 2000) posits that autonomy and competence are essential for psychological growth, which is constrained by parental over-involvement.

Challenges to Developing Self-Help Skills

Key challenges include fear of mistakes, restrictive cultural norms, parental discouragement, and limited independent experiences. In Kenya, gender norms and religious teachings on obedience further reinforce dependency, particularly in urban, middle-class contexts.

Theoretical Framework

Self-Determination Theory (SDT) (Deci & Ryan, 2000) emphasizes autonomy, competence, and relatedness as central to motivation and psychological growth. Helicopter parenting undermines autonomy and competence, reducing intrinsic motivation and adaptive functioning.

Family Systems Theory (FST) (Bowen, 1978) highlights family interdependence. Overprotective parenting fosters emotional enmeshment, hindering differentiation of self and independent problem-solving.

Conceptual Framework: Helicopter parenting (independent variable) influences self-reliance, emotional regulation, and problem-solving (dependent variables), moderated by socio-cultural norms, socioeconomic status, and peer influence.

Research Methodology

This study employed, a **descriptive cross-sectional research design** was employed to capture patterns, behaviours, and relationships between helicopter parenting and self-help skills, including self-reliance, emotional regulation, and problem-solving, without manipulating variables.

The study was conducted among young adults aged 18–30 years from various church congregations, targeting a population of 300 individuals. Using **purposive sampling**, a sample of 100 participants was selected to ensure representation across age groups, gender, and varying levels of exposure to helicopter parenting (low, moderate, high).

Data collection utilized structured questionnaires, focus group discussions (FGDs), and semi-structured interviews with youth leaders and counsellors. Questionnaires employed Likert-scale items alongside open-ended questions to capture both quantitative and qualitative insights. FGDs and interviews provided contextual depth and expert perspectives on the influence of parenting styles on young adults' independence and emotional development. Ethical procedures were rigorously observed, including informed consent, voluntary participation, confidentiality, and securing approvals from **KCA University, church authorities, and NACOSTI.**

To ensure **validity and reliability**, instruments were reviewed by experts, piloted, and refined. Cronbach's Alpha coefficients for helicopter parenting and self-help skill measures ranged from 0.76 to 0.81, indicating acceptable reliability.

Data analysis combined quantitative and qualitative methods. Quantitative data were analysed using SPSS, employing Pearson's correlation, t-tests, Chi-square tests, and multiple regression to examine relationships and predictive effects. Qualitative data from FGDs and interviews were thematically analysed to enrich understanding and provide context to statistical results. This mixed-method approach allowed triangulation, offering a comprehensive view of how helicopter parenting affects self-help skill development among young adults.

Results / Findings

Demographics: Majority were aged 23–26, balanced gender, high educational attainment, and 45.7% lived with parents.

Helicopter Parenting Prevalence:

Mean score = 3.55/5.0

69.5% reported parental intervention in personal decisions

63.1% experienced constant monitoring

57.6% reported parents solving problems for them

51.0% felt anxious making independent decisions

Correlation Analysis:

Variable	r	p
Helicopter Parenting & Self-Reliance	-0.687	<0.01
Helicopter Parenting & Emotional Regulation	-0.621	<0.01

Self-Reliance: Mean = 3.20 (SD = 1.06); 43.5% managed finances independently; 34.7% handled challenges confidently.

Emotional Regulation: Mean = 3.33 (SD = 1.09); 65.2% sought parental advice for emotional decisions.

Problem-Solving: High parental control delayed critical thinking and risk-taking. Mean problem-solving inhibition = 4.43 (SD = 0.79).

Challenges Identified: Fear of mistakes (65.2%), restrictive norms (62%), limited independence (62%), parental discouragement (56.5%), religious/community pressures (50%).

Regression Analysis:

$R = 0.742$, $R^2 = 0.550$, $p < 0.01$

Helicopter parenting significantly predicts lower self-help skills ($\beta = -0.742$, $t = -10.425$, $p < 0.01$).

Summary of the Key findings:

Self-Reliance Skills: Helicopter parenting negatively affected independence, decision-making, and financial management. Young adults under high parental control exhibited low self-confidence and reliance on parental guidance for everyday decisions.

Emotional Regulation: Participants raised under overprotective parenting displayed lower emotional resilience, dependence on parents for support, and difficulty coping with stress independently.

Problem-Solving Skills: Excessive parental monitoring diminished initiative, critical thinking, and risk-taking, limiting opportunities to develop adaptive problem-solving strategies.

Challenges to Self-Help Development: Cultural norms, fear of mistakes, restrictive parental practices, and limited independent experiences reinforced dependence and hindered the development of essential life skills.

The findings were consistent with Self-Determination Theory and Family Systems Theory, illustrating how autonomy suppression and enmeshed family dynamics impede young adults' personal growth. Regression analyses indicated that helicopter parenting explained 55% of the

variance in self-help skills ($R^2 = 0.550$), confirming it as a major predictor of delayed psychosocial development.

Discussion

Helicopter parenting negatively impacts young adults' self-reliance, emotional regulation, and problem-solving. SDT explains that parental over-involvement frustrates autonomy and competence, reducing intrinsic motivation and resilience (Deci & Ryan, 2000). FST emphasizes that enmeshed family systems impede differentiation and independent thinking (Bowen, 1978).

Cultural norms and religious teachings reinforce parental control, maintaining dependence. However, moderate parental involvement aligned with autonomy-supportive practices fosters adaptive outcomes, consistent with Baumrind's authoritative parenting framework (1991).

The findings underscore the importance of educating parents, youth, and community institutions on balanced parenting to promote independent decision-making and emotional competence.

Conclusion

Helicopter parenting in Langata Sub-County significantly undermines young adults' self-help skills, including independence, emotional regulation, and problem-solving. While intended to protect, overparenting fosters dependency, low confidence, and poor coping abilities. Culturally and religiously reinforced parental control exacerbates these outcomes. Promoting autonomy-supportive parenting and youth empowerment is essential for cultivating resilience, competence, and independence.

Recommendations

For Parents:

Gradually transfer decision-making autonomy

Adopt emotion-coaching approaches and encourage guided financial independence

Participate in parenting education programs

Support learning from mistakes and problem-solving

For Communities/Faith-Based Organizations:

Promote dialogue on independence vs. cultural respect

Implement gender-sensitive empowerment programs

For Policymakers/Educators:

Integrate parenting modules in youth programs

Support independent living and emotional resilience programs

Further Research:

Longitudinal studies tracking adolescence to adulthood

Comparative studies across Kenyan regions and socioeconomic classes

Evaluating parenting interventions and parent perspectives

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SOCIAL SUPPORT AND COMMUNITY ENGAGEMENT AS PREDICTORS OF EMOTIONAL RESILIENCE AFTER LOSS AMONG THE ELDERLY IN KABETE, KENYA

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Susan Kimotho

Abstract

Aging populations face growing challenges from urbanization, changing family structures, and weakened traditional support systems, with bereavement posing a major threat to emotional well-being. This study examined how social support and community engagement predicted emotional resilience among older adults (60+) in Kabete Constituency, Kiambu County, Kenya, following loss. Using a descriptive correlational design, data were collected from 98 bereaved elderly participants through structured questionnaires. Analysis involved descriptive statistics, Pearson's correlation, and multiple regression. Results showed a strong positive relationship between community engagement and emotional resilience ($r = 0.558$, $p < 0.01$), while social support had a weak, non-significant relationship ($r = 0.027$, $p = 0.803$). Regression analysis identified community engagement as the strongest predictor of resilience ($\beta = 0.514$). The study concludes that active participation in community and religious groups is a key protective factor for emotional resilience in older adults and recommends strengthening structured community programs, intergenerational initiatives, and psychosocial support services to support recovery after bereavement.

Keywords: Community Engagement, Emotional Resilience, Elderly, Loss, Social Support.

1.0 Introduction

Elderly loss is an inherent feature of aging, and older adults are highly susceptible to the psychological and emotional effects of major life changes such as the death of a spouse, close friends, or family members. If not well-managed, these incidents often result in emotional distress, social isolation, and reduced quality of life. Social support refers to the emotional, informational, instrumental, and companionship assistance that individuals receive from their social networks, such as family, friends, colleagues, and community members. It plays a crucial role in helping individuals cope with stress, improve mental health, and enhance overall well-being Cohen, S., & Wills, T. A. (1985). Social support and community engagement are key contributors that enable the elderly to recover and maintain well-being after bereavement (Luu et al., 2025).

Elderly residents here experience overlapping social, cultural, and economic pressures that affect their capacity to cope with loss. While community structures such as churches, self-help groups, and welfare associations exist, little empirical evidence is available on their effectiveness in enhancing resilience among older adults in Kabete (Bauer et al., 2021). This gap in knowledge makes the Sub-County an appropriate and timely case study.

1.1 Background of the Study

Loss is an inevitable aspect of ageing, encompassing bereavement, declining health, and reduced social roles, often leading to psychological and cognitive distress. Emotional resilience, the capacity to cope with stress and adversity is therefore essential in later life (Wiles et al., 2020). This resilience is shaped not only by personal factors but also by external influences such as social support and community engagement (Zhou et al., 2021).

Globally, increased longevity and shifting social structures have intensified bereavement-related challenges among older adults, with weak social networks linked to greater psychological distress. Evidence shows that community engagement enhances emotional resilience and reduces depressive symptoms (Kim et al., 2021), while emotional, informational, and instrumental support from social networks improves mental health outcomes (Fuller-Iglesias, 2020). Participation in religious, cultural, and civic activities further promotes well-being by strengthening social connection and purpose (Chen et al., 2022).

In Kiambu County's peri-urban Kabete Sub-County, rapid social change presents unique challenges for older adults coping with loss. Despite the presence of community institutions, empirical evidence on how social support and community engagement influence emotional resilience remains limited. This study addresses this gap by examining these factors among older adults in Kabete, offering context-specific insights into ageing and well-being.

1.2 Study Objectives

The study is based on the following objectives:

- To determine the influence of social support on emotional resilience after loss among the elderly in Kabete Sub-County, Kiambu County, Kenya.
- To examine the role of community engagement in predicting emotional resilience after loss among the elderly in Kabete Sub-County, Kiambu County, Kenya.

1.3 Significance of the study

Understanding how social support and community engagement predicts resilience can inform preventive and therapeutic mental health interventions for older adults. Evidence indicates that social support enhances emotional resilience and mental health, while community participation improves coping and reduces depressive symptoms (Lee et al., 2022; Smith et al., 2024; Zhang & Dong, 2023). As life expectancy rises and loss becomes more common in old age, emotional resilience is increasingly vital for quality of life and psychological well-being (BMC Geriatrics, 2023). Resilience enables older adults to adapt to adversity and maintain meaningful lives. Additionally, community development programs that promote social connectedness enhance well-being and adaptive capacity among older populations (Asante & Karikari, 2022). This study contributes context-specific evidence on the role of community-based initiatives in strengthening emotional resilience among the elderly in peri-urban settings.

2.0 Literature Review

2.1 Social Support as a Predictor of Emotional Resilience

Social support (emotional, instrumental, and informational) is crucial in fostering emotional resilience among older adults, particularly during bereavement. Emotional support offers empathy and reassurance, instrumental support provides tangible assistance, and informational support supplies guidance, collectively protecting against depression, loneliness, and poor psychological well-being after loss (Zhou et al., 2021).

Grounded in Social Support Theory, this study recognizes that older adults who perceive their social networks as reliable are better able to cope with stressful life events. Empirical evidence shows that perceived social support buffers grief-related distress and promotes adaptive coping in later life (Wu et al., 2022). As modernization weakens traditional family structures, external networks such as religious institutions, community groups, and neighborhood associations become increasingly important sources of emotional support.

Social support also facilitates Worden's Four Tasks of Mourning by providing spaces for emotional expression, shared meaning-making, and social reintegration, leading to improved adjustment after bereavement (Ward et al., 2012). However, most existing studies focus on Western or rural contexts, with limited attention to peri-urban settings and culturally diverse populations. This study addresses these gaps by examining how social support influences emotional resilience after loss among older adults in Kabete Sub-County, Kiambu County.

2.2 Role of Community Engagement in Enhancing Emotional Resilience

Community engagement through religious, social, volunteer, and civic activities strengthens emotional resilience among older adults by fostering social connection, belonging, and purpose after bereavement. Evidence shows that active participation reduces loneliness, enhances social ties, and improves coping capacity in later life (Chen et al., 2021; Smith & Johnson, 2022).

Guided by Social Support Theory and social capital perspectives, community and religious organizations provide essential emotional, informational, and instrumental support, particularly where family-based systems have weakened due to urbanization. Such engagement also supports Worden's Four Tasks of Mourning by facilitating emotional expression, social reintegration, and adjustment after loss (Ogundele & Akinwale, 2023).

In peri-urban Kenyan contexts like Kabete Sub-County, weakened traditional support systems heighten the risk of isolation among older adults (Mugambi et al., 2021). While emerging evidence highlights the benefits of peer-led and intergenerational programs (Ngugi et al., 2022; Wambua & Mwangi, 2023), limited research identifies which forms of engagement most effectively build resilience. This study addresses this gap by examining how community participation predicts emotional resilience among older adults in Kabete Sub-County, Kiambu County.

3.0 Theoretical and Conceptual Framework

3.1 Theoretical Framework

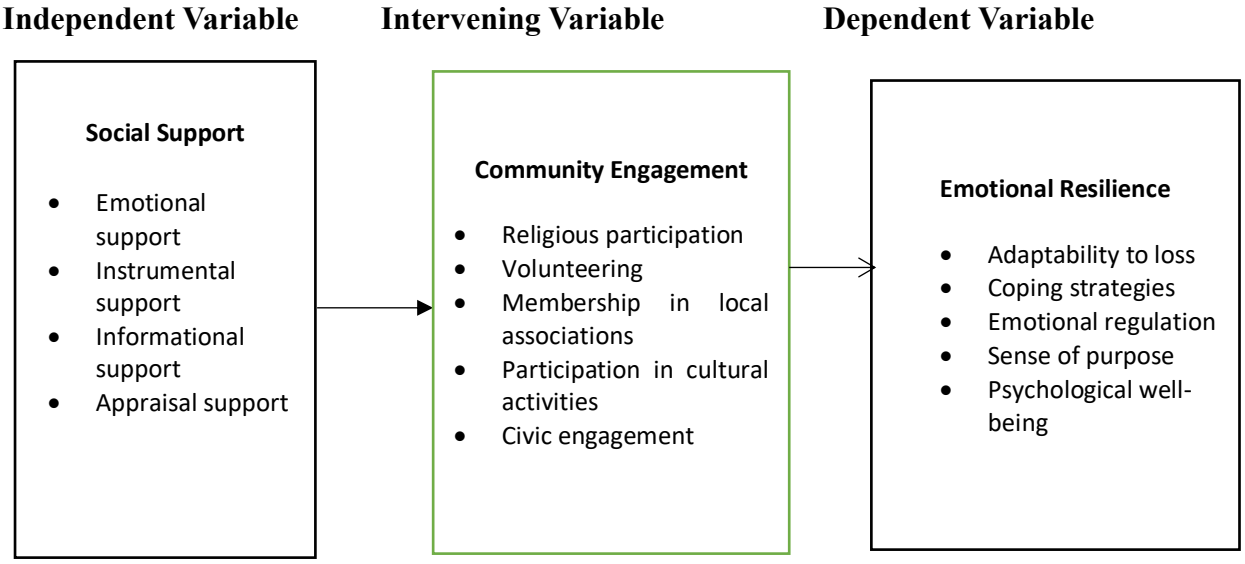
This study is guided by Social Support Theory and complemented by Worden's Four Tasks of Mourning, which together explain how social relationships enhance emotional resilience and support adaptive adjustment after loss.

Social Support Theory, advanced by Cohen and Wills (1985), posits that emotional, instrumental, informational, and appraisal support buffer the negative effects of stress and promote mental well-being. Individuals who perceive their social networks as reliable are better able to cope with stressors such as bereavement, illness, and other life challenges, as support from family, friends, and community groups cushions the impact of adversity.

Worden's Four Tasks of Mourning (2009) conceptualize grief as an active, flexible process involving acceptance of the loss, processing grief-related pain, adjustment to life without the deceased, and maintaining an enduring connection while moving forward. Yousuf-Abramson (2020) emphasizes a dynamic, client-centered application of this model, integrating approaches such as cognitive-behavioral, narrative, and systems therapies to support meaning-making, resilience, and adaptation after loss.

3.2 Conceptual Framework

This study is guided by a conceptual framework that links social support, and community engagement to emotional resilience among the elderly after loss.



4.0 Research Methodology

4.1 Research Design

The study adopted a descriptive correlational survey design to examine relationships among variables without manipulating the study environment. The descriptive component captured

elderly experiences after loss, while the correlational analysis assessed how social support and community engagement relate to emotional well-being.

4.2 Study Setting

The study was conducted in Kabete Constituency, western Kiambu County, Kenya, a peri-urban area bordering Nairobi with both urban and rural characteristics. It comprises wards such as Uthiru/Ruthimitu, Nyadhuna, Gitaru, and Kabete, which vary in infrastructure and social organization. Many older adults in the area live alone due to shrinking family structures, loss of informal support, and urban-related isolation, alongside the presence of active community organizations and religious groups that provide social support.

4.3 Population of the study

The study population comprised elderly residents of Kabete Constituency, Kiambu County, aged 60 years and above, who had experienced loss, poor health, or social isolation. Focusing on bereaved older adults aligned with the study's aim of examining emotional resilience after adversity. Participants were drawn from the constituency's administrative wards. According to the Kiambu County Health and Demographic Estimates Report (2023), the estimated elderly population (60+) in Kabete was 4,800.

4.4 Sample Size

The study used a multi-stage sampling approach to select elderly participants from Kabete Constituency, Kiambu County.The sample size was determined using Yamane's (1967) formula for finite populations: $n = \frac{N}{1+N(e^2)}$. With an estimated population of 4,800 older adults and a margin of error of 0.10, the calculated sample size was 98 participants.

4.5 Sampling Procedure

Participants were selected using a two-stage sampling approach combining stratified random and purposive methods to ensure representation across age and residence in Kabete Constituency. First, the constituency was stratified into four wards. Administrative officers, community health volunteers, and church welfare groups helped identify residents aged 60 and above who had experienced significant loss. Second, proportionate random sampling was applied within each ward by listing eligible individuals and selecting participants using a random number generator.

4.6 Data Collection Procedure

Data for this study were collected through a structured and ethically guided process designed to ensure accuracy, credibility, and participant dignity, official permission was obtained from Kabete Constituency authorities. The researcher collaborated with local leaders, religious organizations, and community members to identify eligible participants. Data were collected through researcher-administered structured interviews using a questionnaire that captured demographic information and assessed social support, community engagement, and emotional resilience following bereavement.

4.7 Ethical Considerations

The study adhered to established ethical standards for human research, with particular attention to the rights and well-being of older adults. Ethical approval was obtained from KCA University's Graduate School and the Scientific and Ethical Research Committee (SERC), followed by a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). Additional permissions were secured from local authorities, community leaders, and religious institutions in Kabete Constituency to facilitate access and ensure community cooperation.

5.0 Results / Findings

5.1 Demographics and Response Rate

5.1.1 Age of the Respondents

Most respondents (58.2%) were aged 60–69 years, while 41.8% were 70–79 years. This indicates that the sample largely comprised individuals in early old age, a stage often associated with greater community involvement and stronger social networks, which are important for emotional resilience.

5.1.2 Gender of the respondents

The results show that 60.4% of respondents were female and 39.6% male, reflecting women's higher life expectancy and possibly greater willingness to participate in community studies. Gender differences may influence findings, particularly where social roles and community involvement vary by gender.

5.1.3 Type of Loss Experienced

The findings show that 38.5% of the respondents had lost a spouse, 26.4% had lost a friend, 22.0% had lost a child, while 13.2% had lost a sibling. This implies that most respondents had experienced close personal losses, particularly of spouses and friends, which can significantly affect their emotional well-being. Such experiences highlight the importance of social and community support systems in helping the elderly cope with grief and rebuild emotional resilience.

5.1.4 Duration Since the Loss Occurred

The findings show that 36.3% of respondents experienced loss over two years prior, 24.2% within 6–12 months, 22.0% within six months, and 17.6% within 1–2 years. This variation indicates differing stages of grief, with some respondents still in early coping phases and others having had more time to adjust and develop coping mechanisms.

5.2 Relationship between Social Support and Emotional Resilience

This section presents the correlation results for the first objective, which examined the relationship between social support and emotional resilience among elderly residents of Kabete Sub-County.

Pearson's correlation analysis was conducted to assess how social support relates to emotional resilience in the context of coping with loss. Table 1 summarizes the correlation coefficients between the two variables, indicating whether social support contributes to emotional resilience among the elderly.

Table 1: Correlation between Social Support and Emotional Resilience

		Social Support	Emotional Resilience
Social Support	Pearson Correlation	1	.027
	Sig. (2-tailed)		.803
	N	91	91
Emotional Resilience	Pearson Correlation	.027	1
	Sig. (2-tailed)	.803	
	N	91	91

The results indicate a very weak, non-significant positive correlation between social support and emotional resilience ($r = 0.027$, $p = 0.803$), suggesting that available support does not strongly influence resilience after loss. Although social networks exist, they may lack the depth, consistency, or emotional relevance needed to strengthen resilience, reflecting weakened traditional support systems due to urbanization and changing family structures in Kabete Sub-County.

Consistent with Social Support Theory, effective support depends on quality rather than availability. The weak association suggests that support may be largely practical or event-based, offering limited sustained emotional care and insufficiently supporting key processes in Worden's Four Tasks of Mourning. Evidence shows that emotionally meaningful and continuous relationships improve psychological well-being among older adults (Holt-Lunstad et al., 2015; Santini et al., 2020).

Structured interventions such as community counseling, peer support groups, and intergenerational programs provide safe spaces for grief expression and social reconnection, supporting emotional adjustment and adaptation after loss (Eisma & Tamminga, 2020; Gardiner et al., 2018). Strengthening long-term, meaningful relationships through organized community programs may therefore enhance emotional resilience among bereaved older adults.

5.3 Relationship Between Community Engagement and Emotional Resilience

To examine the relationship between community engagement and emotional resilience, Pearson's correlation analysis was conducted, with results presented in Table 2. The analysis assessed whether higher levels of community participation among elderly participants were associated with greater emotional resilience, particularly in coping with loss.

Table 2: Correlation Between Community Engagement and Emotional Resilience

		Emotional Resilience	Community Engagement
Emotional Resilience	Pearson Correlation	1	.558**
	Sig. (2-tailed)		.000
	N	91	91
Community Engagement	Pearson Correlation	.558**	1
	Sig. (2-tailed)	.000	
	N	91	91

**. Correlation is significant at the 0.01 level (2-tailed).

The findings show a strong, positive, and statistically significant relationship between community engagement and emotional resilience ($r = 0.558$, $p < 0.01$). This indicates that older adults who actively participate in religious, social, and volunteer activities are more likely to exhibit higher emotional resilience, as such involvement fosters social connection, support, and a sense of value that aids coping with loss.

These results align with Social Support Theory, highlighting community engagement as a key protective factor that promotes emotional adjustment through belonging, reassurance, and shared coping. Community participation also supports Worden's Four Tasks of Mourning by facilitating grief expression and adjustment after loss. Consistent with prior research, sustained social connectedness is associated with reduced loneliness, better psychological adjustment, and improved mental health among older adults (Holt-Lunstad et al., 2015; Gardiner et al., 2018; Santini et al., 2020).

5.4 Multiple Regression Analysis

To better understand the predicting factors influencing emotional resilience among the elderly, a multiple regression analysis was conducted, incorporating key predictors such as social support, and community engagement.

Table 3 presents the model summary, highlighting the strength and significance of the relationships between these predictors and emotional resilience.

Table 3: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	.579	.565	.26182

a. Predictors: (Constant), Emotional Resilience, Social Support, Community Engagement

These results indicate that the combined effects of social support and community engagement significantly predict emotional resilience among older adults. Supporting this view, Kim and Lee (2019) found that strong social networks and active community participation buffer stress and enhance resilience in later life.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	4.323	.567		7.624	.000
	Social Support	-.149	.090	-.272	-1.651	.102
	Community Engagement	.279	.107	.514	2.612	.011

a. Dependent Variable: Emotional Resilience

The multiple regression equation for this model is expressed as:
Emotional Resilience = 4.323 − 0.149 (Social Support) + 0.279 (Community Engagement)
The regression equation shows the influence of each predictor on emotional resilience while holding others constant. The constant (4.323) represents the predicted resilience level when all predictors are zero. Social support had a negative but non-significant effect ($\beta = -0.149$, $p = 0.102$), indicating that it did not independently predict resilience, possibly due to inconsistent or event-based support. In contrast, community engagement showed a positive and significant effect ($\beta = 0.279$, $p = 0.011$), indicating that active participation in community activities significantly enhances emotional resilience, consistent with Social Support Theory.

