PROCEEDINGS BOOK

2nd INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

October 17-18, 2020   Abuja, NIGERIA

Editors

Dr. Sudipta Majumdar
Samira KHADHRAOUI ONTUNC

2nd INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

CONFERENCE PROCEEDINGS BOOK

2nd INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

October 17-18, 2020   Abuja, NIGERIA

Issued: 25.10.2020

CONFERENCE ID

TITLE
2nd INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

DATE - PLACE
October 17-18, 2020   Abuja, NIGERIA

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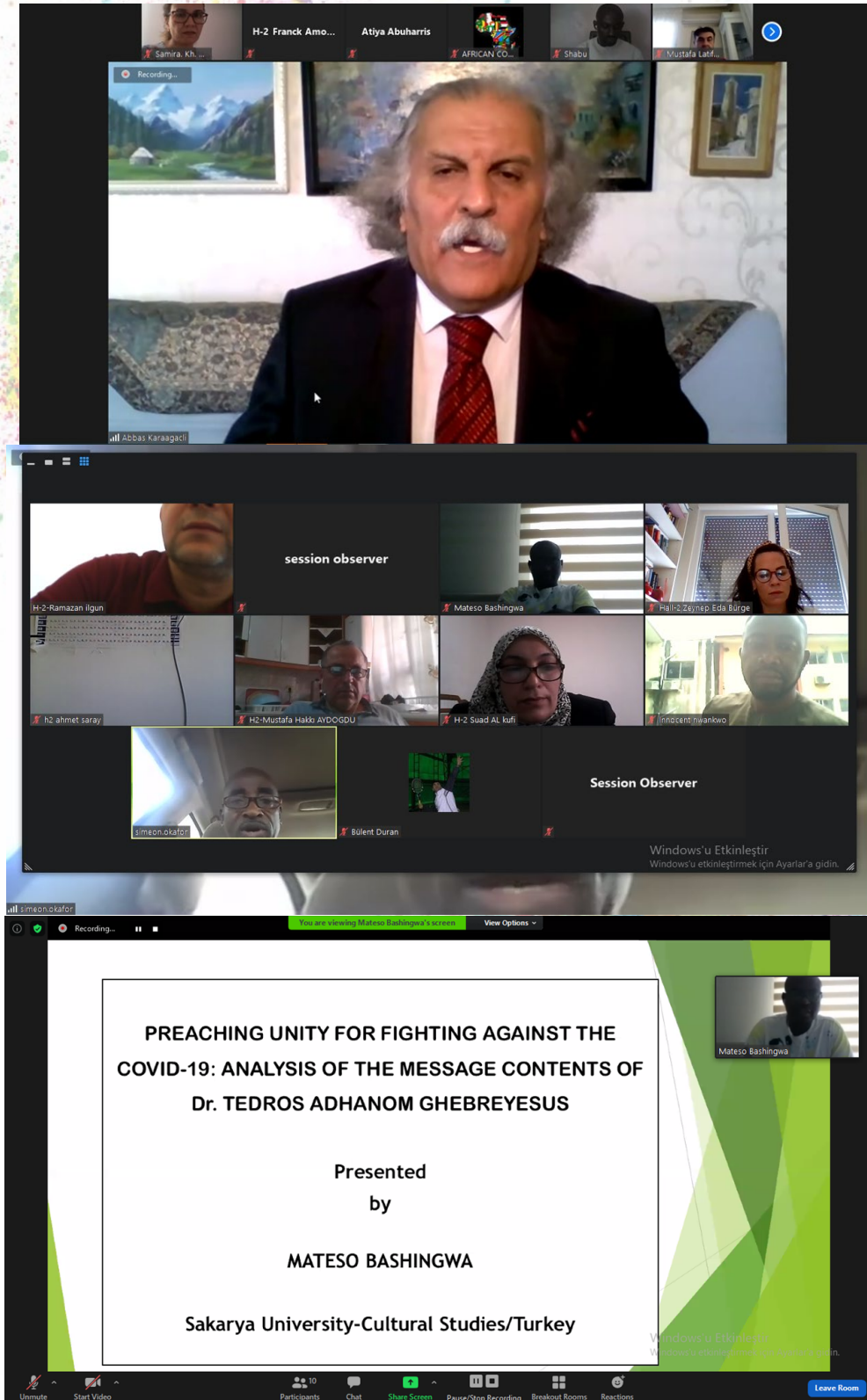**MOHAMMED BENBOUZIANE**
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October 17-18, 2020 Abuja, NIGERIA