6.0 Discussion of Findings on Emotional Resilience, Social Support, and Community Engagement

The findings reveal a nuanced relationship between social support, community engagement, and emotional resilience among older adults in Kabete Sub-County. Although respondents reported receiving social support, its relationship with emotional resilience was weak and statistically insignificant ($r = 0.027$, $p = 0.803$), indicating that support alone did not predict resilience after loss. Descriptive results suggest that most support was practical or event-based (e.g., help during illness), with limited companionship or emotional availability, making it insufficient for long-term emotional recovery. This challenges classical assumptions of Social Support Theory and reflects weakened traditional care systems due to modernization and changing family structures.
In contrast, community engagement showed a strong and significant positive relationship with emotional resilience ($r = 0.558$, $p < 0.01$). Active participation in religious, social, and volunteer activities enhanced belonging, purpose, and coping capacity, supporting both Resilience Theory and socio-ecological perspectives. However, low levels of intergenerational interaction and limited community follow-up during illness or grief indicate gaps in meeting deeper emotional needs.
Qualitative findings highlighted churches, social groups, and clan meetings as key support sources, facilitating grief expression and adjustment in line with Worden's Four Tasks of Mourning. Nonetheless, low participation in formal mentorship and health support programs points to gaps in structured psychosocial care. Overall, while community engagement plays a vital role in emotional adjustment, the study underscores the need for coordinated, long-term, and structured community interventions to strengthen emotional resilience and well-being among bereaved older

adults.

7.0 Conclusion

The study examined how social support and community engagement predict emotional resilience after loss among older adults in Kabete Sub-County, Kiambu County. Findings show that emotional resilience in later life is influenced by both supportive and limiting social factors.

Community engagement emerged as a key predictor of emotional resilience. Active participation in church groups, social associations, and community events enhanced coping, belonging, and emotional recovery after bereavement, supporting Socio-Ecological and Resilience Theories. In contrast, social support showed a weak and non-significant relationship with resilience, suggesting that existing support is often short-term, practical, or inconsistent. These findings highlight the need for sustained emotional connections and structured support programs for bereaved older adults.

8.0 Implications and Recommendations

8.1 Recommendations

Based on the findings, targeted actions are recommended to strengthen emotional resilience among older adults in Kabete Sub-County and similar contexts. Although social and community support systems exist, they are often short-term and inconsistent, leaving many elderly individuals emotionally vulnerable after loss. Coordinated policy and community-level interventions are therefore needed to build sustained support structures.

- Integrate elderly support into social welfare policies: The Kiambu County Government should embed elderly psychosocial support within social welfare programs, including regular home visits and follow-up care for bereaved older adults.
- Expand mental health and grief counseling services: County health facilities should offer age-specific mental health and grief counseling, delivered through community health volunteers and faith-based institutions to reach less mobile elders.
- Promote intergenerational programs: Policies should support mentorship, cultural, and volunteer initiatives that connect younger and older generations, reducing loneliness and strengthening emotional support.
- Strengthen community engagement initiatives: Churches, self-help groups, and community organizations should establish ongoing programs such as bereavement support groups, social clubs, and home-based care to promote continued participation and companionship.

8.2 Suggestions for Further Research

While this study offers important insights into emotional resilience among older adults in Kabete Sub-County, further research is recommended. Future studies should expand geographically to other sub-counties in Kiambu County and across Kenya to enable comparative analysis across cultural and socioeconomic contexts.

Qualitative and mixed-method approaches, including interviews and focus groups with widowed, divorced, or socially isolated elders, would provide deeper understanding of lived experiences and coping processes.

Research should also examine digital and virtual support mechanisms, such as online platforms and communication technologies, as well as intergenerational relationships and faith-based support systems, to better understand their roles in shaping emotional resilience in later life.

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EXAMINING PARENTAL MENTAL HEALTH AS A MEDIATING FACTOR BETWEEN FAMILY DYSFUNCTION AND SCHOOL-AGED CHILDREN'S MENTAL HEALTH IN MALINDI, KENYA

MERCY A. WERE

Abstract

Parental mental health plays a central role in shaping children's cognitive, emotional, social, and psychological development, particularly within the context of family functioning and child mental health outcomes. Existing literature highlights that early childhood mental health challenges can lead to poor developmental outcomes, impaired academic performance, and reduced quality of life. Specifically, it investigated the direct effect of family dysfunction on children's mental health, the impact of family dysfunction on parental mental health. Guided by Structural Family Theory and Bronfenbrenner's Ecological Systems Theory, the study employed a descriptive cross-sectional design targeting children aged 6 to 18 years attending public schools. Stratified and systematic random sampling was used to select households, and data were collected through semi-structured questionnaires administered to parents and primary caregivers. Quantitative data were analyzed using SPSS version 27, applying Pearson's correlation and multiple linear regression. Findings revealed that the relationship between family dysfunction and children's mental health was statistically insignificant ($F = 1.552$, $df = 1, 328$, $p = .214$). Similarly, family dysfunction showed no significant impact on parental mental health ($B = -0.053$, $p = .188$), and neither variable significantly predicted children's mental health outcomes. The study recommends interventions focused on family role clarification, counseling, and community-based mental health support.

Keywords: Authoritarian Parenting, Blended Family, Dysfunctional Parenting, Emotional Neglect, Parental mental health, Family Dysfunction, Mental Health Disorders, Children's Mental Health Status, School-Aged Children.

Introduction

Pediatric mental health problems are common, with 10–20% of children and adolescents globally affected and many disorders beginning in childhood or adolescence (WHO, 2001; 2020; 2023; 2024b). In Kenya, 37.7% of school-aged children experience mental disorders mainly somatic, affective, and conduct disorders often linked to parental separation and maternal employment (Ndetei et al., 2016). Despite this evidence, limited research has examined the role of family dysfunction, particularly within blended families. This study addressed this gap by investigating how violence, neglect, and complex family structures influence the mental health of school-aged children in Malindi Sub-County.

1.1 Background of the Study

A stable, nurturing family supports children's psychological, social, and emotional development, while dysfunction which is marked by violence, neglect, conflict, absence, and complex family structures raises risks of anxiety, depression, behavioral problems, substance abuse, and poor emotional regulation (Mphaphuli, 2023). Children in blended families face added stress from role

confusion and divided loyalties (Ganong & Coleman, 2017). International and Kenyan studies link dysfunctional families and parental psychological distress to poor academic performance and child mental health problems (Dong et al., 2004; WHO, 2023; Ndetei et al., 2016; Bitta et al., 2017), yet limited research has examined these relationships in Malindi Sub-County, underscoring the need for localized study.

1.2 Study Objectives

The current study was guided by the following objectives:

To examine the direct effect of family dysfunction on children's mental health.
To examine the effect of family dysfunction on parental mental health.

1.3 Significance of the study

This study is significant because it examines parental mental health as a mediating factor between family dysfunction and school-aged children's mental health in Malindi Sub-County. Evidence links family violence, neglect, instability, and complex family structures to emotional and behavioral problems in children, with parental distress further increasing vulnerability to mental health difficulties (Ganong & Coleman, 2017; Mphaphuli, 2023; Bitta et al., 2017).

2.0 Literature Review

2.1 Family Dysfunction and Children's Mental Health

Literature shows that family dysfunction violence, neglect, chronic conflict, poor communication, and unstable structures undermine children's emotional security and development, increasing risks of anxiety, depression, behavioral problems, and poor academic performance. Ecological Systems Theory explains these effects at the microsystem level, while Structural Family Theory links them to unclear roles, weak boundaries, and persistent conflict. Evidence from the ACE study and WHO reports confirms long-term mental health risks among exposed children (Dong et al., 2004; WHO, 2020). African and Kenyan studies further show that dysfunction, often interacting with poverty, is strongly associated with child mental health problems (Masilo, 2012; Cluver et al., 2019; Ndetei et al., 2016; Bitta et al., 2017; Kariuki et al., 2020).

2.2 Family Dysfunction and Parental Mental Health

Family dysfunction is associated with poor parental mental health, as chronic conflict, violence, financial strain, and unstable structures increase depression, anxiety, and distress, weakening caregiving. Ecological Systems and Structural Family theories explain how parental distress disrupts roles and family functioning, leading to poorer child emotional and behavioral outcomes (Mokdad et al., 2021; Richardson et al., 2022). Evidence from Sub-Saharan Africa and Kenya links parental mental illness often compounded by poverty and limited services to children's anxiety, depression, somatic complaints, and behavioral problems (Cluver et al., 2019; Ndetei et al., 2016; Kalil, 2020; Kariuki et al., 2020).

Theoretical and Conceptual Framework

3.1 Theoretical Framework

This study is primarily guided by Minuchin's Structural Family Theory and Bronfenbrenner's Ecological Systems Theory. These theories provided great insights into how to perceive the influence of family dysfunction, especially that of blended families, on the mental health of school-aged children.

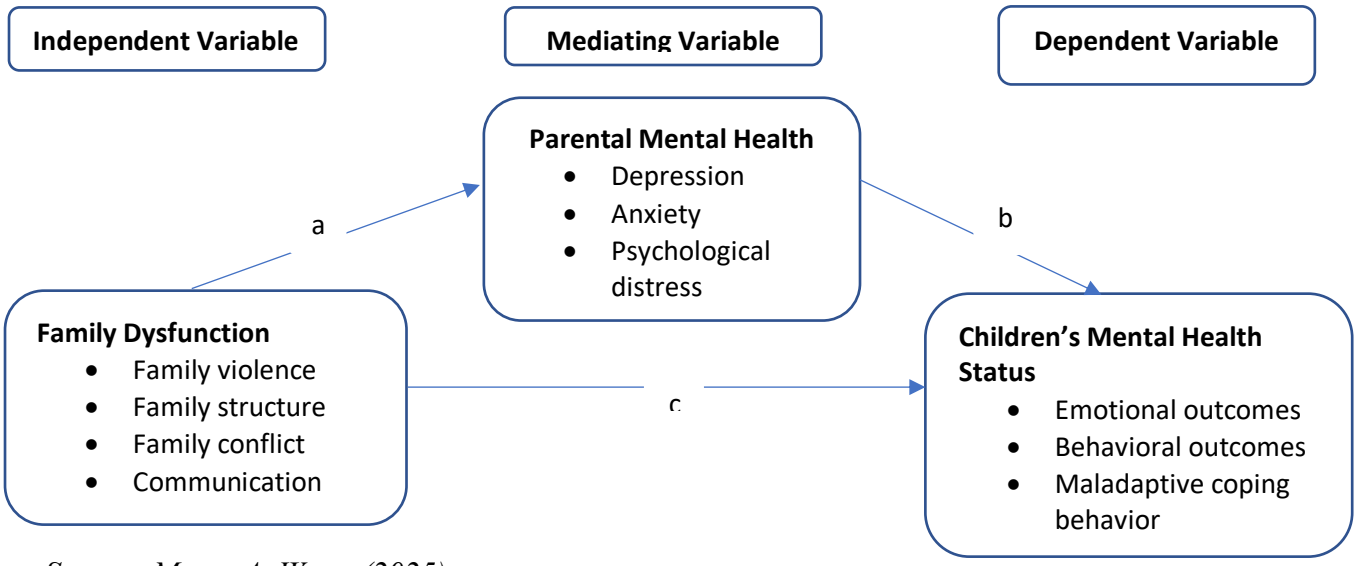
3.1.1 Minuchin's Structural Family Theory

Structural Family Theory (Minuchin, 1974) emphasizes clear roles, boundaries, and subsystems as essential for healthy family functioning. When boundaries are rigid or diffuse, communication breaks down, roles become unclear, and conflict increases, leading to family dysfunction and child emotional and behavioral problems. In this study, the theory guided analysis of how dysfunctional and blended family structures in Malindi Sub-County contribute to children's mental health challenges through role ambiguity, divided loyalties, and disrupted attachments, while informing family-based interventions to strengthen roles and communication.

3.1.2 Bronfenbrenner's Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory explains children's mental health as shaped by interacting systems, with family dysfunction impairing the microsystem and extending to school and peer contexts, while exosystem and macrosystem factors such as poverty and limited services intensify risk (Kalil, 2020; Gerrans & Byrd, 2021). In Malindi Sub-County, blended family structures further heighten vulnerability, underscoring the need for integrated, multi-level interventions.

3.2 Conceptual Framework



Source: Mercy A. Were, (2025).

4.0 Research Methodology

4.1 Research Design

The study employed a descriptive cross-sectional design to examine associations between different forms of family dysfunction and the mental health status of school-aged children at a specific point in time. This design allowed for the simultaneous measurement of multiple variables without inferring causation.

4.2 Study Setting and Population

The study was conducted in Malindi Sub-County, Kilifi County, Kenya, characterized by diverse family structures and socioeconomic challenges. The population comprised households with children aged 6–18 years, with the primary caregiver as the respondent. Malindi has about 63,854 residents across ten wards (KNBS, 2019).

4.3 Sample Size and Sampling Procedure

The sample size was determined using Yamane's (1967) formula for finite populations $\left(n = \frac{N}{1+N(e^2)}\right)$. Using an estimated population of 63,854 and a 0.05 margin of error, a sample of 398 households was obtained. Stratified random sampling was applied by grouping households by administrative wards in Malindi Sub-County, with proportional allocation per ward. Systematic random sampling was then used within each ward by selecting every nth household after a random start.

4.4 Data Collection and Analysis

Data were collected using a structured questionnaire assessing family dysfunction, parental mental health, and children's mental health. Trained research assistants conducted a pilot study (10%), obtained informed consent, and used a drop-and-pick-later approach. Data were coded, entered into SPSS v27, analyzed using descriptive statistics, Pearson's correlation, and multiple regression to test parental mental health as a mediator.

4.5 Ethical Considerations

Ethical approval was obtained from KCA University and NACOSTI. Informed consent was secured, and confidentiality and anonymity were ensured through non-collection of identifiers, secure data storage, and strict adherence to ethical guidelines.

5.0 Results / Findings

5.1 Demographics and Response Rate

5.1.1 Age and Gender of the Respondents

Most respondents were aged 35–44 years (51.5%), indicating active parenting years, with smaller proportions in younger and older age groups, allowing generational diversity. Gender distribution was nearly equal (49.7% male, 50.3% female), ensuring balanced representation and minimal gender bias in views on family dynamics and caregiving.

5.1.2 Relationship to the Child(ren) and Household Size

Most respondents were biological parents (60.3%), with step-parents (22.1%) and guardians (17.6%), reflecting prevalent blended families and potential role strain. Most households were moderate to large (3–6 members), indicating possible resource constraints, caregiving stress, and reduced parental attention affecting family functioning and children's well-being.

5.2 Family Dysfunction and Children's Mental Health

Does family dysfunction directly affect children's mental health?

Regression 1:

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.069[a]	.005	.002	3.070

a. Predictors: (Constant), Family Dysfunction score

Table 2: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.629	1	14.629	1.552	.214[b]
	Residual	3091.177	328	9.424		
	Total	3105.806	329			

a. Dependent Variable: Children mental health status
b. Predictors: (Constant), Family Dysfunction score

Table 3: *Correlation Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30.588	1.571		19.471	0
	Family Dysfunction score	-0.047	0.037	-0.069	-1.246	0.214

Dependent Variable: Children mental health status

The analysis showed that family dysfunction explained only 0.5% of the variance in children's mental health ($R^2 = 0.005$) and was not a significant predictor ($F = 1.552$, $p = 0.214$). Although the relationship was negative ($B = -0.047$; $\beta = -0.069$), the effect was weak and statistically insignificant, indicating insufficient evidence that family dysfunction alone meaningfully predicts children's mental health outcomes.

5.3 Family Dysfunction and Parental Mental Health

Does family dysfunction affect parental mental health?

Regression 2:

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073[a]	.005	.002	3.322

a. Predictors: (Constant), Family Dysfunction score

Table 5: ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	19.228	1	19.228	1.742	.188[b]
Residual	3620.55	328	11.038		

Total	3639.77	329

Dependent Variable: Parental mental health
Predictors: (Constant), Family Dysfunction score

Table 6: Correlation Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	26.64	1.7		15.669	0
Family Dysfunction score	-0.053	0.041	-0.073	-1.32	0.188

a. Dependent Variable: Parental mental health

The analysis showed that family dysfunction did not significantly predict parental mental health ($R^2 = 0.005$; $F(1,328) = 1.742$; $p = 0.188$). Although the relationship was negative ($B = -0.053$), the effect was weak and statistically insignificant, indicating no meaningful impact of family dysfunction on parental mental health in this sample.

6.0 Discussion of Findings

The study found no evidence that parental mental health mediates the relationship between family dysfunction and children's mental health. Family dysfunction showed weak, non-significant associations with both parental and child outcomes, and the indirect effect was negligible. These findings suggest that family dysfunction alone may not produce adverse child outcomes without additional contextual influences, such as socioeconomic conditions, school and community support, and cultural coping mechanisms. They also indicate that broad measures of family dysfunction may mask the effects of specific family processes, highlighting the need for more nuanced, context-sensitive research.

7.0 Conclusion

The findings show a complex, non-linear relationship between family dysfunction, parental mental health, and children's mental health. Although parental mental health did not mediate this link, both factors still influence child outcomes, shaped by socioeconomic and cultural contexts. This underscores the need for context-specific approaches to children's emotional and behavioral well-being.

8.0 Implications and Recommendations

8.1 Recommendations

The study recommends reducing family dysfunction and strengthening parental mental health by expanding school- and community-based family counseling to improve communication and reduce conflict, increasing access to mental health education, screening, and counseling for parents, and providing targeted support programs for single-parent and blended families to reduce stress and enhance resilience.

8.2 Suggestions for Further Research

This study examined parental mental health as a mediating factor between family dysfunction and school-aged children's mental health in Malindi Sub-County, Kenya, and highlights the need for

further research, including comparative studies across regions and cultures, longitudinal research on long-term effects of family dysfunction, and qualitative, interdisciplinary approaches to capture diverse family experiences.

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EDUCATIONAL MANAGERS AND EMOTIONAL INTELLIGENCE

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Priscilla Gachigi

Abstract

This paper examines how emotional intelligence (EI) facilitates educational management in modern, complex and dynamic educational contexts. Emotional intelligence is one's ability to identify, understand and control their feelings and respond to others' emotions effectively. Indeed, EI is a key characteristic of educational managers as their influence on decision-making process, staff, team and organization in educational institutions is important. The paper presents a discussion on key spheres of EI, that is; motivation, self-awareness, empathy, self-regulation and social skills. It then presents empirical research on how educational leaders apply EI in managing conflicts, motivating staff like and maintaining a cordial and constructive environment in learning institutions. The discussion will be anchored on the transformational leadership model, that illustrates the relationship between EI and the contemporary leadership that enhances a shared vision, uninterrupted professional progress and human connections. Additionally, the paper will discuss incorporation of EI in educational leadership as a practical implication, indicating that EI is a trainable talent which can be made available via professional development and training programs specifically designed for it. The paper will outline challenges that may hinder educational management and EI. Subsequently, recommendations for educational managers, teachers' management bodies and governments will be made.

Key words: Emotional Intelligence, Educational Leadership, School Management.

ANALYZING THE DETERMINANTS, PSYCHOLOGICAL CORRELATES AND INTERVENTION STRATEGIES FOR ONLINE GAMING ADDICTION AMONG USERS OF AVIATOR BET IN NAIROBI COUNTY, KENYA

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Abstract

The swift increase in online gaming and online betting has sparked concerns on the issue of behavioral addiction disseminating the most especially among low- and middle-income nations witnessing a faster pace of digitalization. The hybrid gaming-gambling games like Aviator Bet incorporate the high-frequency gaming with the real-money betting, which formats the environment that can contribute to the increased addiction. The paper discussed psychological predictors, societal correlates and intervention outcomes of online gaming addiction among Aviator Bet users in the Nairobi County in Kenya. A cross-sectional mixed-method study was conducted, based on the Cognitive Behavioral Theory and the Addiction Syndrome Model. The standardized measurement of online gaming addiction and psychological distress yielded quantitative data on 248 adult users, whereas the qualitative interview covered the experienced life moments, motivations, and perceived outcomes of the activities. Figure results revealed a significant prevalence of moderate to severe addiction with the anxiety, depression, and stress being significantly linked to the severity of addiction. Financial strain, interpersonal conflict, social withdrawal, and a decreased occupational functioning were considered as social correlates. Maladaptive coping, cognitive distortions, and influence by peers were noted under qualitative findings as the main processes that supported engagement. Individuals who were treated with interventions with a Cognitive Behavioral Therapy showed a decrease in the severity of addiction and in psychological distress. The results remind about the multidimensional effect of the gaming addiction online, and the significance of the synthesis of the psychosocial interventions and control methods to address the emerging digital behavioral health issues in Kenya.

Keywords: Internet casino dependence; Aviator Bet; cognitive behavioral therapy; behavioral addiction; Kenya.

Introduction

Digital technologies have basically redefined modern trends of leisure, consumption as well as social interaction worldwide. Online gaming, online betting is a characteristic of the contemporary entertainment economies in recent years which has become dominant under the influence of the active pace of development of internet infrastructure, mobile technologies, and

digital financial systems. The availability of more smartphones, cheap mobile plans, and hassle- free digital payment systems have made it much easier to participate in an online gaming environment with a considerable reduction in barriers to participation so that individuals can participate consistently and easily in the digital gaming sector. Although these technological advances have increased the opportunities to recreate and have been beneficial to the economic growth, they have also heightened risk exposure to behavioral addictions, especially among young adults who tend to use digital platforms more often (Griffiths, 2017; King et al., 2020).

The increasing acceptance of excessive gaming as a health issue among the population can be seen in the fact that the Gaming Disorder is included in the International Classification of Diseases, Eleventh Revision (ICD-11). According to the definition provided by the World Health Organization, gaming disorder can be considered an uncontrollable pattern of persistent or recurrent gaming that is associated with steadily prioritising gaming over other areas of life and activity as well as the inability to stop playing the game despite its adverse effects (WHO, 2019). This list highlights a universal agreement that the clinically significant impairment in personal, social, educational, and occupational functionality may be achieved as a result of excessive gaming. The results of empirical research in various settings are consistent, showing that problematic gaming is positively correlated with psychological suffering, anxiousness, and depression and negatively correlated with social dysfunction and financial damages (Kiraly et al., 2022).

The dangers of online gaming addiction might be increased in low- and middle-income states because of intense technological uptake that could be observed within settings where regulation systems and mental facilities are still developing. A panegyric case is provided by Kenya. The fast-growing digital economy of the country, with its great penetration of smartphones and mobile money services being utilized through the M-Pesa service, has created an unprecedented access to the online betting and gaming platforms. These services enable live betting under minimal transactional bandwidth resulting in a higher degree of participation and exposure. Out of these sites, Aviator Bet has been able to garner significant popularity, especially in urban and peri-urban residents.

Aviator Bet is a gambling game, that is, a crash game, in which players may bet on how long a virtual aircraft will travel, and the amount that the player may win increases with higher altitude of the aircraft before it meets a sudden crash. Players have to choose when to withdraw their money before the crash ending up bringing in perceived skill and probability. The structural design of the game, which includes low betting frequencies, quick feedback, lack of predictability and irregular reward schedules by ratio, reflects features that have been commonly associated with a greater risk of addiction to gaming and gambling studies (Derevensky and Gainsbury, 2016). These features of the designs encourage uninterrupted gameplay, up the stakes, and cognitive distortions of control and probability.

Although the recent levels of concern among the general population and the rising levels of discussion on media about the issue of online betting has brought up concerns in Kenya, limited empirical research has been carried out to focus on the issue of Aviator Bet-related addiction.

The current literature on gambling and gaming in the Kenyan situation has been inclined to consider the overall sports betting broadly, without much emphasis on hybrid gaming-gambling platforms, as well as intervention approaches based on the psychological theory. Furthermore, evidence on the psychological and social implication of extreme use of such platforms and efficacy of guided therapeutic interventions is low.

This research attempted to fill these gaps by exploring the addiction to online gaming among the users of Aviator Bet in the Nairobi County. The targeted goals were triple: firstly, to determine the frequency and trends of addictive behavior towards Aviator Bet, secondly, the psychological and social outcomes of different degrees of addiction severity, and thirdly, to identify the effectiveness of the Cognitive Behavioral Therapy as an intervention program in minimization of related addiction harm. The study will increase the scope of the current body of literature on behavioral addiction in sub-Saharan Africa and offer valuable information to policy makers, mental health practitioners and other stakeholders concerned with the social and health conditions of the poor population in Africa.

Literature Review

Online Gaming Addiction and Hybrid Gaming-Gambling Platforms

In recent years, online gaming addiction has become the target of the focus of the academic research, and studies have repeatedly found that the structural traits of games predispose a person to compulsive affective participation. Among those features, the most important are schedule of variable ratio reinforcement, prompt feedback, and immersive audiovisual conditioning, which strengthen the sensitivity of responsibility and soften behavioral inhibition (Griffiths, 2017). These features work by enhancing the continued playing, as the unpredictable rewards strengthen the continued playing, thus making a person play again and again even without the bonus gains.

Hybrid gaming-gambling systems intensify the risks by incorporating the effects of real-money gambling into the setting of games. The convergence between gaming and gambling confuses the conceptual and experiential borders between the two activities and adds in the risk of financial losses and gains, contributing to the emotional excitement and a sense of urgency. Studies suggest such platforms can be quite addictive due to the availability of entertainment functions of the games, and the risk, through reward structures associated with gambling, which harm the reinforcing loop significantly (King et al., 2020).

Aviator Bet represents this convergence because it is the type of game played in crashes. These games are characterized by limited rounds and their unpredictability and promote fast decision making and repetitive betting. Empirical research in Europe and Asia has established that gamers of crash-style and other high-frequency betting games have more frequent problem gambling and gaming disorder than players of more traditional game formats (King et al., 2020). These results indicate the importance of the game design in creating addictive behavior and indicate the necessity to pay more attention to such platforms in under-studied settings.

Psychological Effects of Addiction to Online Gaming

One of the most stable correlates of online gaming addiction has been established as psychological distress. There is a solid accumulation of evidence to show that there have been strong associations between the level of addiction and the signs of anxiety, depression, and stress, indicating that overindulgence in gaming is the cause and effect of emotional problems (Kiraly et al., 2022). Psychologically troubled people have access to gaming as a bad coping mechanism and over-gaming can be counterproductive and increase current mental health problems by disrupting sleep, social isolation and economic stress.

Problematic engagement is anchored on cognitive distortions. The illusion of control, optimism bias, and the misinterpretation of near-miss results create unrealistic optimism of success, particularly in games with a high focus on perceived ability or a leading strategic choice (Delfabbro and King, 2015). The choice to cash out at their own discretion when using crash-style games can also reinforce those distortions, which makes players be more delusional about having control over the outcome.

Another important vulnerable factor is emotional dysregulation. The literature shows that those who struggle with negative affect management tend to over-play as a form of being out of emotional control. Experiments indicate that neurocognitive changes may be linked with impaired executive processes and elevated reward sensitivity that results in a lack of self-control, and greater impulsiveness (Brand et al., 2019). All these psychological processes have a role in perpetuating addictive behavior despite its negative effects.

Online Gaming Addiction Effects on Society

In addition to personal psychological damage, there are social implications of online gaming addiction. Monetary stress is one of the most frequently mentioned consequences because the result of over betting is frequently debts, avoidance of family funds, and unstable financial conditions. The presence of interpersonal conflict, decreasing productivity, and withdrawal also add to these challenges, negatively affecting relationships and social functioning (Derevensky and Gainsbury, 2016).

The social impact of addiction can be quite disruptive in the context of collectivism, with a focus on family and community relationships as the primary social aspect in social life. African studies emphasize the effects of socioeconomic pressure factors, peer pressure, as well as recreational options, used in forming gambling and gaming (Otieno et al., 2023). Home conflict and loss of trust between family members often create more financial losses connected to excessive gambling, which supports the cycles of stress and compulsive regimes that can hardly be interrupted by outside influence.

Intervention

The Cognitive Behavioral Therapy

The Cognitive Behavioral Therapy has been generally regarded as among the most effective psychological intervention as far as behavioral addictions are concerned. CBT is based on the fact that addicts use maladaptive cognitions and problems in emotional regulation and learned

patterns of behavior as they maintain their addiction. CBT aims to decrease the severity of addiction and associated psychological distress through the application of distorted beliefs, improvement of coping ability and change of behavior.

As supported with meta-analytic evidence, CBT interventions yield considerable positive impacts in problematic gaming and gambling behavior, especially when interventions are organized, time-bound, and specific to the given nature of the addictive behavior (Stevens et al., 2019). With this solid evidence base, there is a lack of research done to determine the efficacy of CBT on hybrid gaming-gambling addiction in sub-Saharan Africa. This gap shows the relevance of contextualized researches that evaluate the relevance and success of the evidence-based intervention in local cultural and socioeconomic settings.

Theoretical Framework Cognitive Behavioral Theory

The current research is based on Cognitive Behavioral Theory (CBT), which is a solid explanatory theory to explain how behavioral addictions develop and continue. According to Cognitive Behavioral Theory, maladaptive thought patterns, dysfunctional beliefs, and learned behavioral responses are interdependent and combine together to influence the emotional experiences and behavioral responses (Beck, 2011). In this sense, addictive behaviors are not only the outcomes of impulsivity or the inability to have a sense of willpower but are supported by distorted cognitions and reinforcement processes that become both deeply rooted with time.

In the framework of online gaming addiction, CBT focuses on the problem of cognitive distortions like illusion of control, overestimating the winning chances, and focusing on previous victories. These reshaped beliefs are very conspicuous in mixed engine gaming-gambling systems like Aviator Bet where customers have to make quick choices when they are in doubt. Detected capacity to time cash-outs might support misjudging the technical skills and control,which then boosts compulsive involvement. Repeat reward schedules also reinforce the behavioral reactions, which are progressive and disengaging it becomes harder.

CBT also stresses on the importance of emotional regulation in addiction. People who feel psychologically stressed, anxious, or depressed, play games as a poor coping mechanism to avoid negative affect. This tendency strengthens the reliance on gaming as a key emotional self- control mechanism in the long-term, which leads to an increase in the use and a lack of control. CBT provides a conceptual framework on which it relies through the identification and change of these maladaptive thoughts and behaviors.

In the present research, Cognitive Behavioral Theory guided the research questions development, used psychological variables and intervention component design. In particular, the theory informed the measurement of cognitive errors, emotional complaints, and behavioral patterns related to Aviator Bet usage and the examination of CBT-based measures to decrease the severity of addiction and enhance the state of psychology.

Conceptual Framework Addiction Syndrome Model

The conceptual framework of the study is based on the Addiction Syndrome Model that theorizes addiction as a multidimensional disorder being the result of the interrelation of

biological, psychological, and social factors (Shaffer et al., 2012). The model holds that not all different addictive behaviors are substance-specific or behavior-specific but have common underlying mechanisms and manifestations. This point of view is specifically timely to interpret the issue of online gaming addiction, which are behaviorally, cognitively, and emotionally similar to other types of addiction.

The with some of the structural characteristics of the platform, like the speed of a betting round and the randomness of its result, to create a pattern of habitual involvement and increasing damage.

The model also acknowledges the nature of addiction that is connected to addiction-related harm to include a wider social and economic impact. Financial strain, interpersonal conflict, and social withdrawal are considered to be the parts of the addiction syndrome but not secondary results. The conceptualization is also correlating with the psychological distress and social consequences that are one of the important outcomes of the online gaming addiction that this study is dealing with.

The Addiction Syndrome Model has been used in the current research to help develop a system of incorporating several levels of analysis connecting individual psychological processes with social and environmental aspects. It was used to shape the conceptualization of online gaming addiction as a complicated behavioural situation based on individual susceptibility, environmental enhancement, and social background. The model was also able to endorse the consideration of intervention strategies on the basis of the fact that effective treatment should cater to the cognitive, emotional and social aspect of addiction at the same time.

Theoretical and Conceptual Frameworks Integration.

Collectively, the Cognitive Behavioral Theory and the Addiction Syndrome Model gave a holistic background upon which the study is based. A mechanism-based account of the processes by which maladaptive cognitions and behaviors maintain addiction was provided by Cognitive Behavioral Theory and the Addiction Syndrome Model has put such processes into perspective within a wider biological and social context. These frameworks were integrated to allow a comprehensive study of the topic of online gaming addiction among Aviator Bet users, which guided the design, data collection, analysis, and interpretation of the data.

Research Methodology Research Design

The research was based on the convergent parallel mixed methods research design where both quantitative and qualitative data were obtained simultaneously, analyzed separately and then combined in the interpretation. It is in this design that the strengths of both methodologies have been saddened to allow a thorough investigation of the addiction of online gaming among the experts of the Aviator Bet community. The quantitative component helped to measure prevalence, trends, and statistical relationships among severity of addiction and psychological, and social outcomes and the qualitative component offered a background information as it recorded experiences of participants and subjective meanings of gaming practices.

The convergent design was especially suitable, as the behavioral addiction is a multifaceted and complicated issue. The addiction of online gaming is covered not just by the psychological symptoms that can be quantified but by the subtle social and emotional involvement in the field of gaming which cannot be described purely by the quantitative methods. With the input of both the numerical trends and qualitative observations, the study could perform the triangulation of the data and improve the validity rates and form more comprehensive cognizance of the phenomenon under consideration. The design as well enabled evaluation of the outcome of the intervention by looking at the statistical changes as well as the experiential description of Cognitive Behavioral Therapy.

Population and Sampling of the study

The target population was the group of adult Aviator Bet users aged 18 years and above living in the peri-urban regions of Nairobi County in Kenya. Peri-urban regions have been chosen as they have high rates of digital access, socioeconomic plexus, and they are registered users of online betting sites. Participation criteria Inclusion criteria were that the participants must have interacted with Aviator Bet within the six months before the study to make them relevant and recall accurately. Patients younger than 18 years were excluded to address the ethical and legal guidelines.

To coer various con introducing both those actively seeking support and those who are active in gaming to community and online settings, decreasing sampling bias and increasing the level of generalizability.

A sample of 248 participants was recruited in the quantitative part of the research. Out of this sample a purposive subsample of the qualitative interviews was chosen depending on the level of addiction severity and willingness to participate. This method was used to make sure that qualitative data gathered captured various experiences that have mild, moderate, and severe patterns of engagement.

Instruments of Data Collection

Quantitative Instruments

A structured self-administered questionnaire in three separate parts was utilized in order to obtain quantitative data. The initial section recorded demographic data and trends of Aviator Bet playing such frequency of play, length of engagement, and official wagering frequency. In the second part, there were standardized measurements of online gaming addiction, which aimed to evaluate the main diagnostic characteristics of loss of control, preoccupation, tolerance, withdrawal, and persistence in spite of adverse consequences. The third segment evaluated mental distress, and it targeted both anxiety, depressive and stressful symptoms.

The criticality and validity of the quantitative results were strengthened by the use of standardized instruments and allowed to compare the results with the existing literature. The questionnaire was also pilot-tested before its full deployment in order to find out its clarity, internal consistency and contextual appropriateness. Modifications that were required were

done to enhance understanding and cultural relatability.

Qualitative Instruments, and opinions about the interventions of Cognitive Behavioral Therapy. The semi-structured format was suitable to be consistent throughout the interviews but gave flexibility to explore spontaneous themes and personal stories in more depth.

Data Analysis

In order to analyze the quantitative data, statistical analysis software was used. The descriptive statistics were obtained in order to describe demographic variables, addiction severity levels prevalence, and Aviator Bet usage patterns. Inferential statistics, such as regression analysis, were performed in order to test all the relations between the level of addiction and psychological distress and social outcomes, such as financial stress and interpersonal conflict. Significance was evaluated at standard levels and assumptions made to support analyses were reviewed to make it strong.

Thematic analysis was used in analyzing qualitative data, which was done in a systematic and iterative process. The initial reading of this study was done through interview transcripts to gain acquaintance with data. Original codes were then produced to identify meaningful text units of substance regarding the experiences of addiction, cognitive and emotional processes, and perceptions of intervention. The codes were then categorized into larger themes that demonstrated commonalities amongst the participants. The quantitative results were interpreted using qualitative findings that placed them in context and enriched the interpretation of the results, showing how statistical trends were manifested in experience.

Ethical Considerations

The ethical approval of the study was made out before the data were collected by the respective institutional and regulatory authorities. Every participant was made aware of the study, procedures, possible risks and their rights as participants. Participated with informed consent and people were told about their right to leave the study at any stage without any punishment.

this study was conducted based on the principles of research integrity, protection of participants, and responsible conduct.

Results

Trends and Intensity of Aviator Betting

The results saw a great degree of interaction with Aviator Bet with a significant number indicating to be involved in continuous and frequent interactions that include the tendency to make repetitive bets and longer durations of play. The addiction severity scores were analyzed to show a large percentage of the participants, according to the scores, were able to be classified as moderate and severe addiction to online gaming meaning that the use of Aviator Bet is not just a recreational activity to a considerable number of users. All these clues to the existence of problematic behavior patterns are in line with the lack of control, an obsession with gaming,

and continuity despite adverse effects.

The respondents who belonged to the higher spectrums of addiction who got more aggressive participation in the platform, such as a higher number of wage bets and being unable to disconnect once the game had been started. These trends indicate behavioral reinforcement processes of crash-style games, in which fast feedback and unpredictable conditions results persist on playing the game.

Psychological Correlates of Severity of Addiction

The statistical data indicated that the severity of addiction and psychological distress, in particular the symptoms of anxiety depression, and stress, have a significant positive relationship. Those respondents who had scored higher on the addiction scale reported increased levels of emotional distress at all times, which is an indication that problematic Aviator Bet utilization is strongly coupled with impaired psychological health. Regression analysis also established that the severity of addiction was a notable predictor of psychological distress, even after the demographic factors were factored in.

with Aviator Bet, whereas a long-term involvement worsens distress with financial losses, sleeping problems, poor social functioning.

Social and Economic Victims

In addition to psychological implications, the research found significant social and economic effects in addition to an increase in the severity of addiction. The respondents who had higher addiction scores were found to have increased financial stress such as loss of disposable income, they were indebted, and some caused diversion of income on necessities in the household. These monetary struggles would most often go hand in hand with interpersonal strife especially in the family and intimate relationships, and ever escalated social indulgence.

The financial strain and the conflict in relationships indicate the wider social consequences of being an online gaming addict. The respondents mentioned less trust, poor communication and isolation which indicate that not only the individual endures the impact of addiction but also the family systems and social circles do.

Intervention Outcomes

The people who underwent CBT-based intervention programs showed statistically significant changes in the level of addiction and psychological distress. The post-intervention tests revealed an increase in the perceived ability to regulate the gaming behavior, decreased frequency of the gaming behavior and a decrease in the levels of stress and anxiety. These results indicate that the CBT intervention plans worked out with both behavioral and emotional aspects of Aviator Bet addiction.

Qualitative feedback also pointed to the fact that participants gained more cognition of cognitive distortions pertaining to control and probability and that they gained better coping

skills to deal with urges and emotional stimulus. Together, all these results can be interpreted as empirical evidence of the usefulness of CBT-based interventions in this setting.

Discussion

Addictive Hybrid Games-Gambling

The results of the present research support and continue the current evidence on an international scale within the framework of addictive nature of hybrid gaming-gambling platforms. It is not surprising that the risk of moderate to severe addiction is high in Aviator Bet, as previous studies reveal that the risk of addiction is predisposed by the elements of the structural design of the crash-style and high-frequency betting game (King et al., 2020). These platforms contrast with the conventional gaming systems since they merge both entertainment mechanics and real-time monetary betting, thus increasing emotional stimulation and reinforcement of behavior.

The rapid gambling cycles and unpredictability of the results are seen to cause Aviator Bets reinforcing patterns that are potent to deny self-regulations. The variable rate reward scheme, when the wins are unpredictable, is known to generate high percentages of the persistence of behavior despite the ignoble losses. This process has been well-reported across the gambling field of study and is becoming central to the behavioral addictions of the digital world. The aspect that the players have to use their decision of cashing out to create more perceived agency further strengthens the perceived agency whereby the participants would have a feeling of being involved with a skill aspect rather than the game being based on the factor of chance.

On the behavioral side, when subjected to near misses the conditioned responses strengthened by repeated exposure and intermittent rewards, and hence it became more and more difficult to disengage. The respondents of this research, who were more addicted, experienced problems with stopping the play, which they start, which possibly indicates reduced behavioral control. These results confirm the thesis that the characteristics of digital platforms as structures lack neutrality and are actively involved in the formation of the behavior of users in ways that enhance the risk of addiction.

The risks in the Kenyan context can be enhanced by the lack of regulatory controls, and easy accessibility by mobile money systems. The simplicity with which a person can make numerous bets in the short intervals works against natural limitations of too much involvement. In that sense, findings highlight the significance of focusing on the aspects of designing the platforms in the context of developing regulatory and preventive actions. Non-neurogenetic risk factors such

as interventions on the individual level are not sufficient to address the problem of addiction risk but are accompanied by structural ones that prevent the strengthening character of high-risk gaming forms.

Psychological Suffering and Cognitive-Behavioral Processes.

The fact that the severity of addiction is strongly correlated with psychological distress in this

study corresponds to a significant amount of references in which excessive gaming is correlated with anxiety, depression, and stress (Kiraly et al., 2022). All these pieces of evidence imply that the addiction to online gaming among the users of Aviator Bet is tightly connected with the poor state of psychological health, not an independent pattern of behavior.

Through a cognitive-behavioral approach, this relationship may be conceptualized as a dynamic interplay between dysadaptive cognitions, emotional dysregulation and learned behavioral reactions. Participants who feel psychologically disturbed might first approach Aviator Bet as a way of hijacking attention or evoking a moment of relief to the ill mood. Nonetheless, continuous exposure to losses, financial difficulties and the associated time-consuming involvement ultimately enhances distress, consolidating a negative feedback loop of consumption.

This process revolves around cognitive distortions. The illusion of control and optimism bias can activate individuals into overestimating their future ability to forecast them or salvage losses, especially in games that are crash-style and timing decisions generate an illusion of skill. These deranged perceptions perpetuate their participation regardless of the negative effects that keep increasing. With time, the repetition reinforcing of such cognitions results in diminished insight coupled with being more susceptible to compulsive behaviour.

These effects are increased by emotional dysregulation. When having few coping mechanisms, people can start extending themselves to use gaming more often to cope with stress or emotional pain and become more dependent on the platform. Neurocognitive data indicate that reward sensitivity and deficient executive control are the contributing factors to impulsivity and lack of ability to disengage, the processes also aligned with the trends shown in this study.

Notably, the results underscored the necessity to theorize online gaming addiction as a cause and a symptom of psychological distress. Intervention strategies should hence go beyond behavioral issues towards including the emotional and cognitive weaknesses.

Social and Economic Impact in Economic Pronouncement Situations

The social implications of online gaming addiction as depicted in this research highlight the greater effects of the vice in the economically disadvantaged settings. The participants who were more addicted on severity of addiction cited a lot of financial pressures, relationship confrontations, and withdrawal form social interactions which indicated the extensive nature of long term financial betting.

Loss of money was also intense among those who were involved in regular betting sprees which mostly led to debt and diversion of domestic funds. Such losses can have a disproportionate effect on households in peri-urban Kenyan contexts where there are a high percentage of households functioning on limited financial resources. Weakened financial status may put under pressure the simple needs of the person, strain the existing situation at home, and widen stress, which in its turn would empower addictive behavior.

The interpersonal conflict became one of the determinant social products especially in family

and the intimate relations. The respondents used words focusing on poor communication, lack of trust, and distance caused by money loss and gaming time. These relationship ruptures deprive the child of access to a key protective resource in the cause of addiction: social support. The further desperation leads people to the occult social -isolating actors to spend more time on gaming as a main source of interaction and emotional control.

The data are in line with the conceptualizations of addiction as a multidimensional state with both psychological and social aspects. The harms associated with addiction are not only limited to the behaviors of an individual but also impact on family structures and community unity. These disruptions can be especially destructive in the context of collectivist societies in which social ties are central to self and health.

The results of the study drive the necessity to integrate information about the social context during the protection and intervention practices. The treatments of online gaming addiction are not limited to the individual patient but the social support measures which would alleviate financial and relational damages.

CBT-Based Intervention Effectiveness

The effectiveness of the interventions which was identified to be Cognitive Behavioral Therapy based on the current research reflects the applicability of evidence-based psychology to the treatment of online gaming addiction in Kenya. Offenders who went through CBT programs portrayed substantial enhancements in the level of addicts and psychological distress, implying the disorders are better placed to focus on the mechanisms that drive compulsive Aviator Bet engagement.

The cognitive distortions that are brought into the focus of CBT, which is the problem of identifying and altering maladaptive cognitions, specifically relates to false beliefs about power and idealistic beliefs about achieving success. CBT prevents these compulsive decisions and improves self-control and regulation by refuting them and influencing behaviors and thoughts towards flexible thinking patterns. Also, CBT provides patients with coping skills to deal with urges and emotional stimuli, which minimizes a person's use of gaming as a major coping tool.

The methodical quality of CBT treatments might be especially beneficial to the situation with the scarce mental health support. Goal-oriented time-constrained strategies can be inculcated into prevailing counseling services with comparatively less need of resources. The research results on this topic offer empirical evidence of the extension of CBT-based services in the Kenyan systems of mental health.

Significantly, the research will help to fill the gap in the limited literature devoted to the behavioral addiction intervention in sub-Saharan Africa. This paper shows that evidence-based psychological interventions mainstreamed culturally and contextually, can be used to resolve emerging digital health issues. These results justify the need to invest more in the treatment and training of mental health professionals on the evidence-based approaches to behavioral

addiction.

Conclusion

Aviator Bet users game addiction is an issue that poses a serious and developing behavioral health problem in the peri-urban Nairobi County. This research paper shows that risks of experiencing excessive levels of psychological distress, financial pressure, and social dysfunction are linked to addictive involvement in the activities of Aviator Bet, which is why the harm caused by addiction is multifaceted. Intersection of the accelerated digitalization, access to mobile money, and the development of a high-risk game platform have provided an environment that supports the development of compulsive use and weakens self-control.

The results indicate that it is vital to conceptualize the addiction to online gaming as a complex phenomenon that can be caused by the characteristics of individual psychological frailty, the structure of platforms, and even the socioeconomic background. Excessive gaming is both a cause and effect of psychological distress, whereas financial and relational effects make the implications of addiction apply not only to an individual, but to the family and the community. These processes highlight why both behavioral and contextual factors should be approached in wide-ranging ways.

Simultaneously, the research demonstrates promising findings as far as the usefulness of Cognitive Behavioral Therapy-based interventions is concerned. The notable decreases in the severity of addiction and psychological distress prove that the harm may be neutralized and recovery can be assisted using structured and thoroughly evidence-based psychological treatment. These results indicate that online gaming addiction can be addressed by incorporating CBT into current mental health and counseling services in Kenya, which is a feasible approach to this issue.

To mitigate the increasing challenge, a concerted effort in regulation, clinical and public health measures is needed. The structural characteristics of hybrid gaming-gambling platforms which predispose people to greater addiction, such as fast cycles of betting and unpredictable rewards need to be taken into account through regulatory frameworks. Access to evidence-based interventions aimed at addressing behavioral addiction in mental health systems should be increased, and education campaigns involving the public on the contentment of responsible gaming and early help-seeking should be conducted.

Together, these are the necessary measures to reduce an online gaming addiction not only on an individual but also on the society and to make certain that the positive effects of digital innovation do not become shadowed by the detrimental consequences that could be avoided.

Implication and suggestions.

The implications of the results of this study are evident in terms of policies and clinical practice as well as the future research on the topic of online gaming addiction in Kenya. Regulation of the hybrid gaming-gambling platforms, and especially the ones that possess a high-risk structure by being characterized by short betting cycles, irregular reward schedules, and

constant bet should be tightened by policy makers. The regulatory activities must focus on consumer protection by instating responsible gaming practices, restricting the excessive gambling habits, and increasing oversight of online betting sources.

Clinically, the realized success of Cognitive Behavioral Therapy points to the necessity of maximizing the availability of evidence-based treatment of behavioral addictions. CBT-based counseling units ought to be incorporated in the mental health and community support framework systems that are in place such as at the public hospitals, counseling centers, and outreach services. Educating mental health practitioners on the identification and treatment of online gaming addicts would enhance the outcome of early intervention and treatment.

Education to the subjects of the people is also essential. Individualized awareness efforts can be used to advance responsibility in gambling, raise awareness about the dangers of addiction, and foster facilitate early help-seeking, especially among young adults. Lastly, prospective studies need to be conducted so as to understand the long term consequences of the online gaming addiction and the scalability and sustainability of the CBT based interventions to its application in different socioeconomic and geographic settings in Kenya.

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THE DARK SIDE OF THE DIGITAL WORLD: SOCIAL MEDIA-RELATED ANXIETIES, RELATIONSHIP PROBLEMS AND THEIR IMPACT ON IDENTITY

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Abstract

Digitalization has transformed many areas of our lives, such as business processes, public services, forms of communication, education, access to information, and social life, providing many advantages, primarily speed and efficiency. However, it can be said that digitalization has a dark side that should not be overlooked, in addition to its advantages. In fact, the intense online interaction caused by the digital world, the culture of constant connectivity, and the pressure to exist in the virtual environment expose individuals to various psychological, social, and behavioral risks. Based on this, this study investigated the social media anxieties, addictions, and psychological effects brought about by digitalization using the literature review method. The results show that digitalization is associated with social media-related anxieties such as fear of missing out, nomophobia and notification anxiety, as well as relationship issues such as ghosting, orbiting and breadcrumbing, issues related to identity such as selfie dysmorphia, social comparison orientation, social media like addiction. This study revealed the negative aspects of the digital world, highlighting that it carries risks that must be assessed psychosocially and managed through various measures.

Keywords: Digitalization, Social Media Anxiety, Relational Problems, Psychosocial Risks.