CONFERENCE PROGRAM

2nd INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Participant Countries: Nigeria, Malaysia, Morocco, Pakistan, Turkey, Azerbaijan, India, Ethiopia, Somalia, Kenya, Iraq, Tunisia, Libya, Saudi Arabia, France, Benin

Online Conference (Via ZOOM)
Meeting ID: 844 9107 3262
Passcode: 102020

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17.10.2020/SESSION-1/HALL-1

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

Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Nazlı Turan Yücel*

Nigeria's Time: 08:00 – 10:30	Turkey's Time: 10:00 – 12:30	Tunisia's Time: 08:00 – 10:30	Libya's Time: 9:00 – 11:30
Author	**Presentation title**		
Nazlı Turan Yücel **Ümide Demir Özkay** **Özgür Devrim Can**	ANTINOCICEPTIVE EFFECTS OF VORTIOXETINE VIA 5HT $_{1A}$ SEROTONERGIC AND α-ADRENERGIC RECEPTORS		
Nazlı Turan Yücel **Ümmühan Kandemir** **Ümide Demir Özkay** **Özgür Devrim Can**	OPIOID RECEPTOR SUBTYPES MEDIATING THE SUPRASPINAL ANTINOCICEPTIVE EFFECT OF TOFISOPAM		
Ümide Demir Özkay **Nazlı Turan Yücel** **Ümmühan Kandemir** **Özgür Devrim Can**	THE EFFECTS OF REBOXETINE ON DIABETES-INDUCED COGNITIVE IMPAIRMENTS		
Ceren Kaya **Ümide Demir Özkay** **Derya Osmaniye** **Yusuf Özkay**	SYNTHESIS OF SOME PIPERIDINE DERIVATIVE COMPOUNDS AND INVESTIGATION OF THEIR POSSIBLE ANTIDEPRESSANT-LIKE EFFECTS		
Tsegaye Alemayehu **Mengistu Hailemariam**	VANCOMYCIN RESISTANCE ENTEROCOCCUS IN AFRICA IN ONE HEALTH APPROACH: A SYSTEMATIC REVIEW AND META-ANALYSIS		
Hicham EL Mouaddib **Majda Sebbani** **Adil Mansouri** **Latifa Adarmouch** **Mohamed Amine**	CONTINUITY OF PRIMARY CARE FOR PATIENTS WITH CHRONIC DISEASES DURING THE LOCKDOWN DUE TO COVID-19: HEALTH CARE PROFESSIONALS' PERSPECTIVE		
Nazlı Turan Yücel **Derya Osmaniye** **Ümmühan Kandemir** **Ümide Demir Özkay**	ANTIDEPRESSANT-LIKE ACTIVITY OF SOME THIAZOLE-PIPERAZINE DERIVATIVES		
Nazlı Turan Yücel **Umut İrfan Üçel** **Özgür Devrim Can** **Emel Ulupınar**	EFFECT OF REBOXETINE TREATMENT ON THE SYNAPTOPHYSIN AND PSD-95 ENSITIES IN THE SPINAL DORSAL HORN OF DIABETIC RATS		
Aysel Çelebi **Betül Beste Topkara** **Nazlı Turan Yücel** **Özgür Devrim Can**	REBOXETINE: POSSIBLE INDICATIONS IN LIGHT OF CURRENT LITERATURE		
İrem Molla İsa **Ümmühan Kandemir** **Nazlı Turan Yücel** **Özgür Devrim Can**	VITEXIN: A FLAVONOID WITH A WIDE SPECTRUM OF PHARMACOLOGICAL ACTIVITY		
MD. Zeynep Gümüşkanat Tabur **MD. Canan Yılmaz** **Assoc. Prof. Dr. Derya Karasu** **Asst. Prof. Dr. Çağdaş Baytar**	COMPARISON OF ULTRASOUND-GUIDED FEMORAL + ANTERIOR SCIATIC NERVE BLOCK AND GENICULAR NERVE BLOCK FOR POSTOPERATIVE PAIN IN TOTAL KNEE ARTHROPLASTY: A PROSPECTIVE, RANDOMIZED STUDY		