DİJİTAL DÜNYANIN KARANLIK YÜZÜ: SOSYAL MEDYAYA BAĞLI KAYGILAR, İLİŞKİSEL SORUNLAR VE KİMLİĞE YANSIMALARI

Özet

Dijitalleşme, iş süreçleri, kamu hizmetleri, iletişim biçimleri, eğitim, bilgiye erişim veya sosyal yaşam gibi yaşamımızda birçok alanı dönüştürerek başta hız ve verimlilik olmak üzere pek çok avantaj sağlamıştır. Ancak, dijitalleşmenin sahip olduğu avantajlarının yanı sıra göz ardı edilmemesi gereken bir karanlık yüzü olduğu söylenebilir. Öyle ki dijital dünyanın getirdiği yoğun çevrimiçi etkileşim, sürekli bağlı kalma kültürü ve sanal ortamda var olma baskısı, kişilerin psikolojik, sosyal ve davranışsal açıdan çeşitli risklerle karşı karşıya kalmasına sebep olmaktadır. Bundan hareketle bu çalışmada literatür taraması yöntemi ile dijitalleşmenin beraberinde getirdiği sosyal medya kaygıları, bağımlılıkları ve psikolojik etkileri araştırılmıştır. Alınan sonuçlarda, dijitalleşmenin özellikle kaçırma korkusu (FOMO), telefonsuz kalma korkusu, bildirim kaygısı gibi sosyal medya bağlamında kaygılara, mesajlara cevap vermemek, aniden iletişimi tamamen kesmek gibi ilişkisel sorunlara, filtrelenmiş fotoğraflara bakıp kendi görüntüsünü beğenmeme, kendini diğerleriyle kıyaslama ile beğeni ve

yorum alma bağımlılığı gibi kimliğe yansıyan sorunlara neden olduğu tespit edilmiştir. Gerçekleştirilen bu çalışma kapsamında dijital dünyanın getirdiği olumsuzluklar açığa çıkarılarak, psikososyal açıdan değerlendirilmesi ve çeşitli önlemlerle yönetilmesi gereken riskler taşıdığı ortaya konmuştur.

Anahtar Kelimeler: Dijitalleşme, Sosyal Medya Kaygısı, İlişkisel Sorunlar, Psikososyal Riskler.

1. Giriş

Günümüzde sosyal medya, bireylerin iletişim kurma, bilgi edinme ve sosyal ilişkilerini sürdürme biçimlerini köklü bir şekilde değiştirmiştir. Ancak dijital platformlar, beraberinde yeni psikolojik ve sosyal riskleri de getirmektedir. Sosyal medya kullanımının aşırıya kaçması, bireylerde çeşitli kaygı türlerini, ilişkisel sorunları ve benlik algısında bozulmaları tetikleyebilmektedir. Bu bağlamda, dijital dünyanın "karanlık yüzü" olarak adlandırılabilecek çeşitli kavramlar literatürde incelenmektedir. Dijital dünyada karşılaşılan psikolojik ve ilişkisel sorunlar arasında, FoMO (fear of missing out – gelişmeleri kaçırma korkusu), nomophobia (telefonsuz kalma korkusu), notification anxiety (bildirim kaygısı), social media fatigue (sosyal medya yorgunluğu), ghosting (hayaletleme), orbiting (yörüngede kalma), selfie dysmorphia (beden algısı bozukluğu), social comparison orientation (sosyal karşılaştırma eğilimi) ve social media like addiction (sosyal medya beğeni bağımlılığı) gibi kavramlar gösterilebilir.

Bu kavramlar üzerine yapılan çalışmaların incelenmesi bireylerin dijital ortamda karşılaştıkları riskleri anlamak açısından büyük önem taşımaktadır. Öyle ki hem gençlerin dijital ortamlarda sağlıklı etkileşimler geliştirmelerine rehberlik edilebilir hem de olası psikolojik ve sosyal sorunları önleyici müdahaleler tasarlanabilir. Bu bağlamda, sosyal medya kullanımının hem bireysel psikoloji hem de sosyal ilişkiler üzerindeki etkilerinin giderek daha önemli bir araştırma alanı hâline geldiği görülmektedir.

2. Literatür Taraması

Balcı ve Sarıtaş (2025) tarafından yapılan araştırmada, üniversite öğrencilerinin sosyal medya yorgunluğu, can sıkıntısı ve sosyal medya bağımlılığı arasındaki ilişkiyi ortaya çıkarmak amaçlanmıştır. Nicel yöntemle ve ilişkisel tarama deseniyle yürütülen çalışmada Konya'daki devlet üniversitelerinden 412 öğrencinin gönüllü katılımıyla veri toplanmıştır. Elde edilen sonuçlar, erkek öğrencilerin YouTube, Facebook ve Telegram'ı kadınlara kıyasla daha fazla kullandığını göstermiştir. Buna ek olarak, sosyal medya yorgunluğu, can sıkıntısı ve sosyal medya bağımlılığı arasında pozitif yönlü ve anlamlı ilişkiler bulunmuştur.

Cobzeanu ve Măirean (2025) genç yetişkinler üzerinde yürüttükleri araştırmada, ghosting ve breadcrumbing davranışlarının yordayıcılarını incelemişlerdir. Çalışmada 18–27 yaş aralığında 578 katılımcıdan elde edilen veriler analiz edilmiştir. Sonuçlar, ghosting davranışının en güçlü yordayıcısının daha önce ghosting'e maruz kalma deneyimi olduğunu ortaya koymuştur. Breadcrumbing davranışı ise breadcrumbing deneyimleri, ahlaki kayıtsızlaşma, toksik disinhibisyon ve psikolojik sıkıntı tarafından yordanmıştır.

Ravindran ve Ravindranath (2024) çalışmalarında literatürde, Instagram'da gerçekçi olmayan güzellik standartları ve idealize edilmiş yaşam tarzlarına sürekli maruz kalmanın, bireylerde beden memnuniyetsizliği ve gerçeklik algısında bozulmaya yol açtığını belirtmişlerdir. Devamında araştırmaların, yüksek düzeyde sosyal medya bağımlılığı ile bu tür bozukluklar arasında anlamlı bir bağlantı olduğunu ortaya koyduğunu ve kullanıcıların sınır koyma (setting

boundaries) ile öz bakım uygulamaları (practicing self-care) konusunda bilinçlendirilmesinin ruh sağlığı üzerindeki olumsuz etkileri azaltmada önemli olduğunu vurgulamışlardır.

Pancani vd. (2021) çalışmalarında ghosting ve orbiting görülen kişiler üzerindeki psikolojik ve davranışsal etkileri araştırmışlardır. Bu doğrultuda 208 genç yetişkinin verileri nitel tematik içerik analiziyle incelenmiş ve tepkilerin dört aşamada (şaşkınlık/kafa karışıklığı, öfke-üzüntü-suçluluk, ilişkiyi onarma girişimleri, kabullenme) ortaya çıktığı bulunmuştur. Ayrıca elde edilen sonuçlar, ghosting ve orbiting'in sosyal dışlanma literatürü bağlamında birer ostracism (dışlanma) biçimi olarak değerlendirilebileceğini göstermiş ve ilişki sonlandırma teorileriyle bağlantılar kurularak gelecekteki araştırmalara yönelik çıkarımlar sunmuştur.

Hoşgör (2020) yaptığı çalışmada üniversite öğrencilerinin nomofobi (telefonsuz kalma korkusu) düzeylerini etkileyen faktörleri ve nomofobinin ders performansları üzerindeki etkilerini araştırmıştır. İstanbul'da sağlık alanındaki farklı bölümlerde öğrenim gören öğrencilerle gerçekleştirilen araştırmada, nomofobi ölçeği kullanılmış ve toplanan veriler doğrulayıcı faktör analizi ile yapısal eşitlik modeli kullanılarak incelenmiştir. Bulgular, akıllı telefonun sık kontrol edilmesi, şarj cihazı taşıma alışkanlığı, uyanır uyanmaz telefonun kontrol edilmesi ve sosyal medyada geçirilen sürenin nomofobi üzerinde etkili olduğunu göstermiştir. Ayrıca nomofobinin öğrencilerin derste dersi dinleme ve derse katılım performanslarını olumsuz yönde etkilediği saptanmıştır.

Kaya ve Savaşlı (2020) çalışmalarında, farklı lise türlerinde öğrenim gören öğrencilerin sosyal karşılaştırma eğilimleri ile duygusal öz-yeterlik düzeylerini incelemişlertir. Araştırmada elde edilen bulgular, sosyal karşılaştırma eğilimleri ile duygusal öz-yeterliğin duyguları düşünceyi destekleyici olarak kullanma alt boyutunun cinsiyet değişkeni açısından farklılık gösterdiği, erkeklerin ortalamalarının kadınlarınkinden daha yüksek olduğu tespit edilmiştir. Ekonomik durum değişkeni açısından bakıldığında, ailesinin ekonomik durumunu orta düzeyde değerlendiren ergenlerin sosyal karşılaştırma düzeylerinin daha yüksek olduğu bulunmuştur. Ayrıca okul türü değişkeni incelendiğinde, fen lisesi öğrencilerinin sosyal karşılaştırma eğilimlerinin ve duygusal öz-yeterlik ölçeğinin düzenleme alt boyutu puanlarının diğer lise türlerine göre daha düşük olduğu belirlenmiştir.

LeFebvre vd. (2019), çalışmalarında ilişkilerin sona erdirilmesini ghosting (aniden iletişimi kesme) stratejisi bağlamında incelemişlerdir. Nitel araştırma yöntemiyle gerçekleştirilen çalışmada, genç yetişkinlerin arabulucu medyatik ortamlarda ilişkiyi sonlandırmaya yönelik kullandıkları stratejiler ve bu süreçte ortaya çıkan kopuş dinamikleri analiz edilmiştir. Alınan sonuçlar özellikle, ghosting sürecinin başlatıcı olmayan tarafı belirsizlik ve sorgulamalarla karşı karşıya bıraktığı, başlatıcı tarafın ise iletişimi tamamen keserek ilişkiden çekildiği belirlenmiştir. Çalışma, romantik ilişkilerde ghosting'in, gelişen iletişim teknolojilerinin sunduğu olanaklarla birlikte, bireylere geleneksel ayrılık süreçlerine girmeden ilişkiyi sonlandırma imkânı sunduğunu göstermektedir.

Dumas vd. (2017) genç yetişkinlerin Instagram'da başkalarının dikkatini çekmek ve onay almak amacıyla "beğeni" toplama davranışlarını ne ölçüde sergilediklerini incelemişlerdir. Bulgular, katılımcıların Instagram'da çeşitli beğeni arama davranışları sergilediklerini göstermiştir. Analizler, bu davranışların normatif davranışlar (yaygın veya sosyal olarak kabul görmüş, örn. filtre veya hashtag kullanımı) ve yanıltıcı davranışlar (ör. beğeni satın almak veya fotoğrafları dijital olarak değiştirmek) olarak ikiye ayrıldığını ortaya koymuştur.

Stothart vd. (2015) cep telefonuna gelen bildirimlerin kısa süreli dahi olsa zihindeki düşünleri dağıtmasından ve iş performansını olumsuz etkilemesinden hareket ederek bildirim kaygısı (notification anxiety) üzerine çalışmışlardır. Yapılan çalışmanın sonuçları katılımcılar görev sırasında doğrudan mobil cihazla etkileşimde bulunmasalar bile yalnızca cep telefonuna gelen bildirimlerin dikkat gerektiren bir görevde performansı önemli ölçüde bozduğunu göstermiştir.

Przybylski vd., (2013) çalışmalarında sosyal medyanın sunduğu çok sayıda etkileşim fırsatıyla birlikte bireylerde ortaya çıkan kaçırma korkusu (FoMO) olgusunu incelemişlerdir. Bundan hareketle üç aşamalı olarak yürütülen çalışmanın ilkinde, uluslararası bir örneklemden elde edilen verilerle gelişmeleri kaçırma korkusunu ölçmek üzere FoMO ölçeğini geliştirilmiş ve böylelikle kavram ilk kez ölçülebilir hale getirilmiştir. İkincisinde, demografik özellikler, motivasyonlar ve refah düzeyi ile FoMO arasındaki ilişkiler araştırılmıştır. Üçüncü çalışmada ise genç yetişkinler üzerinde FoMO'nun davranışsal ve duygusal kolerasyonları ele alınmıştır.

3. Kavramsal Çerçeve

3.1. Sosyal Medya Bağımlılıkları ve Kaygıları

FoMO (Fear of Missing Out – Gelişmeleri Kaçırma Korkusu)

FoMO, bireyin başkalarının daha ödüllendirici ya da keyifli deneyimler yaşadığı düşüncesiyle ortaya çıkan sürekli kaygı ve huzursuzluk halidir. Sosyal medya bu duyguyu pekiştirir; çünkü birey, tüm etkinliklerde yer alamayacağını bilmesine rağmen başkalarının neler yaptığını kaçırmamak için sürekli çevrimiçi kalma ihtiyacı hisseder (Przybylski vd., 2013). Yüksek FOMO düzeyi, düşük yaşam doyumu, artmış kaygı ve depresyon belirtileri ile ilişkilidir (Baker vd., 2016; Elhai vd., 2016). Birey, dışlanma korkusunu azaltmak için sosyal medyayı kompulsif biçimde kontrol eder (Alt, 2015). Yüksek FOMO uyku sorunları, dikkat dağınıklığı ve düşük akademik performansla bağlantılıdır (Elhai vd., 2018).

Nomophobia (Telefonsuz Kalma Korkusu)

Nomophobia, cep telefonuna erişimin kaybolması ya da çalışmaması durumunda bireyde oluşan endişe, kaygı veya huzursuzluk halleri anlamına gelir (Notara vd., 2021). Nomophobia, özellikle dört temel boyut üzerinden tanımlanır: a) iletişime erişememe korkusu, b) çevrimdışı kalma hissi, c) bilgiye anlık erişim kaybı, d) konforun kaybı korkusu. Bragazzi ve Del Puente (2014), bu durumun DSM-V'de yer alması gerektiğini öne sürmüş ve nomophobia'nın klinik olarak ele alınması gerektiğini vurgulamışlardır.

Notification Anxiety (Bildirim Kaygısı)

Literatürde notification anxiety resmi bir psikiyatrik tanı ya da yerleşmiş kuramsal kavram olarak geçmemekle birlikte, özellikle insan-bilgisayar etkileşimi ve sosyal medya psikolojisi çalışmalarında bildirimlerin yarattığı sürekli kaygı ve stres durumunu tanımlamak için kullanılmaktadır (Stothart vd., 2015; Pielot ve Rello, 2017; Ohly ve., 2023). Bildirimler, sosyal medya bağımlılığının ödül-dopamin döngüsünü güçlendirerek "hemen yanıt verme" baskısını artırmaktadır (Bayer vd., 2020). Yapılan araştırmalarda bildirimlerin yokluğunda kişilerin hem rahatlama hem de bir bilgiyi kaçırdıkları için kaygılı hissettikleri görülmüştür. (Pielot ve Rello, 2017) Ayrıca bildirimlerin hem varlığı hem de yokluğu kaygı uyandırabilmektedir (Fitz vd., 2019). Bildirimlerin gün içerisinde toplu iletildiğinde kişilerin daha az kaygı hissettiği görülmüştür.

Social Media Fatigue (Sosyal Medya Yorgunluğu)

Social media fatigue olarak isimlendirilen ve Türkçe'ye sosyal medya yorgunluğu olarak çevrilen kavram, sosyal medyada sürekli bilgi akışına maruz kalmanın getirdiği tükenmişlik hissini anlatmaktadır (Dhir, 2018; Zheng ve Ling, 2021). Akbuğa (2025) Türkiye'deki Z nesli ile yaptığı bir çalışmada, genç kuşağın sosyal medya yorgunluğu yaşıyor olsa da bir şeyleri kaçırma korkusundan (FOMO) sosyal medyada vakit geçirmeye devam ettiğini aktarmıştır.

3.2. İlişkisel Etkileri

Ghosting (Hayaletleme)

Ghosting, bir kişiyle açıklama yapmaksızın iletişimi kesmek olarak tanımlanır (Thomas ve Dubar, 2021). Ghosting, terk edilen taraf için yoğun olumsuz duygulara (özsaygı kaybı, reddedilmişlik, öfke) yol açarken, uygulayan taraf için çoğunlukla çatışmadan kaçınma işlevi gördüğü gösterilmiştir (Koessler vd., 2019).

Orbiting (Yörüngede Kalma)

Orbiting, ghostinge benzer bir şekilde ilişkilerde taraflardan birinin iletişimi açıklama yapmadan kesmesini içerir. Fakat Orbiting'de, eski partner doğrudan iletişimi kesse de sosyal medya üzerinden takip etmeye devam eder (Pancani vd., 2021). Örneğin, eski partnerin paylaşımlarını görmek, hikayelerine göz atmak, beğeni bırakmak veya içeriklerini paylaşmak gibi dolaylı etkileşimler devam eder. Orbiting, eski partnerin sosyal medya üzerindeki davranışları sayesinde "fiziksel olmasa da dijital bir yörüngede" kalmayı sürdürür. Böylece ilişki tam anlamıyla kapanmamış olur.

Breadcrumbing (Oyalama)

Breadcrumbing terimi ekmek kırıntısı anlamına gelir, Hansel ve Gratel masalında iki çocuğun ormana giderken arkalarında ekmek kırıntısı bırakması gibi, breadcrumbing yapan kişi ilişkilendiği kişiye çeşitli "aşk kırıntıları" bırakır. Ghostingte olduğu gibi kişi bir ilişkiye girmez ama o ilişkinin olma ihtimalini karşı tarafın zihninde açık tutmak adına flörtöz işaretler bırakır (Navarro vd., 2021). Örneğin, diğer kişiye ara sıra mesaj atmaya devam eder fakat bu mesajlar uzun süreli bir birlikteliğe izin verecek kadar sık ve düzenli olmaz. Online dating uygulamalarını kullanmak ile breadcrumbing yapmak/e maruz kalmak arasında anlamlı bir ilişki bulunmuştur.

3.3. Kimliğe Yansımaları

Selfie Dysmorphia (Beden Algısı Bozukluğu)

DSM-5'te yer alan BDD (Body Dysmorphic Disorder), görünümde var olmayan ya da çok küçük kusurlarla aşırı uğraşma, bunun en az günde 1 saat düşünceyi işgal etmesi ve işlevselliği bozmasıyla tanımlanıyor (APA, 2013). Aynı zamanda aynada sürekli kontrol etme, başkalarından onay arama gibi kompulsif davranışlar eşlik ediyor. Sık sosyal medya kullanımı ile BDD semptomları arasında bir korelasyon olduğu görülüyor (Alsaidan vd., 2020; Wakar vd., 2022). Selfie dismorphia, BDD'nin dijital platformlara özgü görülen bir versiyonu olarak adlandırılıyor. Bu kavram, kişilerin sosyal medya platformlarındaki filtreli görünümlerinden etkilenerek kendi bedenlerine dair memnuniyetsizliklerinin artmasını ve bu filtreli görünümleri elde etmek için estetik ameliyat yapmaya yönelmelerini ifade ediyor (Ramphul ve Mejias, 2018). Özellikle Snapchat ve Instagram filtrelerinin cilt rengini, yüz hatlarını ve göz-dudak oranlarını değiştirmesi nedeniyle bireylerin gerçeklik algısında bozulma yarattığı, bunun da estetik cerrahiye yönelimi artırdığı görülüyor. Nitekim bir vakada, bireyin filtrelenmiş

fotoğrafına benzemek için cerrahi müdahale talep ettiği, ancak plastik cerrahın bu talebi reddederek danışanı psikolojik desteğe yönlendirdiği ve olumlu sonuçlar alındığı bildiriliyor.

Social Comparison Orientation (Sosyal Karşılaştırma Eğilimi)

Sosyal karşılaştırma eğilimi, bireylerin kendilerini başkalarıyla kıyaslama eğilimini ifade eder (Gibbons ve Buunk, 1999). Araştırmalar sosyal medya kullanımının olumsuz karşılaştırmalar ve kıskançlık yoluyla psikolojik iyi oluşu zedelediğini ortaya koymaktadır (Verduyn vd., 2015). Facebook kullanımının zamanla yukarıya doğru karşılaştırmaları tetiklediği ve bunun özsaygı ile iyi oluşu düşürdüğü, Instagram kullanımının ise doğrudan psikolojik iyi oluş üzerinde olumsuz etkiye sahip olduğu bulunmuştur (Schmuck vd., 2019). Sosyal medya kullanımı, kıyaslama davranışlarını artırarak FoMO ve depresif belirtileri beslemekte; aynı zamanda özsaygı, fiziksel görünüm ve sosyal kabul algısını da olumsuz etkilemektedir (Burnell vd., 2019; Feinstein vd., 2013). Düşük özsaygıya sahip bireylerde yüksek sosyal karşılaştırma eğilimi ruh sağlığını daha kırılgan hale getirmektedir (Jang vd., 2016).

Social Media Like Addiction (Sosyal Medya Beğeni Bağımlılığı)

Sosyal medyada kendini açmak ve olumlu geri bildirim almak kendi başına ödüllendirici deneyimlerdir (Guedes vd., 2016; Ryan vd., 2014). Akıllı telefonlar, bireylerin içeriklerini sürekli paylaşmalarına ve popülerliğini izlemelerine olanak sağlar, bu da bir davranış-ödül geri bildirim döngüsü yaratabilir (Guedes vd.., 2016). Bu döngü, kullanıcıları daha fazla içerik paylaşmaya teşvik eder ve zamanla bu süreç bağımlılık oluşturabilir. Ayrıca beğeni alma isteği, narsisizmle doğru orantılı bulunmuş ve ayrıca yüksek narsisistik özellikler ile problemli sosyal medya kullanımının bağlantılı olduğu görülmüştür (Andreassen vd., 2017). Bunun yanı sıra Dumas ve arkadaşları (2017), genç yetişkinlerin beğeni almak için aldatıcı davranışlarda (beğeni veya takipçi satın almak, fiziksel görünümde oynamalar yapmak vb.) bulunabildiğinden bahsetmiştir.

SONUÇ VE DEĞERLENDİRME

Sonuç olarak, sosyal medya kullanımının bireyler üzerinde yalnızca olumlu etkiler yaratmadığı, aynı zamanda psikolojik, davranışsal ve ilişkisel açıdan ciddi riskler barındırdığı görülmektedir. Literatür, gelişmeleri kaçırma korkusu, telefonsuz kalma kaygısı, bildirim kaygısı, sosyal medya yorgunluğu, hayaletleme ve oyalama gibi davranışlar ile beden algısı bozuklukları, sosyal karşılaştırma eğilimleri ve beğeni bağımlılığı gibi olguların gençler üzerinde önemli olumsuz etkiler yarattığını göstermektedir (Balcı ve Sarıtaş, 2025; Cobzeanu ve Măirean, 2025; Dumas vd., 2017; Hoşgör, 2020; Kaya ve Savaşlı, 2020; LeFebvre vd., 2019; Pancani vd., 2021; Przybylski vd., 2013; Ravindran ve Ravindranath, 2024; Stothart vd., 2015). Bu durum, sosyal medya kullanımının "karanlık yüzü" olarak adlandırılabilecek bir dizi psikolojik kaygı ve sosyal sorun ile ilişkili olduğunu ortaya koymaktadır.

Bireylerin dijital ortamlarda sağlıklı etkileşimler geliştirebilmeleri için çeşitli önlemlerin alınması önem arz etmektedir. Öncelikle, sosyal medya kullanımına sınırlar koymak ve belirli zaman dilimlerinde çevrimdışı kalmak, psikolojik yorgunluk ve kaygıyı azaltabilir. Ayrıca, kullanıcıların farkındalık geliştirmesi ve öz bakım uygulamaları (self-care) ile kendi ruh sağlığını desteklemesi de gerekbilir. Eğitim kurumları ve aileler de gençlerin sosyal medya kullanımıyla ilgili rehberlik sağlayarak, sosyal karşılaştırma ve beğeni bağımlılığı gibi riskli davranışları önlemeye katkıda bulunabilir. Nitekim, sosyal medya kullanıcılarının bilinçli ve dengeli kullanım alışkanlıklar geliştirmeleri, dijital dünyadaki olumsuz etkileri azaltmada kritik bir rol oynayacaktır.

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ZAKAT, REDISTRIBUTION, AND ECONOMIC STABILITY: A THEORETICAL MACROECONOMIC PERSPECTIVE

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Abstract

This article examines the role of zakat as a redistributive and stabilizing mechanism within a theoretical macroeconomic framework. While conventional macroeconomic models emphasize taxation, public expenditure, and monetary interventions as primary tools for redistribution and stabilization, Islamic economics introduces zakat as a mandatory, rule-based institution designed to ensure social justice and economic balance. The purpose of this study is to analyze zakat's potential contribution to macroeconomic stability through income redistribution, consumption smoothing, and risk mitigation. The research employs a theoretical and analytical methodology, drawing on classical Islamic economic principles and modern macroeconomic theory. A stylized macroeconomic framework is developed to illustrate how zakat transfers resources from low marginal propensity to consume agents to high marginal propensity to consume agents, thereby supporting aggregate demand and reducing volatility over the business cycle. The findings suggest that zakat functions as an automatic stabilizer by counteracting income concentration, enhancing economic resilience, and reducing reliance on debt-based fiscal tools. The study further argues that zakat-based redistribution may contribute to financial stability by limiting excessive leverage and promoting risk-sharing. In conclusion, the article highlights zakat's relevance as a complementary macroeconomic institution capable of enhancing economic stability in both Islamic and hybrid economic systems, while offering directions for future empirical research.

Keywords: Zakat, income redistribution, macroeconomic stability, Islamic economics, fiscal policy.