17.10.2020/SESSION-1/HALL-2

(All speakers required to be connected to the session 10 min before the session starts)

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Meeting ID: 844 9107 3262

Passcode: 102020

MODERATOR – *Assoc. Prof. Dr. Ramazan İLGÜN*

Nigeria's Time: 08:00 – 10:30	Turkey's Time: 10:00 – 12:30	Tunisia's Time: 08:00 – 10:30	Libya's Time: 9:00 – 11:30
Author	**Presentation title**		
Prof. Asist. Zeynep Eda BÜRGE	ANALYSIS OF GLOBAL WARMING-THEMED SOCIAL POSTER DESIGNS WITH INDICATIONAL SCIENCE METHOD		
Mustafa Hakkı Aydoğdu	AN EVALUATION ON THE BEHAVIORS OF THE FARMERS IN THE CROP SELECTION FOR CULTIVATION: ŞANLIURFA SAMPLING OF TURKEY		
Mustafa Hakkı Aydoğdu	THE FACTORS AFFECTING AGRICULTURAL CREDIT USE OF FARMERS: ŞANLIURFA SAMPLING OF TURKEY		
Okafor Simeon Chibuko Ogugua Akwoba Joseph Nwankwo Innocent Okwundu Onunkwo Joseph Ikechukwu	HEMATOLOGICAL AND SERUM BIOCHEMICAL PROFILES OF A NATURAL AFRICAN SWINE FEVER INFECTION IN PIGS		
Assoc. Prof. Dr. Ramazan İLGÜN Zekeriya ÖZÜDOĞRU	INVESTIGATION OF THE MACROANATOMICAL STRACTURE OF HEART IN DALMATIAN PELICANS (PELECANUS CRISPUS)		
Dr. Terwase Shabu Mfanyo Keziah Ukula	EFFECT OF HERDSMEN-FARMERS CONFLICT ON LIVELIHOOD ASSETS OF FARMING COMMUNITIES IN BENUE STATE, NIGERIA		
Dr. Öğr. Üyesi Bülent DURAN Dr. Öğr. Üyesi Emrah AYKORA	Investigation of The Reasons Why Active Sport Doing Children Enjoying Doing Sports		
Dr. Öğr. Üyesi Ahmet Fevzi KEKEÇ Doç. Dr. Faik TÜRKMEN Doç. Dr. Burkay Kutluhan KAÇIRA Dr. Alper Aziz TEKİN Dr. Ahmet SARAY	HOW WE MANAGE TYPE 3 OPEN FRACTURES REQUIRING EMERGENCY APPROACH		
Doç. Dr. Mustafa Özer Dr. Öğr. Üyesi Ahmet Fevzi KEKEÇ Doç. Dr. Faik TÜRKMEN Doç. Dr. Tahsin Sami Çolak Dr. Ahmet SARAY Op. Dr. Veysel Başbuğ Op. Dr. Numan Duman Dr. Haluk Yaka	IS THERE A RELATIONSHIP BETWEEN TUBERCULUM MAJUS EDEMA AND VITAMIN D LEVELS?		
Mateso Bashingwa	PREACHING UNITY FOR FIGHTING AGAINST THE COVID-19: ANALYSIS OF THE MESSAGE CONTENTS OF Dr. TEDROS ADHANOM GHEBREYESUS		
Suad Gazi Al Kufi	Molecular, Biochemical and Functional Analysis of Kinesin LmxM.29.350 in Leishmania mexicana		

17.10.2020/SESSION-1/HALL-3

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

Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Prof. Atiya Thabet Abuharris*