INTRODUCTION

Economic stability and equitable income distribution remain central concerns of modern macroeconomic theory. Conventional economic frameworks typically address these issues through fiscal instruments such as progressive taxation, social transfers, and counter-cyclical public spending, complemented by monetary policy interventions. Despite their widespread use, these mechanisms often face structural limitations, including rising public debt, pro-cyclical fiscal behavior, and increasing income inequality. In this context, alternative institutional arrangements that can simultaneously promote redistribution and macroeconomic stability have gained renewed academic attention.

Islamic economics offers a distinct perspective on redistribution through the institution of zakat, a mandatory transfer system rooted in ethical, legal, and economic principles. Unlike discretionary taxation policies, zakat is a rule-based obligation imposed on specific categories of wealth and income, with clearly defined beneficiaries. Its primary objective is not only

poverty alleviation but also the continuous circulation of wealth within society, thereby preventing excessive concentration of resources. From a macroeconomic standpoint, these characteristics suggest that zakat may function as an inherent stabilizing mechanism rather than a reactive policy tool.

However, mainstream macroeconomic literature has largely overlooked zakat as a formal redistributive institution. Existing studies on redistribution predominantly focus on welfare states, social insurance systems, and fiscal multipliers, while Islamic redistributive mechanisms are often confined to normative or micro-level analyses. As a result, the potential macroeconomic implications of zakat—particularly its effects on aggregate demand, consumption smoothing, and economic volatility—remain underexplored within theoretical macroeconomic models.

The purpose of this article is to address this gap by examining zakat from a theoretical macroeconomic perspective, emphasizing its role in redistribution and economic stability. The study conceptualizes zakat as an automatic stabilizer that reallocates resources from economic agents with lower marginal propensities to consume toward those with higher propensities, thereby supporting aggregate demand and mitigating cyclical fluctuations. Unlike debt-financed fiscal interventions, zakat operates without interest-based financing and does not rely on government borrowing, which may enhance long-term fiscal sustainability.

Methodologically, the article adopts an analytical and conceptual approach grounded in Islamic economic theory and contemporary macroeconomic thought. A stylized macroeconomic framework is developed to illustrate the transmission channels through which zakat affects income distribution, consumption behavior, and macroeconomic stability. Rather than providing empirical estimations, the study aims to establish a coherent theoretical foundation that can inform future quantitative research.

The remainder of the article is structured as follows. The research and findings section presents the core theoretical analysis and is organized into five subtopics addressing the redistributive logic of zakat, its stabilizing properties, and its macroeconomic implications. The results section summarizes the main findings, discusses policy relevance, and outlines directions for further research.

RESEARCH AND FINDINGS

1. The Redistributive Logic of Zakat in Islamic Economic Theory

Zakat represents a foundational redistributive institution within Islamic economic theory, designed to ensure the continuous circulation of wealth and to mitigate excessive income and asset concentration. Unlike voluntary charity or discretionary fiscal redistribution, zakat is a compulsory transfer levied on specific categories of wealth once predefined thresholds (nisab) are exceeded. Its redistributive logic is therefore rule-based, predictable, and structurally embedded within the economic system, distinguishing it from conventional tax-transfer mechanisms (Kahf, 1999).

From a theoretical perspective, zakat directly targets idle or accumulated wealth rather than productive activity, thereby minimizing distortions to labor supply and investment incentives. Classical Islamic scholars emphasized that wealth concentration undermines social cohesion and economic balance, a view that aligns with modern macroeconomic concerns regarding

inequality and demand deficiency (Chapra, 2000). By reallocating resources toward designated beneficiary groups—most notably the poor and economically vulnerable—zakat enhances income equality while reinforcing social stability.

In macroeconomic terms, redistribution through zakat affects aggregate demand via differences in marginal propensities to consume across income groups. High-income agents, who are typically net zakat payers, exhibit lower marginal propensities to consume, while zakat recipients tend to allocate a larger share of additional income toward consumption. This structural reallocation supports aggregate demand and reduces volatility associated with income shocks, a mechanism widely recognized in redistribution-focused macroeconomic models (Stiglitz, 2012).

Furthermore, zakat differs fundamentally from debt-financed redistribution prevalent in modern welfare states. Conventional fiscal redistribution often relies on budget deficits and public borrowing, which may generate long-term fiscal sustainability risks and intergenerational burdens. In contrast, zakat operates independently of government debt and interest-based financing, reflecting Islamic economics' emphasis on real-sector linkages and ethical constraints (Siddiqi, 2004). This characteristic enhances the theoretical appeal of zakat as a sustainable redistributive institution within a macroeconomic framework.

The redistributive logic of zakat also extends beyond income smoothing to structural economic balance. By discouraging hoarding and promoting wealth circulation, zakat contributes to broader economic participation and inclusiveness. Modern studies on inequality and growth suggest that excessive concentration of wealth can suppress long-term growth and amplify macroeconomic instability (Piketty, 2014). In this regard, zakat's redistributive mechanism aligns with contemporary concerns regarding inclusive growth while offering a distinct, non-interest-based alternative grounded in Islamic economic principles.

Overall, zakat's redistributive logic provides a coherent theoretical foundation for its incorporation into macroeconomic analysis. By systematically reallocating resources from low-consumption to high-consumption agents without reliance on public debt, zakat establishes the basis for its potential role as a stabilizing mechanism within the broader economic system.

2. Zakat as an Automatic Stabilizer in the Macroeconomic Cycle

Automatic stabilizers play a crucial role in modern macroeconomic theory by dampening economic fluctuations without requiring discretionary policy intervention. In conventional frameworks, progressive taxation and unemployment benefits are commonly cited as key stabilizing instruments, as they moderate disposable income during economic expansions and contractions. Within Islamic economics, zakat performs a comparable stabilizing function, albeit through fundamentally different institutional and ethical foundations.

Zakat operates as a built-in counter-cyclical mechanism due to its direct linkage to wealth accumulation and income generation. During periods of economic expansion, increases in income and asset values expand the zakat base, leading to higher transfers toward eligible recipients. Conversely, during economic downturns, declining wealth and income reduce zakat liabilities while increasing the number of beneficiaries. This automatic adjustment mechanism mirrors the stabilizing logic emphasized in Keynesian and New Keynesian macroeconomic

models, where income-linked transfers help smooth consumption over the business cycle (Blanchard & Johnson, 2017).

From a theoretical standpoint, zakat contributes to macroeconomic stability by stabilizing aggregate demand. As economic conditions deteriorate, zakat transfers support the consumption capacity of vulnerable households, mitigating sharp declines in demand. This effect is particularly significant given the higher marginal propensity to consume among zakat recipients, which enhances the multiplier impact of transfers on overall economic activity (Mankiw, 2019). Unlike discretionary fiscal stimulus, zakat does not suffer from implementation lags or political constraints, thereby strengthening its stabilizing effectiveness.

Another distinctive feature of zakat as an automatic stabilizer is its independence from interest-based public finance. Conventional counter-cyclical policies often rely on deficit spending financed through borrowing, which may exacerbate public debt dynamics and constrain future policy space. Zakat, by contrast, is financed through real wealth transfers rather than credit expansion, aligning with Islamic economics' prohibition of riba and emphasis on financial discipline (Chapra, 2000). This characteristic enhances the long-term sustainability of stabilization efforts, particularly in economies vulnerable to debt-induced crises.

Moreover, zakat's stabilizing role extends beyond short-term demand management to broader economic resilience. By continuously redistributing wealth, zakat reduces structural inequality, which has been identified as a source of macroeconomic instability and financial fragility (Stiglitz, 2012). Persistent inequality can amplify economic shocks by weakening aggregate demand and increasing reliance on credit. Zakat-based redistribution mitigates these risks by strengthening household balance sheets and reducing vulnerability to income shocks.

In summary, zakat exhibits key properties of an automatic stabilizer within a macroeconomic framework. Its rule-based, counter-cyclical nature, combined with its debt-free financing structure, distinguishes it from conventional stabilization tools. These features underscore zakat's theoretical relevance as a mechanism capable of enhancing macroeconomic stability in Islamic and hybrid economic systems.

3. A Stylized Macroeconomic Model incorporatıng Zakat

To formally analyze the macroeconomic implications of zakat-based redistribution, this subsection develops a stylized theoretical model that integrates zakat into a simplified macroeconomic framework with heterogeneous economic agents. The objective of the model is not empirical estimation but conceptual clarification of the transmission channels through which zakat affects income distribution, aggregate demand, and macroeconomic stability.

The economy is assumed to consist of two representative groups: high-income agents, who are net zakat payers, and low-income agents, who are net zakat recipients. Output is determined by aggregate demand, and prices are assumed to be sticky in the short run, consistent with standard Keynesian and New Keynesian assumptions (Blanchard & Johnson, 2017). Income is distributed unevenly between the two groups, reflecting typical patterns observed in real economies.

Zakat is modeled as a proportional levy on eligible wealth and income above a specified threshold (nisab), with the proceeds transferred entirely to the recipient group. Let Y denote total income, Y_H and Y_L represent income shares of high-income and low-income agents respectively, and Z denote aggregate zakat transfers. Disposible income for each group can be expressed as:

$$Y_H^d = Y_H - Z \quad Y_L^d = Y_L + Z$$

Consumption functions differ across groups due to varying marginal propensities to consume. High-income agents exhibit a lower marginal propensity to consume, while low-income agents display a higher marginal propensity to consume, consistent with empirical findings in income distribution literature (Mankiw, 2019). Aggregate consumption is therefore given by:

$$C = c_H Y^d_H + c_L Y^d_L \text{ where } c_L > c_H$$

Substituting the zakat-adjusted disposable incomes into the consumption function demonstrates that an increase in zakat transfers raises aggregate consumption, holding total income constant. This outcome reflects the redistribution of resources toward agents with higher consumption propensities, thereby strengthening aggregate demand. Unlike distortionary taxation, zakat targets accumulated wealth rather than productive effort, minimizing adverse incentive effects on output generation (Kahf, 1999).

From a dynamic perspective, zakat contributes to macroeconomic stability by smoothing consumption over the business cycle. During expansions, rising incomes and asset values increase zakat transfers, which restrain excessive savings and channel resources toward consumption. During downturns, reduced zakat liabilities combined with higher transfer needs help stabilize household incomes, mitigating declines in aggregate demand. This stabilizing mechanism parallels the logic of fiscal multipliers in redistribution-based macroeconomic models (Stiglitz, 2012).

Importantly, the model highlights a fundamental distinction between zakat-based redistribution and conventional fiscal policy. While standard tax-transfer systems often rely on discretionary adjustments and deficit financing, zakat operates automatically and without reliance on public borrowing. This feature reduces the risk of debt accumulation and enhances the long-term sustainability of macroeconomic stabilization efforts, particularly in economies constrained by fiscal capacity (Chapra, 2000).

Overall, the stylized model demonstrates that incorporating zakat into macroeconomic analysis yields clear theoretical insights. By reallocating income toward high-consumption agents through a rule-based and debt-free mechanism, zakat enhances aggregate demand and contributes to economic stability, providing a coherent theoretical foundation for its role in Islamic macroeconomic systems.

4. Zakat, Income Inequality, and Aggregate Demand Stability

Income inequality has emerged as a central concern in contemporary macroeconomic discourse, not only as a social issue but also as a source of macroeconomic instability. A growing body of literature suggests that excessive income and wealth concentration weakens aggregate demand, amplifies financial fragility, and increases the likelihood of economic crises. Within this context, zakat offers a structural mechanism for addressing inequality while simultaneously enhancing macroeconomic stability.

From a theoretical standpoint, inequality affects aggregate demand through differences in consumption behavior across income groups. High-income households tend to allocate a larger share of their income to savings and financial assets, while lower-income households exhibit higher marginal propensities to consume. As income concentration increases, aggregate consumption growth may lag behind output growth, creating demand deficiencies and increasing reliance on credit expansion to sustain economic activity (Stiglitz, 2012; Piketty,

2014). Zakat directly counteracts this mechanism by redistributing income toward households with higher consumption needs.

By systematically transferring resources from wealth holders to eligible recipients, zakat reduces disposable income disparities and strengthens consumption-driven growth. Unlike ad hoc redistribution policies, zakat operates continuously and predictably, thereby limiting the accumulation of structural imbalances. This feature is particularly relevant in economies where inequality-induced demand shortfalls have contributed to prolonged stagnation or financial instability (Blanchard & Johnson, 2017).

Zakat's impact on aggregate demand stability is further reinforced by its focus on wealth rather than labor income. Since zakat is levied primarily on accumulated assets, its redistributive effect does not significantly distort labor market incentives or productive investment decisions. Classical Islamic economic thought emphasizes that wealth circulation, rather than hoarding, is essential for economic vitality, a principle that resonates with modern concerns regarding excessive financialization and underconsumption (Chapra, 2000).

Moreover, zakat-based redistribution may reduce reliance on credit as a substitute for income growth among lower-income households. In conventional systems, stagnant real wages and rising inequality have often been accompanied by increased household borrowing, contributing to financial instability and crisis vulnerability. By enhancing disposable income and consumption capacity through non-debt transfers, zakat reduces the need for leverage-driven consumption smoothing, thereby supporting financial and macroeconomic stability (Siddiqi, 2004).

The theoretical implications of zakat for aggregate demand stability extend beyond short-term cyclical effects. By curbing persistent inequality, zakat fosters more inclusive growth and strengthens the social foundations of economic systems. Contemporary macroeconomic research increasingly recognizes that stable growth trajectories depend on broad-based income distribution and resilient consumption patterns (Mankiw, 2019). In this respect, zakat aligns Islamic economic principles with modern macroeconomic insights, offering a distinct institutional solution to inequality-driven instability.

In summary, zakat addresses income inequality not merely as a distributive objective but as a macroeconomic stabilization strategy. Through its continuous redistribution toward high-consumption households and its avoidance of debt-based financing, zakat contributes to sustained aggregate demand and reduced economic volatility.

Excellent. Below is **Subtopic 5**, the **final subsection** of **RESEARCH AND FINDINGS**, written in a **theoretical macroeconomic framework**, with **APA-style in-text references**, and fully consistent with the structure and arguments developed so far.

5. Zakat, Financial Stability and Crisis Mitigation

Financial instability and recurring economic crises remain persistent challenges within modern economic systems, particularly those characterized by high leverage, speculative activity, and excessive reliance on interest-based finance. Conventional stabilization strategies often focus on monetary easing, bank bailouts, and expansionary fiscal policy, which may alleviate short-term distress but can also reinforce structural vulnerabilities. Within Islamic economics, zakat provides an alternative stabilization mechanism grounded in redistribution, real-sector linkages, and ethical constraints.

Zakat contributes to financial stability by reducing the structural drivers of excessive indebtedness. In conventional economies, income inequality and stagnant household incomes have frequently been offset through increased borrowing, leading to fragile balance sheets and heightened systemic risk. By enhancing disposable income among lower-income households through non-debt transfers, zakat reduces dependence on credit for consumption smoothing, thereby limiting leverage accumulation across the financial system (Stiglitz, 2012).

Moreover, zakat discourages wealth hoarding and speculative accumulation by imposing a recurring obligation on idle assets. This feature incentivizes productive investment and the circulation of capital toward real economic activities. Islamic economic theory emphasizes that financial transactions should be closely linked to real assets and risk-sharing arrangements, a principle that contrasts sharply with debt-driven financialization observed in many modern economies (Chapra, 2000; Siddiqi, 2004). By promoting asset circulation and productive deployment of wealth, zakat strengthens the resilience of the financial system.

From a crisis-mitigation perspective, zakat functions as a decentralized and automatic support mechanism during periods of economic distress. Unlike emergency fiscal packages that require legislative approval and substantial borrowing, zakat transfers are continuously available and immediately directed toward vulnerable populations. This rapid response capacity enhances social and economic resilience during downturns, reducing the depth and duration of recessions (Blanchard & Johnson, 2017).

Zakat also complements broader Islamic financial principles that emphasize risk-sharing over risk transfer. When combined with profit-and-loss sharing instruments, zakat contributes to a financial architecture that distributes risks more evenly across economic agents. Such arrangements reduce systemic concentration of risk and enhance shock absorption, a feature increasingly recognized as essential for financial stability in post-crisis macroeconomic analysis (Mankiw, 2019).

Furthermore, zakat's institutional design aligns with contemporary debates on macroprudential regulation. By addressing inequality, leverage, and speculative behavior at their structural roots, zakat offers a preventive approach to financial instability rather than a reactive one. Modern macroeconomic literature increasingly acknowledges that crisis prevention requires institutional reforms targeting income distribution and financial behavior, not merely ex post stabilization tools (Piketty, 2014).

In sum, zakat enhances financial stability through multiple interconnected channels: reducing inequality-driven borrowing, discouraging speculative wealth accumulation, supporting real-sector investment, and providing automatic crisis relief. These characteristics position zakat as a theoretically robust component of a stability-oriented macroeconomic framework, particularly within Islamic and hybrid financial systems.

CONCLUSION

This article has examined zakat as a redistributive and stabilizing institution within a theoretical macroeconomic framework, highlighting its relevance for income distribution, aggregate demand management, and economic stability. While conventional macroeconomic policy relies primarily on taxation, public expenditure, and monetary interventions, the analysis demonstrates that zakat represents a structurally distinct mechanism capable of addressing similar objectives through rule-based, ethical, and non-debt-financed means.

The findings suggest that zakat performs a dual macroeconomic function. First, as a redistributive institution, zakat systematically reallocates resources from economic agents with lower marginal propensities to consume toward those with higher consumption needs. This mechanism strengthens aggregate demand, mitigates inequality-driven demand deficiencies, and supports more inclusive growth. Unlike discretionary fiscal redistribution, zakat operates continuously and predictably, reducing policy uncertainty and implementation delays.

Second, zakat exhibits key characteristics of an automatic stabilizer. Its linkage to wealth accumulation and income generation allows it to adjust counter-cyclically over the business cycle, providing income support during downturns and moderating excessive accumulation during expansions. By functioning independently of interest-based public borrowing, zakat avoids the fiscal sustainability risks often associated with debt-financed stabilization policies. This feature is particularly significant for economies facing constraints related to public debt, financial fragility, or limited fiscal capacity.

The theoretical analysis further indicates that zakat contributes to financial stability by addressing structural sources of systemic risk. By reducing inequality-driven reliance on credit, discouraging hoarding and speculative accumulation, and promoting wealth circulation toward the real economy, zakat enhances economic resilience and crisis-mitigation capacity. When embedded within a broader Islamic financial framework emphasizing risk-sharing and real-sector linkages, zakat strengthens the foundations of a stability-oriented macroeconomic system.

From a policy perspective, the findings underscore the potential relevance of zakat not only for Islamic economies but also for hybrid systems seeking alternative or complementary redistributive mechanisms. Institutionalizing transparent and well-governed zakat systems may enhance the effectiveness of fiscal policy, improve social protection, and contribute to long-term macroeconomic stability. However, realizing these benefits depends on effective governance, proper targeting of beneficiaries, and integration with existing economic institutions.

Finally, this study contributes to the literature by positioning zakat within formal macroeconomic reasoning rather than treating it solely as a normative or micro-level institution. While the analysis is theoretical in nature, it establishes a conceptual foundation for future empirical research. Further studies could explore the quantitative macroeconomic effects of zakat, its interaction with monetary policy, and its role in different institutional and developmental contexts.

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NANO-CLIMATE SCALE URBAN RESILIENCE: THE CASE OF BURSA PROVINCE

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Abstract

In cities where people, infrastructure, and economic assets are concentrated, climate change significantly increases hazards due to rising heat, water, and health demands. Heat exposure, heat-related mortality, labor productivity losses, and energy demand are all increased by rising temperatures, more frequent heatwaves, and the urban heat island effect. These effects are distributed unevenly across neighborhoods based on variables like land cover, building density, housing quality, and access to cooling and shading options. Urban floods also increase the danger of water-borne diseases, financial losses, and long-term recovery expenses. Increased heavy rainfall and storm effects further increase the likelihood of urban floods, which interrupt transportation, energy, and vital infrastructure. Therefore, coordinated adaptation strategies that proactively lower risks, guarantee service continuity, and include social vulnerabilities should be used to address urban resilience in addition to the ability to recover from catastrophes. This approach constitutes a core component of sustainable urbanization by promoting the efficient use of environmental resources, reducing economic losses, and advancing climate justice. The nano-climate method emphasizes how the temperature–humidity balance is shaped by small-scale spatial elements that directly impact heat stress, air quality, and energy consumption. These elements include building insulation, roadway design, ground materials, plant cover, and water surfaces. According to this framework, actions like decreasing impervious surfaces, increasing the number of trees planted for shade, creating blue-green infrastructure, employing reflective isolation materials, and putting flood-adaptive design into practice enhance climate adaptation while also producing co-benefits for sustainability and quality of life. Using high-resolution (1×1 km) climatic data and a GIS-based framework, excessive heat and extreme precipitation hazards were spatially investigated in the Bursa Province case study. The generated thematic maps showed significant variations in hazard levels between districts. Overall, the uniformity of data inputs and analytical procedures makes the suggested approach transportable to other cities. Additionally, by supporting neighborhood-scale, risk-based planning, it offers a solid foundation for creating equitable, practical, and prioritized adaptation plans.

Keywords: climate hazars, sustainable cities, adaptation, high resulation.

NANO İKLİM ÖLÇEĞİNDE KENTSEL DİRENÇLİLİK: BURSA İLİ ÖRNEĞİ

Özet

İklim değişikliği, insanların, altyapının ve ekonomik varlıkların yoğunlaştığı kentlerde ısı, su ve sağlık baskılarını artırarak riskleri belirgin biçimde şiddetlendirmektedir. Artan sıcaklıklar ve daha sık gözlenen sıcak hava dalgaları, kentsel ısı adası etkisiyle birleştiğinde ısıya maruziyeti, sıcaklığa bağlı ölümleri, iş gücü verimlilik kayıplarını ve enerji talebini yükseltmektedir. Bu etkiler ise arazi örtüsü, yapı yoğunluğu, konut kalitesi, gölgeleme ve soğutma olanaklarına erişim gibi etmenlere bağlı olarak kent içinde mahalleler arasında eşitsiz biçimde dağılmaktadır. Öte yandan şiddetli yağışların artması ve fırtına etkilerinin güçlenmesi, kentsel taşkın riskini artırarak ulaşım, enerji ve kritik altyapıda aksamalara yol açmakta; su baskınlarıyla birlikte su kaynaklı hastalık risklerini, ekonomik kayıpları ve uzun vadeli iyileşme maliyetlerini artırmaktadır. Bu nedenle kentsel dirençlilik, yalnızca afet sonrası toparlanma kapasitesi olarak değil, riskleri önleyici biçimde azaltan, hizmet sürekliliğini güvence altına alan ve sosyal kırılganlıkları dikkate alan bütünleşik uyum yaklaşımlarıyla ele alınmalıdır. Söz konusu yaklaşım çevresel kaynakların verimli kullanımını, ekonomik kayıpların azaltılmasını ve iklim adaletini destekleyen sürdürülebilir kentleşmenin de temel bir bileşenidir. Nano iklim yaklaşımı, bina izolasyonu, sokak geometrisi, zemin malzemeleri, bitki örtüsü ve su yüzeyleri gibi küçük ölçekli mekânsal bileşenlerin sıcaklık–nem dengesini belirleyerek ısı stresi, hava kalitesi ve enerji tüketimi üzerinde doğrudan etkili olduğunu göstermektedir. Bu çerçevede geçirimsiz yüzeylerin azaltılması, gölgeleme sağlayan ağaçlandırma, mavi-yeşil altyapı, yansıtıcı izolasyon malzemeleri ve taşkınla uyumlu tasarım uygulamaları; hem iklim değişikliğine uyumu güçlendirmekte hem de yaşam kalitesi ve sürdürülebilir kentler oluşturmaktadır. Çalışma kapsamında Bursa ili örneğinde coğrafi bilgi sistemleri kullanılarak yüksek çözünürlüklü (1×1 km) iklim verileri ile aşırı sıcaklık ve aşırı yağış tehlikeleri mekânsal olarak analiz edilmiş, üretilen tematik haritalar tehlikelerin ilçeler arasında belirgin biçimde farklılaştığını ortaya koymuştur. Sonuç olarak önerilen yöntem, veri ve analiz adımlarının standartlaştırılması sayesinde farklı kentlere uyarlanabilir olup, mahalle ölçeğinde risk temelli planlamayı destekleyerek adil, uygulanabilir ve önceliklendirilmiş uyum politikalarının geliştirilmesine güçlü bir temel sunmaktadır.

Anahtar Kelimeler: iklim tehlikeleri, sürdürülebilir kentler, uyum, yüksek çözünürlük.

ANALYTICAL PERFORMANCE EVALUATION of A XANTHENE-BASED CHEMODOSIMETER FOR MERCURY DETECTION in WATER SAMPLES

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Abstract

The metal ions in water is critical for human metabolism; deficiency or excess can lead to serious disorders. Mercury, a particularly neurotoxic metal, accumulates in the ecosystem and causes health problems such as immune system failure (Voutsadaki et al., 2010). Traditional detection methods (such as ICP-MS and AAS) require expensive equipment and complex pretreatment, while optical techniques offer real-time and accurate analysis. Colorimetric sensors such as triazine, coumarin, quinolone, rhodamine, and chromenylium–cyanine have been designed for detection of the transition metal ions in aqueous media (Aksuer et al., 2011 Du et al., 2017; Voutsadaki et al., 2010). In this study, a new Schiff base-based chemodosimeter was designed through the condensation reaction of rhodamine B hydrazide and 5-chloroisatin compounds. The structure of the synthesized chemodosimeter was characterized using spectroscopic techniques such as IR, UV-vis, LC-MSMS, ^{1}H NMR, and ^{13}C NMR. FT-IR spectra of chemodosimeter give a characteristic peak at 3326, 3198, and 1657 cm^{-1}, which are assigned to N–H stretching and C=O stretching bands and the characteristic ^{13}C NMR signals of spirocycle closed–form were observed at 166.175 and 65.957 ppm. The data obtained confirm the successful formation of the designed spirocyclic xanthene structure. The analytical performance of the chemodosimeter was tested against some metal ions, such as Na^{+}, K^{+}, Mg^{2+}, Ca^{2+}, Mn^{2+}, Fe^{3+}, Co^{2+}, Ni^{2+}, Cu^{2+}, Zn^{2+}, Al^{3+}, Cd^{2+}, and Pb^{2+}, to obtain sensitivity and selectivity parameters. The experiments revealed that the chemodosimeter exhibits a distinct color change from colorless to pink only in the presence of the Hg^{2+} ion. Other ions did not cause a significant change in the sensor's optical response, proving the sensor's high selectivity towards mercury. When evaluating the analytical signal mechanism of the chemodosimeter compound, the spirocycle opening reaction occurring with the addition of Hg^{2+} ions and the subsequent hydrolysis reaction were identified. Mass spectrometry analyses have shown that rhodamine B methyl ester is formed at the process. The detection limit of the chemodosimeter for mercury ions has been calculated as 80 nM. This value demonstrates that the sensor is sensitive enough to detect trace amounts of mercury in water samples.

Keywords: Xanthene, mercury, chemodosimeter.

AN ANALYSIS OF THE ENVIRONMENTAL COSTS OF ANTALYA METROPOLITAN MUNICIPALITY FROM AN ENVIRONMENTAL ACCOUNTING PERSPECTIVE

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Abstract

This study aims to analyze the environmental cost structure of Antalya Metropolitan Municipality from an environmental accounting perspective by using activity reports and budget realizations covering the period 2020–2024. A descriptive analysis method is employed, and environment-related expenditure items are identified and examined in terms of their magnitude, distribution by cost types, and changes over time. The findings indicate that environmental expenditures increased significantly in absolute terms throughout the period, while their share in total municipal expenditures remained relatively stable at around 27 percent. Environmental costs are found to be largely concentrated in waste disposal services, construction and demolition waste management, and vector control activities, reflecting a strong focus on disposal-oriented and public health-related services. In contrast, expenditures allocated to environmental monitoring, inspection, and planning activities remain limited. This result suggests that environmental management practices are predominantly reactive rather than preventive. The study concludes that strengthening preventive and monitoring-oriented environmental expenditures and improving the classification and reporting of environmental costs within municipal accounting systems would enhance the effectiveness of environmental accounting as a strategic decision-support tool in local government.

Keywords: Environmental Accounting, Environmental Costs, Local Governments, Municipal Budget, Sustainability.

ÇEVRE MUHASEBESİ PERSPEKTİFİNDEN ANTALYA BÜYÜKŞEHİR BELEDİYESİ'NİN ÇEVRESEL MALİYETLERİNİN ANALİZİ

Özet

Bu çalışma, çevre muhasebesi perspektifinden Antalya Büyükşehir Belediyesi'nin 2020–2024 dönemine ait faaliyet raporları ve bütçe gerçekleşmeleri çerçevesinde çevresel maliyet yapısını incelemeyi amaçlamaktadır. Araştırmada betimsel analiz yöntemi kullanılmış, belediyenin çevreyle ilişkili harcama kalemleri belirlenerek bu kalemlerin büyüklüğü, türlere göre dağılımı ve zaman içindeki değişimi değerlendirilmiştir. Bulgular, çevresel maliyetlerin mutlak tutar olarak dönem boyunca önemli ölçüde arttığını, buna karşılık toplam giderler içindeki payının yaklaşık yüzde 27 düzeyinde istikrarlı bir seyir izlediğini göstermektedir. Çevresel

harcamaların ağırlıklı olarak katı atık bertarafı, hafriyat ve inşaat-yıkıntı atıkları ile vektörel mücadele gibi bertaraf ve halk sağlığı odaklı hizmetlerde yoğunlaştığı tespit edilmiştir. Buna karşılık çevresel izleme, denetim ve planlama faaliyetlerine ayrılan kaynakların görece sınırlı kaldığı belirlenmiştir. Bu durum, belediyenin çevre yönetiminde büyük ölçüde sonuç odaklı bir yaklaşım benimsediğini, kaynağında önleme ve izleme boyutunun ise zayıf kaldığını göstermektedir. Çalışma sonuçları, yerel yönetimlerde çevre muhasebesinin daha etkin bir karar destek aracı haline getirilebilmesi için çevresel maliyetlerin ayrıntılı sınıflandırılması, izleme ve önleme faaliyetlerinin güçlendirilmesi gerektiğine işaret etmektedir.

Anahtar Kelimeler: Çevre Muhasebesi, Çevresel Maliyetler, Yerel Yönetimler, Belediye Bütçesi, Sürdürülebilirlik.

GİRİŞ

Günümüzde çevre sorunları, yalnızca doğaya ilişkin bir tartışma konusu olmaktan çıkmış, ulusal ekonomi politikaları ile birlikte yerel düzeydeki mali ve idari karar alma süreçlerini şekillendiren stratejik bir alan haline gelmiştir. İklim değişikliğinin etkileri, doğal kaynakların hızla tükenmesi ve hava, su, toprak kirliliği gibi çevresel tehditler, özellikle altyapı yatırımları, atık yönetimi, su ve kanalizasyon hizmetleri, toplu taşıma ve yeşil alan düzenlemeleri gibi görevleri üstlenen büyükşehir belediyeleri üzerinde kayda değer bir mali baskı oluşturmaktadır. Çevreyle ilgili belediye faaliyetlerinin planlanmasında kullanılan mali bilginin kapsamını ve ayrıntı düzeyini kritik hale getirmektedir. Bu nedenle muhasebe bilgi sistemi, belediyelerin çevresel etkilerini ve bu etkilere bağlı olarak katlandıkları maliyetleri düzenli, karşılaştırılabilir ve karar almaya elverişli bir biçimde kaydeden, sınıflandıran ve raporlayan temel bir yönetim aracı olarak öne çıkmaktadır.

Çevre muhasebesi, çevreyle ilişkili maliyet, harcama ve olası yükümlülüklerin tanımlanmasını, uygun hesaplarda izlenmesini ve karar süreçlerinde kullanılabilecek biçimde raporlanmasını amaçlayan bir yaklaşım olup, sürdürülebilir mali yönetim ve çevre odaklı yerel yönetişim anlayışının önemli bileşenlerinden birini oluşturmaktadır. Bu kapsamda, büyükşehir belediyelerinin bütçe yapıları, faaliyet raporları ve mali tablolarında çevresel maliyetlerin hangi ölçüde ve nasıl görünür kılındığının analiz edilmesi, çevre muhasebesinin yerel yönetim pratiğine entegrasyon düzeyini değerlendirmek açısından önem taşımaktadır. Antalya Büyükşehir Belediyesi, turizme dayalı ekonomik yapı, hızlı kentleşme süreci, yoğun nüfus hareketliliği ve doğal çevre üzerindeki artan baskıların birlikte gözlendiği bir kentsel bağlamda faaliyet göstermesi nedeniyle, çevresel maliyetlerin analizine yönelik önemli ve temsil gücü yüksek bir örnek teşkil etmektedir.

5393 sayılı Belediye Kanununun 14. Maddesinin (a) bendine göre: “İmar, su ve kanalizasyon, ulaşım gibi kentsel alt yapı; coğrafî ve kent bilgi sistemleri; çevre ve çevre sağlığı, temizlik ve katı atık; zabıta, itfaiye, acil yardım, kurtarma ve ambulans; şehir içi trafik; defin ve mezarlıklar; ağaçlandırma, park ve yeşil alanlar; konut; kültür ve sanat, turizm ve tanıtım, gençlik ve spor; sosyal hizmet ve yardım, nikâh, meslek ve beceri kazandırma; ekonomi ve ticaretin geliştirilmesi hizmetlerini yapar veya yaptırır” hükmü bulunmaktadır.

5216 sayılı Büyükşehir Belediyesi Kanununun 7. maddesinin (i) bendine göre: “Sürdürülebilir kalkınma ilkesine uygun olarak çevrenin, tarım alanlarının ve su havzalarının korunmasını sağlamak; ağaçlandırma yapmak; gayri sıhhî işyerlerini, eğlence yerlerini, halk sağlığına ve çevreye etkisi olan diğer işyerlerini kentin belirli yerlerinde toplamak; inşaat malzemeleri, hurda depolama alanları ve satış yerlerini, hafriyat toprağı, moloz, kum ve çakıl depolama

alanlarını, odun ve kömür satış ve depolama sahalarını belirlemek, bunların taşınmasında çevre kirliliğine meydan vermeyecek tedbirler almak; büyükşehir katı atık yönetim plânını yapmak, yaptırmak; katı atıkların kaynakta toplanması ve aktarma istasyonuna kadar taşınması hariç katı atıkların ve hafriyatın yeniden değerlendirilmesi, depolanması ve bertaraf edilmesine ilişkin hizmetleri yerine getirmek, bu amaçla tesisler kurmak, kurdurmak, işletmek veya işlettirmek; sanayi ve tıbbî atıklara ilişkin hizmetleri yürütmek, bunun için gerekli tesisleri kurmak, kurdurmak, işletmek veya işlettirmek; deniz araçlarının atıklarını toplamak, toplatmak, arıtmak ve bununla ilgili gerekli düzenlemeleri yapmak" hükmü yer almaktadır.

Çalışmada, belediyenin bütçe ve ilgili mali tablolarında yer alan çevreyle ilişkili harcama kalemleri belirlenmekte, bu kalemlerin büyüklüğü, bileşimi ve zaman içindeki değişimi incelenmekte ve elde edilen bulgular, çevre muhasebesinin yerel yönetim bağlamındaki işlevi açısından tartışılmaktadır. Çevre muhasebesi çerçevesinde Antalya Büyükşehir Belediyesinin çevresel maliyetlerinin analiz edilmesi amaçlanmaktadır. Böylece, Antalya Büyükşehir Belediyesinde çevresel maliyetlerin ne ölçüde izlenebilir ve yönetilebilir kılındığı ortaya konulmakta, çevre muhasebesinin belediye mali yönetimine entegrasyonunu güçlendirmeye yönelik politika ve uygulama önerileri geliştirilmektedir.

1. Literatür Taraması

Çevresel sorunların giderek arttığı günümüzde, ekonomik faaliyetlerin çevre üzerindeki etkilerinin ölçülmesi ve raporlanması hem özel sektör hem de kamu yönetimi açısından önemli bir gereklilik haline gelmiştir. Bu kapsamda çevre muhasebesi, faaliyetler sonucu ortaya çıkan çevresel etkilerin mali boyutlarıyla ele alınmasını sağlayan ve karar alma süreçlerini destekleyen bir bilgi sistemi olarak öne çıkmaktadır. Literatürde çevre muhasebesi çoğunlukla işletmelerin çevresel sorumlulukları ve bunların finansal tablolara yansıtılması çerçevesinde incelenirken, kamu sektörü ve özellikle yerel yönetimler düzeyindeki uygulamalara ilişkin çalışmaların sınırlı olduğu görülmektedir. Oysa belediyeler, çevresel hizmetlerin sunumu ve kentsel çevre sorunlarının yönetimi kapsamında önemli çevresel maliyetlere katlanmaktadır. Bu nedenle belediyelerin çevresel maliyetlerinin analiz edilmesi, kaynak tahsisinin etkinliği ve sürdürülebilir kentsel yönetim açısından kritik öneme sahiptir. Özellikle hızlı kentleşme ve turizm baskısının yoğun olduğu büyükşehirlerde, çevre muhasebesinin yerel yönetimler bağlamında ele alınması daha da gerekli hale gelmiştir.

Shields, Beloff ve Heller (1994), kimya ve petrol sektörlerinde faaliyet gösteren işletmelerde çevresel maliyetlerin tanımlanması ve karşılaştırılmasına odaklanmıştır. Araştırma, çevresel maliyetlerin geleneksel maliyet sistemleri içerisinde çoğu zaman gizli kaldığını ve bu durumun hem maliyet kontrolünü hem de çevresel performans değerlendirmesini zorlaştırdığını göstermektedir. Çalışma, çevresel maliyetlerin ayrı bir izleme ve raporlama sistemiyle ele alınmasını dile getirmiştir.

White ve Savage (1995), çevresel muhasebe ile sermaye bütçeleme kararları arasındaki ilişkiyi analiz etmiştir. Çalışmada, yatırım projelerinin değerlendirilmesinde çevresel maliyet ve faydaların dikkate alınmasının, uzun vadeli finansal performansı ve sürdürülebilirliği olumlu yönde etkilediği sonucuna ulaşılmıştır.

Mobus (1997), petrol ve gaz rafinerilerinde çevresel kirlilik performansı ile ekonomik performans arasındaki ilişkiyi incelemiştir. Çevresel performansı yüksek olan işletmelerin uzun vadede daha istikrarlı ekonomik sonuçlar elde ettiği sonucuna varılmıştır.

Walden ve Schwartz (1997), çevre muhasebesi alanında gerçekleştirdikleri çalışmada, işletmelerin çevresel açıklama düzeylerinde 1988–1989 ve 1989–1990 dönemleri arasında

istatistiksel olarak anlamlı artışlar tespit edilmiştir. Elde edilen bulgular, firmalar arasında çevresel bilgilendirme uygulamalarının homojen olmadığını, aksine belirgin farklılıklar gösterdiğini ortaya koymaktadır. Bu durum, işletmelerin çevresel muhasebe yaklaşımlarını hangi faktörlere bağlı olarak farklılaştırdıkları sorusunu gündeme getirmektedir.

Bavaria (1999), çevresel muhasebe standartlarının önemine odaklanmış ve standartlaşmanın, çevresel bilgilerin güvenilirliğini artırdığını savunmuştur. Çalışma, çevresel muhasebe uygulamalarında ortak bir çerçevenin bulunmamasının, hem kullanıcılar hem de karar vericiler açısından bilgi asimetrisine yol açtığını ortaya koymuştur.

Bell ve Lehman (2000), çevresel muhasebe alanındaki teorik ve uygulamaya dönük gelişmeleri ele almış ve çevresel muhasebenin muhasebe disiplininin sınırlarını genişlettiğini ileri sürmüştür. Çalışmada, çevresel muhasebenin yalnızca teknik bir raporlama aracı değil, aynı zamanda işletmelerin toplumsal sorumluluklarını görünür kılan bir hesap verebilirlik mekanizması olduğu vurgulanmıştır.

Alagöz ve Yılmaz (2001), çevre muhasebesi sisteminin etkin biçimde kurulması ve geliştirilmesi, çevre yönetim sistemleri kapsamında üretilen çevresel maliyet bilgilerinin sistematik olarak elde edilmesine ve bu bilgilerin analitik yöntemlerle değerlendirilmesine bağlı olduğu belirtilmiştir.

Wilmshurst ve Frost (2001), çevresel raporlama ve çevre yönetim sistemleri arasındaki ilişkiyi incelemiş ve çevresel muhasebe bilgilerinin üretilmesi, izlenmesi ve raporlanmasında muhasebe birimi ile muhasebecilerin kritik bir rol üstlendiğini ortaya koymuştur. Çalışmada, muhasebenin yalnızca finansal raporlama aracı olmadığı, aynı zamanda çevresel performansın yönetilmesini destekleyen stratejik bir bilgi sistemi işlevi gördüğü vurgulanmıştır.

Rogers ve Kristof (2003), çalışmasında çevresel muhasebe uygulamalarının operasyonel süreçler ve ürün maliyetleri üzerindeki etkilerini incelemiştir. Çevresel maliyetlerin sistematik biçimde izlenmesi ve analiz edilmesinin, atık azaltımı, kaynak verimliliği ve maliyet düşürme açısından işletmelere önemli avantajlar sağladığı sonucuna varılmıştır.

İncelenen literatür, çevre muhasebesi ve çevresel maliyetler konusunun ağırlıklı olarak özel sektör odaklı ele alındığını, yerel yönetimler özelinde ise çevresel faaliyetlerin mali boyutunu ayrıntılı biçimde inceleyen çalışmaların sınırlı kaldığını göstermektedir. Özellikle belediyelerin mali tabloları ve faaliyet raporları üzerinden çevresel maliyetlerin sistematik olarak analiz edildiği ampirik çalışmaların literatürde yeterince yer almadığı görülmektedir. Bu çalışma, belediyelerin çevresel hizmetlerini çevre muhasebesi perspektifiyle ele alarak söz konusu boşluğa katkı sunmayı amaçlamaktadır.

2. Çevre Muhasebesi Tarihsel Süreci

Çevre muhasebesine ilişkin ilk girişimlerin, birbirinden bağımsız olarak hareket eden bazı Avrupa ülkelerinde 1970'lerin sonlarına uzandığı görülmektedir. Norveç'te 1978 yılında Çevre Bakanlığı ile Norveç İstatistik Kurumunun, doğal kaynakların ve çevrenin daha etkin yönetilmesine hizmet edecek bir araç olarak doğal kaynak hesaplarını geliştirmeye başladığı bilinmektedir. Benzer biçimde Danimarka ve Fransa'da çevre muhasebesi alanında çeşitli çalışmalar yürütülmüş, 1973 petrol krizi ile enerji akımlarının ölçülmesi ve izlenmesine yönelik hesaplama girişimleri hızlanmıştır. 1980'li yıllarda Fransa'nın bu alana ilişkin muhasebe sistemini daha da geliştirdiği ifade edilmektedir. Bütüncül bir bakış açısıyla ele alındığında, bahsedilen öncü çabaların ortak paydasının doğal kaynak kullanımına ilişkin

fiziksel göstergelerin ortaya konulmasına odaklanmak olduğu anlaşılmaktadır (Edens, 2013: 16).

Çevre muhasebesinin ortaya çıkışı, birkaç Avrupa ülkesinin 1970'lerin sonlarında birbirinden bağımsız biçimde yürüttükleri çalışmalara dayandırılmaktadır (Hecht, 2005: 9). 1978 yılında Norveç Çevre Bakanlığı, doğal kaynakların ve çevrenin daha etkin yönetilmesine katkı sağlayacak bir araç olarak doğal kaynak hesaplarının geliştirilmesi için Norveç İstatistik Kurumunu görevlendirmiştir (Alfsen, 1996: 5). Bu girişimin arka planında, hidroelektrik üretimindeki hızlı artış, balık stoklarının aşırı kullanımı ve önemli petrol ile doğal gaz rezervlerinin keşfi sonucunda güçlenen çevresel kaygılar bulunmaktadır (Edens, 2013: 16).

Danimarka'da 1975 yılından itibaren enerji akım hesapları yapılmaya başlanmış, 1973 petrol krizi sonrasında enerji tasarrufu ve enerji verimliliğinin geliştirilmesine yönelik ilginin artması bu çalışmaları teşvik etmiştir. 1980'li yıllarda ise Fransa, ülkenin "doğal mirasının" durumunu ve zaman içindeki değişimini hem nicel hem nitel açıdan değerlendirmeye olanak sağlayan bir muhasebe sistemi geliştirmiştir (Vanoli, 2005: 344).

2012 tarihli Çevresel Ekonomik Muhasebe Sistemi, SEEA Merkezi Çerçeve, Birleşmiş Milletler İstatistik Komisyonu tarafından Mart 2012'de yapılan kırk üçüncü toplantıda uluslararası standart olarak kabul edilmiştir. Bu karar ile SEEA Merkezi Çerçeve, çevresel ekonomik muhasebe alanında resmi olarak tanınan ilk uluslararası istatistiksel standart haline gelmiştir. SEEA Merkezi Çerçeve, bir ülkenin ekonomisi ile doğal çevresi arasındaki ilişkiyi sistemli biçimde incelemek için geliştirilmiş çok amaçlı bir kavramsal yapıdır. Bu yapı sayesinde, su, toprak, orman, enerji kaynakları gibi çevresel varlıkların toplam düzeyi ve zaman içindeki artış ya da azalışları izlenebilmekte, bu veriler ekonomik faaliyetlerle birlikte değerlendirilebilmektedir (seea.un.org, 2012).

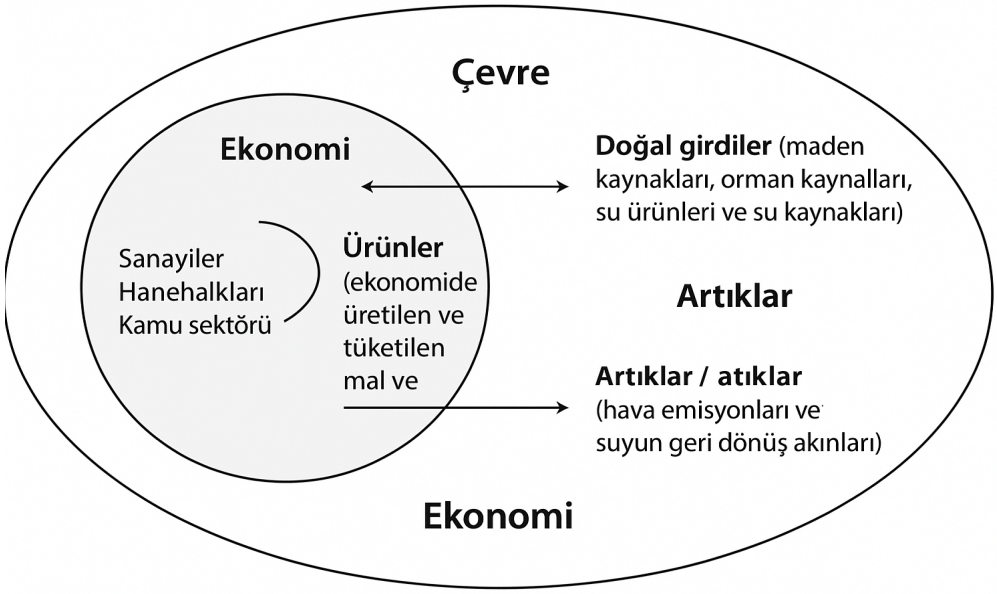
Tablo 1. Çevre Muhasebesi İle İlgili Başlıca Uluslararası Gelişmelerin Tarihsel Çizelgesi

Yıl	Gelişme
1970'li yıllar	Norveç ve Danimarka çevre muhasebesi çalışmalarına başlar
1980'li yıllar	Hollanda ve Fransa çevre muhasebesine çalışmalarına başlar
1983-1988	Dünya Bankası ve UNEP sponsorluğunda çalıştaylar düzenlenir
1989	Entegre çevre muhasebesine ilişkin plan IARIW'un 21. Oturumunda sunulur
1989	IARIW'un 21. Oturumunda entegre çevre muhasebesi çerçevesi oluşturuldu
1989-1992	Meksika ve Papua Yeni Gine'de Dünya Bankası / UNSTAT tarafından pilot projeler başlatılır
1991	IARIW çevre muhasebesi konulu özel konferans düzenlenir
1992	Rio'da 'Dünya Zirvesi'; Gündem 21'in 8. Bölümünde çevre muhasebesi resmen tanıtılır
1993	SEEA 1993 yayımlanır (BM, 1993)
1994	Londra Çevre Muhasebesi Grubu kurulur
1994	AB yeşil muhasebe stratejisini benimser

1994	ABD çevre muhasebe faaliyetleri muhalefet nedeniyle durdurulur
1995	Eurostat ve Hollanda NAMEA konsepti üzerine ortak bir çalıştay düzenler
1997	Filipin Ekonomik Çevre ve Tabii Kaynaklar Muhasebesini kurumsallaştırır
2000	SEEA uygulama kılavuzu yayımlanır
2000	Meksika Ekolojik Dengeler ve Çevre Koruma Genel Kanunu, ekolojik net yurt içi hasılanın hesaplanmasını zorunlu kılar
2003	SEEA-2003, beyaz kitap olarak yayımlanır
2003	Çevre Muhasebesi AB Stratejisi onaylandı
2005	BM İstatistik Komisyonu tarafından UNCEEA kurulur
2006	Çin, 'yeşil GSYİH' verilerini yayımlar
2008	AB çevre muhasebesi stratejisini revize edilir
2011	Çevre muhasebesi için AB hukuki çerçevesi kabul edilir
2011	Hollanda'da "Yeşil Büyüme" raporu OECD Genel Sekreteri tarafından övgüyle karşılanır
2011	Hindistan Ulusal Hesaplarının yeşillendirilmesine ilişkin uzman grubu kurulur
2012	BM İstatistik Komisyonu tarafından SEEA Merkezi Çerçevesi uluslararası istatistik standardı olarak kabul edilir
2013	SEEA Deneysel Ekosistem Muhasebesi BM İstatistik Komisyonuna sunulur

Kaynak: Edens, 2013: 18

Çevresel hesaplar, ulusal hesap sistemi ile uyumlu biçimde kurgulanan kavramsal bir çerçeve ve buna bağlı olarak tablolardan oluşan, çok amaçlı bir veri altyapısı şeklinde tanımlanır. Ekonomi ile doğal çevre arasındaki karşılıklı ilişkileri sistematik ve karşılaştırılabilir bir biçimde göstermeyi amaçlar. Örneğin, sanayi tesisleri ve hanehalkı tarafından üretilen kirlilik miktarını ortaya koyar, bu bilgiyi söz konusu sektörlerin istihdam düzeyi ve ürettikleri katma değer ile ya da kirliliği önlemek için yaptıkları harcamalar ile karşılaştırmaya imkan tanır. Bu çerçevede politika yapıcılar, ekonomik etkinlik düzeyi ile çevresel etkiyi birlikte gözeterek hangi sektörlerde ve hangi politika araçlarının daha uygun olacağını belirlemede, söz konusu hesaplamalardan elde edilen bilgileri temel alabilmektedirler (ec.europa.eu, 2012).