Nigeria's Time: 08:00 – 10:30	Turkey's Time: 10:00 – 12:30	Tunisia's Time: 08:00 – 10:30	Libya's Time: 9:00 – 11:30
Author	**Presentation title**		
Musa Bara'u Gamji **Qaribu Yahaya Nasidi** **Aisha Abdul Ibrahim**	WEB 2.0-BASED LEARNING AND THE CHALLENGES OF CULTURE SHOCK AMONG INTERNATIONAL STUDENTS		
Elvis O. OGENYI	NEWSPAPERS FRAMING OF COVID-19 PANDEMIC IN NIGERIA		
Ali Umar Ahmad **Suraya Ismail** **Ahmad Tijjani** **Abdullahi** **Aminu Hassan Jakada** **Rabiu Muhammad** **Danlami** **Inuwa Mukhtar Ahmad**	THE ASYMMETRIC INFLUENCE OF FINANCIAL DEVELOPMENT, ENERGY CONSUMPTION, AND TRADE OPENNESS ON ECONOMIC GROWTH IN D-8 COUNTRIES: EVIDENCE FROM PANEL NARDL APPROACH		
Nuraddeen Umar **Sambo** **Ibrahim Sambo Farouq** **Aminu Hassan Jakada** **Ali Umar Ahmad** **Sa'adatu Suleiman** **Sanusi**	EXCHANGE RATE UNCERTAINTY AND ECONOMIC GROWTH: THE INTERACTIVE ROLE OF FINANCIAL DEVELOPMENT IN NIGERIA		
Ibrahim Idris **Bala Ishiyaku** **Sani Inusa Milala** **Muhammad Usman** **Adekunle**	ATTRIBUTES OF PUBLIC INFRASTRUCTURE PREFERENCE IN BAUCHI METROPOLIS, NIGERIA		
د. نورى خليفة عثمأن خليفة **أ. عماد رمضأن عمر عمار**	دور إدارة الموارد البشرية في وظيفة التوظيف: دراسة استطلاعية تحليلية بمصرف الجمهورية فرع القواسم		
Prof. Atiya Thabet **Abuharris**	THE IMPACT OF MILITARY CONFLICT AND COVID – 19 ON THE LIBYAN TRAVEL AND TOURISM COMPANIES APPLIED STUDY ON TRAVEL AND TOURISM COMPANIES LOCATED IN TRIPOLI - LIBYA		
Assoc. Prof. Dr. Hakkı **ÇİFTÇİ**	BASIC APPROACH TO SOCIAL SCIENCES		
Assoc. Prof. Dr. Hakkı **ÇİFTÇİ**	THE HISTORY OF ECONOMICISTS AND HISTORISTS IN TERMS OF AGRICULTURAL REVOLUTION OVERVIEW		
Öğr. Gör. Ebru SADIÇ **Doç. Dr. Birsen ALTAY**	THE RELATIONSHIP BETWEEN WOMEN'S EARLY DIAGNOSIS OF, KNOWLEDGE ABOUT AS WELL AS BEHAVIOURS TOWARDS BREAST CANCER AND THE FEAR OF BREAST CANCER		
Mesaad Ibrahim Al-Sulaim	Analysis on the current situation of economic and trade activity in Azerbaijan		

OPENING SPEECH

INVITED SPEAKER

Dr. Abbas KARAAĞAÇLI

Director of Black Sea Strategic Research and Application Center,
Giresun University

"Collectivist National Building and National State Formation in Africa"

Turkey's Time: 12:30 – 13:00
Tunisia's Time: 10:30 – 11:00
Libya's Time: 11:30 – 12:00, Nigeria's Time: 10:30 – 11:00

Meeting ID: 844 9107 3262
Passcode: 102020
Main Hall

17.10.2020/SESSION-2/HALL-1

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Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Dr. Sudipta Majumdar*