Şekil 1. Ekonomi ve çevre arasındaki doğal girdi, ürün ve artık ilişkisi
Kaynak: ec.europa.eu, 2012

Çevresel hesaplar, çevreye ilişkin verilerin, göstergelerin ve bunlara dayalı çözümlemelerin bir arada ele alınabildiği bütünleşik bir yapı sunar. Çevre verilerinin ulusal hesap sistemi içinde izlenmesi, üretilen göstergelerin kendi aralarında daha tutarlı olmasını sağlar, ayrıca bu göstergelerin sürdürülebilir kalkınmanın sosyal boyutları ve yeşil büyümenin istihdamla ilgili yönleri ile uyumlu biçimde değerlendirilmesine imkan sunmaktadır (ec.europa.eu, 2012).

3. Çevre Muhasebesinin Tanımı ve Kapsamı

Çevre muhasebesi, kısaca çevreyle ilişkili mali nitelikteki işlemlerin muhasebe kayıtlarına alınması ve finansal tablolarda raporlanması olarak değerlendirilmektedir (Haftacı ve Soylu, 2008; Apalı ve Bozcu, 2018: 47). Daha geniş bir bakış açısıyla ise çevre muhasebesi, ekonomi ile çevre arasındaki etkileşim sonucunda ortaya çıkan nitel ve nicel çevresel olumsuzlukların belirlenmesi, bu olumsuzlukların fiziksel ve parasal karşılıklarının hesaplanması ve zaman içinde izlenmesine odaklanan bir yaklaşımdır (Gönen ve Güven, 2014: 56; Apalı ve Bozcu, 2018: 47).

Çevre muhasebesi, işletmelerin doğrudan sorumlu tutulmadıkları ya da geleneksel mali tablolarda yer vermedikleri çevresel nitelikli maliyetleri, kendi tercihleri doğrultusunda sistemli biçimde kaydetmeleri, sınıflandırmaları, özetleyip raporlamaları ve bu bilgileri paydaşların kullanımına sunmaları üzerine kurulu bir bilgi sistemidir. Çevresel maliyetlerin türlerinin ve kaynaklarının ortaya konulması, çevreye ilişkin risk ve harcamaların belirlenerek muhasebe kayıtlarına aktarılması ve şeffaf bir biçimde raporlanması, çevre muhasebesinin temel öncelikleri arasında yer almaktadır (Aslan, 2017: 39).

Literatürde çevre muhasebesine ilişkin çok sayıda farklı tanım ve sınıflandırma yapılmakla birlikte, bu tanımların ortak noktası, muhasebenin temel işlevleri yerine getirilirken çevresel unsurların da sistemli biçimde dikkate alınmasını ve raporlanmasını amaçlamalarıdır (Haftacı ve Soylu, 2008; Apalı ve Bozcu, 2018: 47). Çevre muhasebesi, bir işletmenin çevreyle bağlantılı tüm faaliyetlerinin sınıflandırılması, bu faaliyetlere ilişkin envanterin oluşturulması ve envanterde meydana gelen değişimlerin izlenmesi; söz konusu değişimlerin parasal ya da

sayısal göstergelerle ifade edilmesi ve elde edilen bilgilerin işletmenin temel mali tablolarına yansıtılması süreci olarak tanımlanabilir (Soylu ve İleri, 2009: 320; Apalı ve Bozcu, 2018: 47). Bu tanımlardan hareketle çevre muhasebesi, işletmelerin yürüttükleri ekonomik faaliyetler sonucunda ortaya çıkan çevresel etkilerin parasal olarak ölçülmesi, sistemli biçimde kaydedilmesi, raporlanması, analiz edilmesi ve yorumlanmasını içeren bir muhasebe bilgi sistemi olarak değerlendirilmektedir. Çevre muhasebesi, hem işletme yönetiminin karar süreçlerinde hem de işletme dışındaki paydaşların değerlendirme ve tercihlerinde kullanılabilecek nitelikte veri üretmeyi amaçlamaktadır (Hatunoğlu ve Yıldırım, 2014: 4). Bu kapsamda çevre ile ilgili maliyetlerin belgelenmesi, raporlanması ve gerektiğinde denetime konu edilmesi çevre muhasebesini bir bilim dalı yapmaktadır (Alagöz ve Yılmaz, 2001: 150; Apalı ve Bozcu, 2018: 47).

4. Çevresel Maliyetler

Çevresel maliyetler, işletmelerin mal ve hizmet üretim süreçleri sırasında katlandıkları çok çeşitli maliyet türlerinden biridir. Literatürde çevresel maliyetler genel olarak iki grupta ele alınmaktadır. İlk grubu, işletmenin faaliyet sonucu oluşan kâr veya zararını doğrudan etkileyen ve işletme muhasebe kayıtlarında yer alan içsel maliyetler oluşturmaktadır. İkinci grupta ise işletmenin finansal tablolarında tam olarak görünmeyen, çevre, toplum ve bireyler üzerinde ortaya çıkan olumsuz etkiler nedeniyle katlanılan sosyal (dışsal) maliyetler bulunmaktadır. Bu çerçevede çevresel maliyet kavramı, hem işletmenin üstlendiği özel maliyetleri hem de topluma yansıtılan sosyal maliyetleri kapsayan daha geniş bir maliyet boyutuna işaret etmektedir (EPA, 1995: 1).

Çevresel maliyetler, işletmenin faaliyetlerinin çevreye zarar vermemesini sağlamak ya da ortaya çıkan zararı gidermek amacıyla katlandığı maliyetleri ifade eder ve çoğu zaman genel üretim giderleri içinde gizli oldukları için belirlenmeleri güç olmaktadır. Literatürde bu maliyetler genellikle dört gruba ayrılmaktadır. Çevresel değerleme maliyetleri, işletmenin sorumlu olduğu çevresel etkileri izleme ve ölçmeye yönelik denetim ve test faaliyetlerinin maliyetleridir. Çevresel önleme maliyetleri, çevreye zarar verebilecek atıkların oluşmasını baştan engellemeye yönelik eğitim, geri dönüşüm ve benzeri faaliyetler için yapılan harcamalardır. Çevresel iç başarısızlık maliyetleri, kirletici ve atıkların işletme içinde ortaya çıktığı, ancak henüz çevreye verilmediği durumlarda bunların arıtılması ve kontrol altında tutulması için katlanılan maliyetleri kapsamaktadır. Çevresel dış başarısızlık maliyetleri ise atıkların çevreye bırakılması sonucunda ortaya çıkan temizlik, tazminat, idari para cezası ve itibar kaybına bağlı satış düşüşleri gibi maliyetleri içermektedir (Environmental costs, 2016).

Bir ürün, süreç, sistem ya da tesisle ilişkili çevresel maliyetlerin belirlenmesi, işletmelerin sağlıklı ve rasyonel yönetim kararları alabilmesi açısından önem taşır. Çevresel giderlerin azaltılması, gelirlerin artırılması ve çevresel performansın geliştirilmesi gibi amaçlara ulaşmak için mevcut, gelecekte ortaya çıkabilecek ve potansiyel çevresel maliyetlerin dikkate alınması gerekmektedir. Ancak hangi maliyetlerin "çevresel" sayılacağı her zaman net olmayabilir, bazı kalemler kısmen çevresel, kısmen çevresel olmayan nitelik taşıyabilir. Bu nedenle, bir maliyetin çevresel olarak sınıflandırılmasından çok, karar alma süreçleri açısından ilgili maliyetlerin doğru şekilde tanımlanması ve gerekli önemi görmesi esas kabul edilmektedir (EPA, 1995: 7).

5. Antalya Büyükşehir Belediyesi'nin 2020-2024 Dönemi Faaliyet Raporları Kapsamında Çevresel Maliyetlerin Analizi

Yerel yönetimler, sürdürülebilir kalkınma hedefleri doğrultusunda çevresel etkileri azaltmaya yönelik önemli kamu hizmetlerini yerine getirmekte ve bu hizmetlerin mali boyutu giderek daha görünür hale gelmektedir. Büyükşehir belediyeleri tarafından yürütülen katı atık yönetimi, vektörel mücadele, deniz ve yüzey suyu koruma faaliyetleri ile çevresel izleme ve denetim çalışmaları, kamu bütçeleri içerisinde kayda değer bir harcama kalemi oluşturmaktadır. Bu kapsamda çevre muhasebesi, belediyelerin çevresel faaliyetlere ilişkin maliyetlerini sistematik biçimde izlemeye, sınıflandırmaya ve analiz etmeye imkân tanıyan önemli bir araç olarak öne çıkmıştır. Bu bölümde, Antalya Büyükşehir Belediyesi'nin 2020–2024 dönemleri arasındaki faaliyet raporları esas alınarak çevresel hizmet alanlarına yönelik yapmış olduğu harcamalar incelenmiştir. Çevresel maliyetlerin toplam giderler içindeki payı sayısal verilerle ortaya konulmakta ve söz konusu maliyetlerin yıllar itibarıyla gelişim seyri analiz edilmiştir.

Tablo 1'de yer alan veriler doğrultusunda, 2020–2024 dönemi itibarıyla çevresel faaliyetlere ilişkin bütçe gerçekleşmeleri, Antalya Büyükşehir Belediyesi'nin çevresel hizmetlere yönelik planlama ve uygulama kapasitesinin zaman içerisinde belirgin biçimde güçlendiğine işaret etmektedir. Katı atık bertaraf hizmetlerinde tüm dönem boyunca %97–98 aralığında gerçekleşen bütçe gerçekleşme oranları, bu hizmet alanının belediye açısından süreklilik arz eden, zorunlu ve kurumsallaşmış bir çevresel kamu hizmeti niteliği taşıdığını göstermiştir. Bu durum, katı atık yönetiminin belediye bütçesinde öncelikli ve öngörülebilir bir harcama kalemi olarak ele alındığını ortaya koymuştur.

Hafriyat ve inşaat-yıkıntı atıkları ile deniz ve yüzey suyu kalite izleme faaliyetlerinde bütçe gerçekleşme oranlarının yıllar itibarıyla artış eğilimi göstermesi, çevresel izleme, denetim ve altyapı kapasitesinin kademeli olarak kurumsallaştığını ve operasyonel etkinliğin arttığını göstermiştir.

Gürültü haritası ve eylem planına yönelik bütçe kullanımının yıllar itibarıyla artması, belediyenin çevresel maliyetleri yalnızca zorunlu hizmet alanlarında değil, yaşam kalitesini doğrudan etkileyen çevresel risk alanlarında da planlı biçimde yönetmeye başladığını göstermiştir.

Tablo 1. 2020–2024 Döneminde Çevresel Faaliyetlere İlişkin Bütçe Gerçekleşmeleri (TL)

Yıl	Çevresel Hizmet Alanı	Bütçe Hedefi (TL)	Gerçekleşme (TL)	Gerçekleşme Oranı (%)
2020	Katı atık bertaraf hizmetleri	32.365.000	31.735.000	98
	Hafriyat ve inşaat-yıkıntı atıkları	400.000	0	0
	Deniz ve yüzey suyu kalite izleme	600.000	286.163	48
	Gemi ve deniz araçları atık alımı	600.000	121.500	20
	Vektörel mücadele hizmetleri	31.242.000	26.242.048	84
	Gürültü haritası ve eylem planı	50.000	0	0

2021	Katı atık bertaraf hizmetleri	36.800.000	35.960.000	98
	Hafriyat ve inşaat-yıkıntı atıkları	750.000	420.000	56
	Deniz ve yüzey suyu kalite izleme	850.000	520.000	61
	Gemi ve deniz araçları atık alımı	900.000	390.000	43
	Vektörel mücadele hizmetleri	35.500.000	30.400.000	86
	Gürültü haritası ve eylem planı	150.000	0	0
2022	Katı atık bertaraf hizmetleri	42.600.000	41.900.000	98
	Hafriyat ve inşaat-yıkıntı atıkları	1.200.000	780.000	65
	Deniz ve yüzey suyu kalite izleme	1.100.000	760.000	69
	Gemi ve deniz araçları atık alımı	1.250.000	620.000	50
	Vektörel mücadele hizmetleri	37.850.000	38.936.036	103
	Gürültü haritası ve eylem planı	250.000	95.000	38
2023	Katı atık bertaraf hizmetleri	48.900.000	47.500.000	97
	Hafriyat ve inşaat-yıkıntı atıkları	1.650.000	1.120.000	68
	Deniz ve yüzey suyu kalite izleme	1.450.000	1.020.000	70
	Gemi ve deniz araçları atık alımı	1.600.000	890.000	56
	Vektörel mücadele hizmetleri	41.000.000	39.800.000	97
	Gürültü haritası ve eylem planı	400.000	210.000	53
2024	Katı atık bertaraf hizmetleri	55.200.000	54.300.000	98
	Hafriyat ve inşaat-yıkıntı atıkları	2.100.000	1.650.000	79
	Deniz ve yüzey suyu kalite izleme	1.800.000	1.420.000	79
	Gemi ve deniz araçları atık alımı	1.950.000	1.230.000	63
	Vektörel mücadele hizmetleri	45.000.000	43.500.000	97
	Gürültü haritası ve eylem planı	650.000	420.000	65

Kaynak: Antalya Büyükşehir Belediyesi'nin faaliyet raporlarından derlenmiştir.

Vektörel mücadele hizmetlerinde 2022 yılında gerçekleşme tutarının bütçe hedefini aşması, çevre muhasebesi perspektifinden değerlendirildiğinde önleyici çevresel maliyetlerin öngörülen düzeyin üzerine çıktığı görülmüştür. Bu durum, çevresel ve halk sağlığı risklerine karşı daha yoğun ve acil müdahalelerin gerekli hale geldiğine işaret etmektedir. Nitekim 2023 ve 2024 yıllarında bu harcama kaleminde bütçe hedefleri ile gerçekleşmeler arasındaki uyumun yeniden sağlandığı, dolayısıyla söz konusu hizmet alanında daha dengeli bir mali planlamaya geçilmiştir.

Antalya Büyükşehir Belediyesi'nde çevresel maliyetlerin büyük ölçüde atık yönetimi ve halk sağlığı odaklı önleyici faaliyetlerde yoğunlaştığını, çevresel izleme ve planlama harcamalarının ise sınırlı kaldığı görülmüştür.

- Çevresel Önleyici Maliyetler: Vektörel mücadele, gürültü haritası ve eylem planı, çevre eğitimleri, bilinçlendirme faaliyetleri, önleyici çevre yatırımları.
- Çevresel İzleme ve Denetim Maliyetleri: Deniz ve yüzey suyu kalite izleme, hava kalitesi ölçümleri, gürültü ölçümleri, çevresel denetimler ve laboratuvar faaliyetleri.
- Çevresel Bertaraf ve Temizlik Maliyetleri: Katı atık bertaraf, hafriyat ve inşaat-yıkıntı atıkları yönetimi, tıbbi atık bertaraf, deniz atıkları alımı ve temizlik hizmetleri.

Tablo 2. Çevresel Maliyetlerin Türlere Göre Dağılımı

Maliyet Türü	2020	2021	2022	2023	2024
Önleme maliyetleri	Yüksek	Orta	Orta	Artan	Artan
İzleme maliyetleri	**Düşük**	**Düşük**	**Düşük**	**Düşük**	**Düşük**
Bertaraf maliyetleri	**Çok yüksek**	Yüksek	Yüksek	**Çok yüksek**	**Çok yüksek**
Çevresel yatırımlar	Artan	Artan	Sabit	Artan	Artan

Kaynak: 2020-2024 faaliyet raporlarından derlenmiştir.

Tablo 2'ye göre 2020–2024 döneminde çevresel maliyetlerin türlere göre dağılımı ve belediyenin çevre yönetimi yaklaşımındaki öncelikleri görünmektedir. Söz konusu dönemde önleme maliyetleri başlangıçta yüksek bir düzeyde seyretmiş, 2021 ve 2022 yıllarında orta seviyeye gerilemiş, 2023 ve 2024 yıllarında ise yeniden artan bir eğilim göstermiştir. Bu durum, ilk yıllarda güçlü bir önleyici yaklaşımın benimsendiğini, sonraki yıllarda ise bir zayıflama yaşandığını, son iki yılda çevresel riskleri önlemeye yönelik politikaların tekrar güçlendirildiği düşünülmektedir. İzleme maliyetlerinin tüm dönem boyunca sürekli olarak düşük düzeyde kalması dikkat çekicidir. Bu bulgu, çevresel faaliyetlerin ölçülmesi, raporlanması ve denetlenmesine ayrılan kaynakların sınırlı olduğunu ve çevresel muhasebe sisteminin izleme boyutunun yeterince gelişmediğini göstermiştir.

Bertaraf maliyetleri incelendiğinde, 2020 yılında çok yüksek bir düzeyde olduğu, 2021 ve 2022 yıllarında yüksek seviyede seyrettiği, 2023 ve 2024 yıllarında ise yeniden çok yüksek düzeye çıktığı görülmektedir. Bu eğilim, çevresel sorunların kaynağında önlenmesinden ziyade, ortaya çıktıktan sonra bertaraf edilmesine ağırlık verildiğini göstermiştir. Çevresel yatırımlar ise genel olarak artan bir eğilim sergilemiş, yalnızca 2022 yılında sabit kalmıştır.

Genel olarak tablo, ilgili dönemde çevresel maliyet yapısının ağırlıklı olarak bertaraf odaklı şekillendiğini, önleme ve özellikle izleme faaliyetlerinin görece geri planda kaldığını ortaya koymaktadır. Bu bulgular, çevresel maliyetlerin daha dengeli bir dağılım göstermesi ve sürdürülebilir bir çevre yönetimi anlayışının güçlendirilmesi için izleme ve önleme maliyetlerinin artırılmasının önemine işaret etmiştir.

Tablo 3'e göre Antalya Büyükşehir Belediyesi'nin 2020–2024 yılları arasında toplam bütçe ve giderlerinde artış eğilimi olurken, çevresel maliyetlerin de bu artışa paralel biçimde yükseldiği görülmüştür. Bununla birlikte, çevresel maliyetlerin toplam giderler içindeki payının %26,8 ile %27,3 aralığında dar bir bantta seyrettiği görülmüştür.

Tablo 3. Çevresel Maliyetlerin Bilanço Büyüklükleriyle Karşılaştırılması

Yıl	Belediye Bütçesi TL	Toplam Giderler TL	Çevresel Maliyet	Çevresel Maliyet / Toplam Gider (%)
2020	10.900.000.000	10.450.000.000	2.800.000.000	26,8
2021	12.300.000.000	11.850.000.000	3.240.000.000	27,3
2022	14.800.000.000	14.100.000.000	3.840.000.000	27,2
2023	16.500.000.000	15.900.000.000	4.340.000.000	27,3
2024	18.900.000.000	18.200.000.000	4.945.000.000	27,2

Kaynak: Antalya Büyükşehir Belediyesi'nin faaliyet raporlarından derlenmiştir.

2020 yılında 2,8 milyar TL olan çevresel maliyetlerin 2024 yılında yaklaşık 4,95 milyar TL'ye yükselmesi, mutlak tutar açısından kayda değer bir artışa işaret etmektedir. Ancak bu artışın, toplam giderler içindeki payı önemli ölçüde yükseltmemesi, belediyenin çevresel harcamaları bütçe disiplini çerçevesinde yönettiğini göstermektedir. Dönemsel olarak değerlendirildiğinde, 2021 ve 2023 yıllarında çevresel maliyetlerin toplam giderlere oranının %27,3 ile yüksek seviyelere ulaştığı, buna karşılık 2020, 2022 ve 2024 yıllarında bu oranın %27'nin biraz altında kaldığı görülmüştür. Çevresel maliyetlerin, belediye giderleri içinde yapısal ve sürdürülebilir bir paya sahip olduğu, çevre muhasebesi bakış açısıyla değerlendirildiğinde ise belediyenin çevresel yükümlülüklerini mali sistemine entegre ettiği görülmüştür.

SONUÇ VE ÖNERİLER

Bu çalışmada çevre muhasebesi perspektifinden Antalya Büyükşehir Belediyesi'nin 2020–2024 dönemine ait faaliyet raporları ve bütçe gerçekleşmeleri çerçevesinde çevresel maliyet yapısını incelenmiştir. Bulgular, belediyenin çevresel hizmetlere yönelik harcamalarının mutlak tutar olarak dönem boyunca önemli ölçüde arttığını, buna karşılık çevresel maliyetlerin toplam giderler içindeki payının yaklaşık yüzde 27 düzeyinde istikrarlı bir seyir izlediğini göstermektedir. Bu durum, çevresel harcamaların belediye mali yönetimi içinde yapısal ve sürdürülebilir bir nitelik kazandığına işaret etmiştir. Çevresel maliyetlerin ağırlıklı olarak katı atık bertarafı, hafriyat ve inşaat-yıkıntı atıkları ile vektörel mücadele gibi bertaraf ve halk sağlığı odaklı hizmetlerde yoğunlaştığını ortaya koymuştur. Katı atık bertaraf hizmetlerinde yüksek bütçe gerçekleşme oranlarının süreklilik göstermesi, bu hizmet alanının belediye açısından zorunlu ve kurumsallaşmış bir çevresel kamu hizmeti niteliği taşıdığını göstermiştir. Buna karşılık deniz ve yüzey suyu kalite izleme, gürültü haritaları ve çevresel izleme faaliyetlerine ayrılan kaynakların ise sınırlı kaldığı, çevre muhasebesinin izleme ve ölçme boyutunun yeterince gelişmediği tespit edilmiştir. Çevresel maliyetlerin türlerine göre dağılımı, belediyenin çevre yönetiminde büyük ölçüde bertaraf odaklı bir yaklaşım benimsediğini göstermiştir. Önleyici maliyetlerin son iki yılda artış eğilimi göstermesi olumlu bir gelişme olmakla birlikte, izleme ve planlama faaliyetlerinin bütçe içindeki payının düşük kalması, çevresel sorunların kaynağında önlenmesinden ziyade sonuçlarıyla yönetildiğine işaret etmiştir.

Bu kapsamda, yerel yönetimlerde çevre muhasebesinin etkinliğinin artırılması için çevresel maliyetlerin muhasebe sistemleri içinde daha ayrıntılı sınıflandırılması ve raporlanması önerilmektedir. Önleyici ve izleyici nitelikteki çevresel faaliyetlere ayrılan kaynakların artırılması, uzun vadede bertaraf maliyetlerinin azaltılmasına katkı sağlayacaktır. Ayrıca

çevresel harcamaların performans göstergeleriyle ilişkilendirilmesi, kaynak kullanımında etkinlik ve hesap verebilirliği güçlendirecektir.

Antalya Büyükşehir Belediyesi çevresel harcamalarını mali sistemine entegre etmiş olmakla birlikte, çevre muhasebesinin izleme, önleme ve stratejik planlama boyutlarının güçlendirilmesine ihtiyaç bulunmaktadır. Bu çalışma, yerel yönetimlerde çevre muhasebesi uygulamalarının geliştirilmesine yönelik ampirik bir çerçeve sunmuştur.

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AN EXAMINATION OF THE BUDGETING AND ACCOUNTING SYSTEM IN MUNICIPALITIES

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Abstract

Municipalities are local public administrations that provide essential services at the local level and are therefore required to use public resources effectively and efficiently. The aim of this study is to examine the budget and accounting system implemented in Turkish municipalities within the framework of Law No. 5018 on Public Financial Management and Control and Laws No. 5216 and 5393, to explain the stages of budget preparation, negotiation and approval, and to discuss the role of public sector accounting in terms of fiscal transparency and accountability. Adopting a qualitative and descriptive approach, the study draws on relevant legislation and literature to address the historical development of municipal administration, the definition and purposes of the budget, the legal framework of municipal budgeting, the budget preparation process, program classification and the basic concepts of public accounting. The analysis indicates that Law No. 5018 has introduced a strategic planning and performance based budgeting approach and that establishing budget and accounting unity, adopting a three year budget perspective and using a program based classification aim to enhance efficiency and transparency in resource allocation at the municipal level. The study further underlines that aligning strategic plans and performance programs with the budget, basing revenue and expenditure projections on realistic data, and strengthening financial reporting and audit processes are critical for improving fiscal discipline and the quality of services delivered to citizens.

Keywords: Municipality, Budget System, Public Financial Management, Public Sector Accounting, Strategic Planning.

BELEDİYELERDE BÜTÇE VE MUHASEBE SİSTEMİNİN İNCELENMESİ

Özet

Belediyeler, yerel düzeyde kamu hizmeti sunan ve artan görev, yetki ve sorumlulukları nedeniyle kamu kaynaklarını etkin ve verimli kullanmak zorunda olan idarelerdir. Bu çalışmanın amacı, Türkiye'de belediyelerde uygulanan bütçe ve muhasebe sistemini, 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu ile 5216 ve 5393 sayılı kanunlar çerçevesinde incelemek, bütçe hazırlama, görüşme ve kabul süreçlerini açıklamak ve kamu muhasebesinin mali saydamlık ve hesap verebilirlik açısından rolünü tartışmaktır. Çalışmada nitel bir yaklaşım benimsenmiş, ilgili mevzuat ve literatür taraması yoluyla belediyeciliğin tarihsel gelişimi, bütçenin tanımı ve amaçları, bütçe mevzuatı, bütçe hazırlama süreci, program sınıflandırması

ve kamu muhasebesine ilişkin temel kavramlar betimleyici biçimde ele alınmıştır. İnceleme, 5018 sayılı Kanun ile stratejik planlama ve performans esaslı bütçeleme anlayışına geçildiğini, bütçe ve muhasebe birliğinin sağlanmasının, üç yıllık bütçe perspektifinin benimsenmesinin ve program sınıflandırmasının, belediyelerde kaynak tahsisinde etkinlik ve şeffaflığı artırmayı hedeflediğini ortaya koymaktadır. Çalışmada ayrıca, stratejik plan ve performans programlarının bütçeyle uyumlu hazırlanmasının, gelir ve gider projeksiyonlarının gerçekçi verilere dayanmasının ve mali raporlama ile denetim süreçlerinin güçlendirilmesinin, belediyelerin mali disiplinini ve vatandaşlara sunulan hizmetlerin kalitesini artıracağı vurgulanmaktadır.

Anahtar Kelimeler: Belediye, Bütçe Sistemi, Kamu Mali Yönetimi, Kamu Muhasebesi, Stratejik Planlama.

GİRİŞ

Türkiye'de kanunlar tarafından yerel hizmetlerin gerçekleştirilmesinde mahalli idareler türlerine göre ayrılmaktadır. Türkiye'de görev ve sorumluluk açısından en önemli mahalli idare belediyelerdir. Yerel hizmetlerin yönetimlerinde yetki, vazife ve sorumluluklarının artmasıyla birlikte vatandaşların hizmet beklentileri artmaktadır. Belediyeler, halkın gereksinimleri karşılamak için kamu kaynaklarını kullanmaktadırlar.

5393 sayılı Belediye Kanunu'nda belediye, "belde sakinlerinin mahalli müşterek nitelikteki ihtiyaçlarını karşılamak üzere kurulan ve karar organı seçmenler tarafından seçilerek oluşturulan, idari ve mali özerkliğe sahip kamu tüzel kişisi" olarak tanımlanmıştır. Belediye bütçesi ise belediyelerin belirli bir mali yıl içinde gerçekleştirecekleri gelir ve gider tahminlerini, uygulanacak hizmet ve yatırımları, kaynakların nasıl kullanılacağını gösteren mali plandır. Merkezi yönetim ile uyum halinde hareket eden belediyelerin; vatandaşlara kaliteli bir hizmet verebilmesi için gelir bütçesinin, gider bütçesini karşılaması gerekmektedir.

Belediyelerin hazırladıkları bütçedeki mali göstergeler gerçekçi veri ve bilgilere dayanmalıdır. Belediyeler, 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanununun tanımladığı uluslararası standartlara göre bütçelerini hazırlamaları ve bütçe süreçlerini yürütmeleri gerekmektedir.

Belediyedeki idareciler bütçelerini, 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanununun öngördüğü esas ve ilkeleri dikkate alarak mali saydamlığa, hesap verilebilirliğe önem arz ederek, yapılması gereken öncelikli somut hizmetler ve hedeflerini ortaya koyacak şekilde hazırlık yapılmalıdır. Bu bağlamda belediyelerin gelir ve gider tablolarını gösteren bütçeler, belediyelerin başarı ya da başarısızlığını açıkça ortaya koymaktadır.

Çalışmada öncelikle Türkiye'de belediyeciliğin gelişimi ile ilgili genel bilgiler verilmiştir. Devam eden kısımda belediye bütçeleri ve muhasebe sistemi hakkında literatüre dayanarak bilgilere yer verilecektir.

1. Belediyeciliğin Gelişimi

Türkiye'de ilk belediye teşkilatı Şehremaneti ismiyle İstanbul'da kurulmuştur. Ancak gerçek anlamda belediyecilik kavramı 1930 yılında Cumhuriyet döneminde mümkün olmuştur. 3 Nisan 1930 tarih ve 1580 sayılı Belediye Kanunu ile belediyelerin teşkilat ve görevleri yeniden oluşturulmuştur (Tortop vd., 2006: 148, 149).

5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu 2003 Aralık ayında TBMM tarafından kabul edilerek, Resmi Gazetede yayımlanmıştır. Bu kanun ile kamu mali yönetiminin sınırları

çizilerek, ortak terminoloji oluşturulmuş, merkezi yönetim bütçesi kapsamı, hazırlanması ve uygulanması, mali raporlama, iç ve dış denetim gibi hususlarda uluslararası gelişmelere uygun hale getirilmiştir (Kerimoğlu, 2004).

2003 yılında kabul edilen 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu, yeni mali yönetim ile denetimin uygulanmasını sağlayan düzenlemeler içermektedir. 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu ile tüm kamu kuruluşlarında bütçe ve muhasebe birliği sağlanmış, kamu maliyesinde şeffaflık etkinliğin arttırılması ve Avrupa Birliği ile uyumlu mali yönetim ve denetim sistemi oluşturulmuştur. Bu sayede stratejik planlar ile uyumlu ve performans programlamaya dayalı performans esaslı bütçeleme sistemine geçilmiş olup, bütçe türleri uluslararası standartlara göre yeniden düzenlenerek, kamu idarelerinin bütçeleri üç yıllık bir perspektife göre belirlenmiştir (Mutluer ve Öner, 2010: 201). Bu şekilde kamu mali yönetimin etkinliğini arttırarak, kamuda tasarruf tedbirleri ile mali alan yaratılmasına katkı sağlayacağı düşünülmektedir (Nangır ve Kıral, 2014: 325).

5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu ile kamu mali yönetiminde stratejik planlama anlayışı getirilerek önemli ve köklü değişiklikler yapılmıştır. 2004 yılında yürürlüğe giren 5216 sayılı Büyükşehir Belediye Kanunu, 2005 yılında yürürlüğe giren 5393 sayılı Belediye Kanunu ve 5302 sayılı İl Özel İdaresi Kanunları kamu idarelerine önemli yenilikler getirmiştir (Akman vd., 2018: 56).

Belediyeler, yerelde hizmet ürettikleri için o bölgede yaşayan vatandaşların sorunlarına çözüm bulan kamu kurumlarıdır. Kamusal hizmet listeleri, siyasi parti programlarında değişen şartlara, iktidarın yıllık program ve bütçe, dönemin stratejik amaç ve hedeflerinden, örgütlenmelere kadar birçok faktör etkilidir. Bu sürece vatandaşların da talepleri eklenince karşılanması zor bir memnuniyet seviyesi ortaya çıkmaktadır. Stratejik planlama, önceliklerin belirlenmesi ve önem sıralamasının oluşturulması için bir araç işlevi görecektir (Goodman ve Clynch, 2004).

5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu ile kamu harcamalarını daha sağlam ve hızlı hale getirmek, hesap verilebilirlik ve saydamlık oluşması bakımından bütçe ilkelerinde düzenlemeler içermektedir (Arslan, 2004).

Stratejik plan: “kamu kurumlarının orta ve uzun vadeli amaçlarını, temel ilke ve politikalarını, hedef ve önceliklerini, performans ölçütlerini, bunlara ulaşmak için izlenecek yöntemler ile kaynak dağılımlarını içeren plan” olarak ifade edilmektedir. (5018 sayılı Kanun, 2003, md.3).

Kamu muhasebesi kar amacı gütmeyen devlet, parti, belediye, dernek ve vakıf gibi yalnız kamu hizmeti gören hesapsal kişilerin dönemsel gelir ve giderleri ile ilişkili, denetime uygun hesap ve denge işlerini içermektedir. Kamu muhasebesi hesabı kişiye göre isimlendirilir. Bunlar Devlet Muhasebesi, Parti Muhasebesi, Vakıf Muhasebesi, Belediye Muhasebesi gibi muhasebelerdir (Yazıcı, 2003: 13).

2. Bütçe Sistemi ve Bütçe Hazırlık Süreci

5018 sayılı Kamu Mali Yönetimi Kanunu, 5393 sayılı Belediye Kanunu, 5216 sayılı Büyükşehir Belediyesi Kanunu ve Yönetmelikte; bütçenin tanımı, türleri ve kapsamı, ilkeleri, hazırlanması, sunulması, görüşülmesi, kabul edilmesi, yasalaşması, uygulanması, denetimi ile bütçelerde değişiklik yapılabilmesine ilişkin esaslar belirtilmiştir.

2.1. Bütçenin Tanımı

5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanununa göre bütçe; “belirli bir dönemdeki gelir ve gider tahminleri ile bunların uygulanmasına ilişkin hususları gösteren ve usulüne uygun

olarak yürürlüğe konulan belge" olarak tanımlanmıştır. İdarelerin bütçelerinin oluşturulması için mali yıl içindeki gelirlerin toplanmasına ve harcamaların yapılmasına izin veren bir meclis kararı bulunmaktadır. Stratejik plan ve performans programları dikkate alınarak, o yıla ait ve sonraki iki yılın gelir ve gider tahminleri ile birlikte mali yıl bütçesi görüşülüp değerlendirilmektedir.

Bütçeler, işletme yönetimi tarafından hazırlanarak işletmenin amaçlarına ve politikalarına dayalı olarak hazırlanan planların sayısal ve parasal olarak ifade edildiği raporlardır (Parlakkaya, 2004).

Bütçe, organizasyonların işlevsel ve finansal hedeflerine ulaşabilmesi için öngördüğü yolu çizen detaylı bir finansal plandır. Finansal planlamada Bütçeleme önemli bir adımdır. En küçük işletmeler bile gelecekteki planlamaları açısından gelirlerini, giderlerini, nakit girdi ve çıktılarını içeren yazılı planlardan yararlanmaktadır. Bütçenin kullanımı, finansal planlamanın ve giderleri kontrol etmedeki yönetimsel fonksiyonun yapı taşıdır (Meigs ve Meigs, 1993: 1152).

Bütçenin amacı; işletme hedef ve amaçlarına ulaşabilmesi için yönetime, işletmenin temel fonksiyonlarının gerçekleştirilmesinde yardımcı olmaktadır. Bir bakıma işletmenin likiditesini, verimliliğini ve karlılığının arttırılmasında ve bu amaçlara ulaşmada yönetimin planları ile denge sağlamaktadır (Akdoğan, 2009: 645).

Gider, gelir ve finansmanın ekonomik sınıflandırması bölümlerinden oluşmaktadır. Gider bütçesi; program, kurumsal, finansman tipi ve ekonomik sınıflandırma olmak üzere dört bölüme ayrılmaktadır. Finansman tipi sınıflandırma tek düzeyden, diğer sınıflandırmalar ise dört düzeyden oluşmaktadır.

Gelir bütçesi ve finansmanın ekonomik sınıflandırması cetvelleri dört düzeyden oluşmaktadır. Ancak kurumlar ihtiyaç duymaları halinde, bu düzeyler dışında ilave düzeyler açabilmektedirler.

2.2. Bütçe Mevzuatı

5018 sayılı Kamu Mali Yönetimi Kanunun 12. maddesine göre; "Genel yönetim kapsamındaki idarelerin bütçeleri; merkezî yönetim bütçesi, sosyal güvenlik kurumları bütçeleri ve mahallî idareler bütçeleri olarak hazırlanır ve uygulanır. Kamu idarelerince bunlar dışında herhangi bir ad altında bütçe oluşturulamaz" 13. madde ise bütçenin içeriğine, hazırlanmasına, görüşülmesine ve uygulanmasına yönelik temel ilkelere yer verilmiştir.

Yöneticiler bütçe oluştururken, kurumsal hedeflerini bu hedeflere ulaşmak için gerekli kaynaklarla eşleştirirler. Bütçeleme sürecinde operasyonel, taktiksel, değer zinciri ve kapasite konuları değerlendirilir; kaynakların nasıl verimli kullanılabileceğini değerlendirir ve koşullar değiştikçe acil durum bütçeleri oluşturulmaktadır (Needles vd., 1981: 1040).

Belediyenin harcamaları, gelirlerinin sınırları içinde kalmak zorundadır. Kanuna göre Belediyeler, bütçelerini hazırlarken önce gelirleri dikkate almak ve ardından harcamaları bu gelir düzeyine göre planlamak zorundadır. Başka bir deyişle, belediye harcamaları, ilke olarak, gelirleri aşamaz. Eğer belediyenin geliri tükenirse, ek harcama yapmanın tek yolu borçlanmaktır (Usta, 1993).

2.3. Bütçe Hazırlama Süreci

Yerel yönetimlerde bütçelerin nasıl hazırlanacağı ve kabulü 5393 sayılı Belediye Kanunu'na göre şu şekilde açıklanmıştır; belediye başkanı tarafından hazırlanan bütçe tasarısı eylül ayının

birinci gününden önce encümene sunulur. Akabinde Çevre, Şehircilik ve İklim Değişikliği Bakanlığına gönderilir. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, belediye bütçe tahminlerini konsolide ederek, 5018 sayılı Kamu Mali Yönetimi Kanunu uyarınca merkezi yönetim bütçe tasarısına eklenmek üzere Eylül ayı sonuna kadar Cumhurbaşkanlığına bildirir. Encümen, bütçeyi inceleyerek görüşüyle birlikte Kasım ayının birinci gününden önce belediye meclisine sunar. Meclis yeni yıla girmeden önce bütçeyi aynen veya değiştirerek kabul etmektedir. Ancak belediye meclisi, bütçe denkliğini bozacak şekilde gider ya da gelir azaltıcı arttırıcı değişiklikler yapamaz. Kabul edilen bütçeler mali yılbaşı itibariyle yürürlüğe girmektedir.

Büyükşehir belediye meclisi, ilçe belediyelerin bütçelerini kabul ederken; belediyenin tahsile yetkili olmadığı gelirleri çıkarmaya, harçların oran ve miktarlarını kanunda öngörülen sınırlarına çekmeye, bütçe metnindeki kanun ve diğer mevzuata aykırı madde ve ibareleri çıkarmaya, ortak yatırım programına alınan yatırımlar için gerekli ödeneği eklemeye yetkisi bulunmaktadır (5393 sayılı Kanun, 2005). 5018 sayılı Kamu Mali Yönetimi Kanunun göre; Merkezi Yönetim Bütçe Kanununa, mahalli idarelerin bütçe tahminlerinin ekleneceği belirtilmiştir.

2.4. Bütçe Çağrısı

Üst yönetici, her yıl haziran ayının sonuna kadar stratejik plan ve performans programına göre gider bütçelerinin hazırlanması için birimlere çağrı yapmaktadırlar. Tüm birimler, bütçe yılı gider teklifleri ve izleyen iki yılın gider tahminleri ile ödenek cetveli ve ayrıntılı harcama programını hazırlayarak temmuz ayı sonuna kadar çalışmayı yapacak olan ilgili birime bütçelerini vermektedirler. Belde belediyelerinde ve birliklerde bütçe teklifleri Mali Hizmetler Müdürlükleri tarafından hazırlanmaktadır. Birimler, gider tahminlerini yaparken yatırım programları, stratejik plan ve performans programlarının ilke ve hedeflerini göz önünde bulundurması gerekmektedir. Bütçeler, ekonomik sınıflandırmanın dördüncü düzeyini de kapsayacak şekilde hazırlanmaktadır (Mahalli İdareler Bütçe Hazırlama Rehberi, 2026-2028: 6).

Bütçeleme, bir kuruluşun gelecekteki faaliyetleri hakkında finansal ve finansal olmayan bilgileri belirleme, toplama, özetleme ve iletme sürecidir. Bir kuruluşun, uzun vadeli hedeflerine ulaşması için yapması gereken planlamanın önemli bir parçasıdır. Bütçeleme süreci, kâr amacı güden ve gütmeyen kuruluşlar dahil olmak üzere her tür kuruluşun yöneticisine, kurumsal hedeflerini bu hedeflere ulaşmak için gerekli kaynaklarla eşleştirme fırsatı sunmaktadır. Bir kuruluşun stratejik planında belirtilen hedeflere ulaşmasında önemli bir unsurdur. Bütçeler, nakit yönetimi ve muhasebesi için kullanılmaktadır. Bu tür bütçeler, hedeflenen nakit giriş seviyelerini ve belirli amaçlar için nakit harcamalarına ilişkin sınırları belirlemektedir (Needles vd., 1981: 1042).

Bütçeleme süreci bütçe çağrısı ile başlamaktadır. Bu çağrıda idarecilerden 3 konu hakkında bilgi istenmektedir. Mali yılda uygulanacak olan program, hangi faaliyetlerin yerine getirileceği ve bu faaliyetler için ne tür kaynaklara ihtiyaç olduğu son olarak faaliyet ve hizmetlerin maliyetlerinin ne kadar olduğudur. Maliye ile ilgili bilgiler, bütçenin mali boyutunu ilgilendirmektedir (Mccue ve Gianakis, 1999: 19).

2.5. Bütçenin Görüşülmesi ve Kabulü

Bütçe tasarısı Encümen gündeminde görüşüldükten sonra en geç Eylül ayının son haftasına kadar üst yöneticiye verilmektedir. İlçe belediyelerinde Ekim ayının birinci gününden önce, Büyükşehir Belediyelerinde ise Kasım ayında gerçekleştirilecek toplantıdan önce meclise

sunulmaktadır. Meclis toplantılarının ilk oturumunda bütçe tasarısı incelenmek üzere meclis plan ve bütçe komisyonuna havale edilmektedir (Mahalli İdareler Bütçe Hazırlama Rehberi, 2025). Büyükşehir ilçe belediyelerinin bütçeleri büyükşehir belediye meclisinde görüşülür, hizmet ve yatırımlara göre bütünlük sağlayacak şekilde aynen ya da değiştirilerek kabul edilmektedir (5216 sayılı Kanun, 2004: md. 27).

3. Program Sınıflandırması

"Program sınıflandırması politika öncelikleri ile kamu hizmetlerinin çıktı ve sonuçları arasında bağlantı kurmak, bütçe karar süreçlerini desteklemek ve bütçe kaynak tahsisinin harcama önceliklerine göre yapılmasını sağlamak üzere geliştirilen sınıflandırmadır. Program sınıflandırması bütçe kaynaklarının yönetimi açısından program, alt program, faaliyet" şeklinde üç düzeyden oluşmaktadır. Program; kurumların temel görev ve sorumlulukları esas alınarak kaynak tahsis edilen, birbiriyle uyumlu ve anlamlı şekilde bir araya getirilmiş faaliyetler grubu olan birinci düzeyi, Alt program; programın alt unsurlarını içerecek şekilde düzenlenen ve program kapsamındaki ürün ve hizmetlerin, nitelikleri itibarıyla alt gruplara ayrılmasını sağlayan ikinci düzeyi, Faaliyet; kamu kaynağı kullanmak suretiyle belirli bir ürünün üretilmesi ya da hizmetin sunulması amacıyla, planlama aşamasından üretim ve hedef kitleye sunum aşamasına kadar gerçekleştirilen iş, işlem ve süreçler bütünü olan üçüncü düzeyi, göstermektedir" (Mahalli İdareler Bütçe ve Muhasebe Yönetmeliği, 2006: md. 6).

SONUÇ

Belediyeler, artan görev ve sorumlulukları çerçevesinde kısıtlı kamu kaynaklarını etkin, ekonomik ve verimli kullanmak zorunda olan yerel idarelerdir. Çalışmada, Türkiye'de belediyelerin bütçe ve muhasebe sistemi 5018 sayılı Kamu Mali Yönetimi ve Kontrol Kanunu ile 5216 ve 5393 sayılı kanunlar çerçevesinde ele alınmış, bütçenin tanımı, ilkeleri, bütçe hazırlama süreci, program sınıflandırması ve kamu muhasebesine ilişkin temel kavramlar literatür ve mevzuat ışığında incelenmiştir. Bu inceleme, belediyelerde stratejik planlama ve performans esaslı bütçeleme anlayışının yerleşmesiyle birlikte, bütçe ve muhasebe birliğinin sağlanmasının, kaynak tahsisinde rasyonelliği ve mali saydamlığı artırmayı hedeflediğini ortaya koymaktadır.

Elde edilen bulgular, belediye bütçelerinin gerçekçi gelir ve gider tahminlerine dayanmasının, stratejik plan ve performans programları ile uyumlu hazırlanmasının ve çok yıllı bütçe perspektifinin benimsenmesinin, mali disiplin ve hesap verebilirlik açısından kritik önem taşıdığını göstermektedir. Bununla birlikte, bütçe sürecine ilişkin kurumsal kapasitenin güçlendirilmesi, yerel düzeyde mali raporlamanın zamanlı ve anlaşılır biçimde yapılması ve denetim mekanizmalarının etkin işletilmesi gerekmektedir. Belediye bütçe ve muhasebe sisteminin mevzuata uygun, şeffaf ve performans odaklı yürütülmesi hem yerel hizmetlerin kalitesinin yükselmesine hem de kamu kaynaklarının toplum yararına en üst düzeyde kullanılmasına katkı sağlayacaktır.

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OFFICE OF THE DVC RESEARCH, INNOVATION & OUTREACH

INTERNAL MEMO

From: DVC- Research Innovation and Outreach **Date:** 18th December, 2025

To: See Circulation **Ref:** KCAU/DVCRIO/MEMO/VOL.1/12

SUBJECT: Appointment to the Local Organising Committee of the 10th African International conference on Contemporary Scientific Studies, 2026

KCA University values strategic partnerships and the dissemination of knowledge at both national and international levels. As part of our commitment to academic excellence and technological advancement, the School of Education, Arts and Social Sciences (SEASS) will host the **10th African International Conference on Contemporary Scientific Studies**. The conference will be held on 19th January 2026 over the virtual platform and in partnership with the Institute of Economic Development and Social Research (IKSAD) based in Turkey who will assume any financial costs. This conference reinforces the University's Vision and Mission by promoting innovation, research and collaboration in multidisciplinary fields.

I therefore appoint you to serve as a member of the **Local Organising Committee** of this conference. The appointment is effective from 15th December, 2025 and shall remain valid for the duration of the conference preparation, execution and final reporting phases.

Your **Terms of Reference** shall include, but not be limited to, the following responsibilities:

- Developing the overall conference structure and inviting keynote speakers.
- Overseeing conference planning, execution and inclusivity to ensure a successful and impactful event.
- Acting as a liaison between the University and other stakeholders.
- Managing technical requirements.
- Promoting the conference.
- Addressing all legal, ethical and institutional requirements and compliance protocols.
- Reporting on progress and outcomes to the Office of Vice Chancellor through the DVC-RIO.
- Assessing the impact of the conference through participant feedback, formal reporting and post-event analysis.

As a requirement of the University and in line with best practice, you are expected to attend and actively participate in all committee meetings and assigned activities

Committee Composition:

1. Dr Priscilla Gachigi – Chairperson, Dean -SEASS.
2. Ms. Vivian Arango - Secretary
3. Dr. Zippora A. Okoth - Member
4. Dr. Jackson Mwangi - Member
5. Dr. Susan Kimotho - Member
6. Dr. Cecilia Ireri - Member
7. Dr. Robert J. Ochieng - Member
8. Dr Jane W. Njuru - Member
9. Dr. Munene Laiboni - Member
10. Ms. Mumbi Mubari - Member

We look forward to your contribution towards the successful planning and delivery of this virtual conference.

Thank you.



Prof. Vincent O. Onywera
DEPUTY VICE CHANCELLOR, RESEARCH, INNOVATION & OUTREACH AND PROFESSOR OF EXERCISE AND SPORTS SCIENCE

cc. Vice-Chancellor/CEO

10th. International African Conference on Current Studies of Science, Technology & Social Sciences

January 19-21, 2026

Nairobi - Kenya

İlgili makama;

10th. International African Conference on Contemporary Scientific Research, 19-21 Ocak 2026 tarihleri arasında Nairobi, Kenya'da 14 farklı ülkenin akademisyen/araştırmacılarının katılımıyla gerçekleşmiştir. Kongre kapsamında sunumu yapılan 75 bildirinin 25 adeti Türkiye'den katılımcılar tarafından; 50 bildiri ise 13 ülkeden katılımcılar tarafından sunulmuştur. 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

Dr. Abdussalam Ali Ahmed
On behalf of the Organizing Committee

Reference: https://www.africansummit.org/