Nigeria's Time: 11:00 – 13:30	Turkey's Time: 13:00 – 15:30	Tunisia's Time: 11:00 – 13:30	Libya's Time: 12:00 – 14:30
Author	**Presentation title**		
Sani Inusa Milala **Mohammed Usman** **Dr. Bala Ishiyaku**	THE EFFECT OF INTRINSIC AND EXTRINSIC FACTORS ON COMMERCIAL PROPERTY RENTAL VALUE IN DAMATURU OF YOBE STATE, NIGERIA		
Sani Inusa Milala	ASSESSMENT OF FACTORS AFFECTING BUILDING FACILITY MANAGEMENT EFFECTIVENESS IN FEDERAL MEDICAL CENTRE (FMC) GOMBE, GOMBE STATE, NIGERIA		
Dr. Sudipta Majumdar **Prof. Amrita Majumdar**	PRIORITIZATION OF FACTORS INFLUENCING NON USERS' PERCEPTION FOR GREEN FOOD PRODUCTS		
Assoc. Prof. Cevdet KIZIL **Assist. Prof. H. Vedat AKMAN** **Dr. İlkay ERARSLAN**	PARADOXICAL EFFECTS OF THE DUTCH DISEASE AND NATURAL RESOURCE CURSE FROM THE FINANCIAL PERSPECTIVE: A LITERATURE REVIEW		
Sirajo Ladan **Murtala Garba** **Usman Ahmed Hafiz** **Rabiu Ibrahim Darazo**	NIGERIAN CAPITAL MARKET: A BENEFACTOR TO ECONOMIC GROWTH		
Kimouche Bilal **Charchafa Ilyes**	The effect of infrastructure investments on tourism performance in Algeria		
Çiğdem Kızılgeçi	EVALUATION OF GASTRONOMY TOURISM AS AN ALTERNATIVE TOURISM PRODUCT: AN APPLICATION FOR BUSINESSES IN MARDIN		
Çiğdem Kızılgeçi	IN-SERVICE TRAINING IN HOTEL BUSINESS ROLE IN SERVICE QUALITY		
Ebru Koç	A GENERAL EVALUATION OF SCHOOL EXPERIENCE THROUGH THE EYES OF STUDENT TEACHERS		
Dr. Emine Banu Bilgiseven **Prof. Dr. Murat Kasımoğlu**	EFFECT OF ROLE MODELS AND ENTREPRENEUR FAMILY ON ENTREPRENEURIAL ACTIVITY IN START-UP ENTREPRENEURS		
Tadesse Walelign **Tesfaye Kebede** **Eshetu Haile** **Gurju Awgichew**	Heat and Mass Transfer Analysis in Unsteady Flow of Tangent Hyperbolic Nanofluid over a Moving Wedge with Buoyancy and Dissipation Effects		

17.10.2020/SESSION-2, HALL-2

Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Usman Kurmi*

Nigeria's Time: 11:00 – 13:30	Turkey's Time: 13:00 – 15:30	Tunisia's Time: 11:00 – 13:30	Libya's Time: 12:00 – 14:30
Author	**Presentation title**		
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ALI HACHMI A EL MOUSSAOUY	TEACHING THE CONCEPT OF ENERGY IN MOROCCO: THE TEXTBOOK AND THE TEACHER'S CONCEPTION		
Usman Kurmi Fatima Abubakar Ali Ruqayya Uthman Babagana Ruqayya Umar Abubakar Hadiza Balkore Daniel Musa Pukuma	IN VITRO ANTIOXIDANT AND PHYTOCHEMICAL SCREENING OF ETHANOL LEAVES EXTRACT OF DETARIUM MICROCARPUM		
Riadh Marzouki Mohamed Faouzi Zid	EFFECTS OF Cu/Co SUBSTITUTION ON ELECTRICAL PROPERTIES OF SODIUM MELILITE MATERIAL		
Aziza Asserghine Morad El Kaouini Hassan Chatei	ELECRONEGATIVE MAGNETIZED PLASMA SHEATH WITH Q-NONEXTENSIVE ELECTRONS		
M. Jemmali M. Saidi K. Nouri L. Bessais	STRUCTURAL, MAGNETIC AND MAGNETOCALORIC PROPERTIES OF THE $Sm_2Fe_{17-x}Ni_x$ SOLID SOLUTIONS		
Ameni BRAHMIA Rached BEN HASSEN	PHYSICOCHEMICAL STUDY OF NEW BROMO-COUMARIN DERIVATIVES		
FASANMI Paulinah Oyindamola	MEASUREMENT OF NATURAL RADIOACTIVITY IN MAIZE AND ESTIMATION OF CORRESPONDING COMMITTED RADIATION DOSE TO AGE GROUPS		
Ozioma Marvis, Anidobe	EXAMINING THE ORIGIN OF POLITICAL MARGINALIZATION OF WOMEN IN IGBO CULTURE		
Franck AMOUSSOU	ANALYZING SPEECH ACT PATTERNS IN PRESIDENT AKUFO-ADDO'S SPEECH ON GHANA'S ENHANCED RESPONSE AGAINST THE SPREAD OF CORONAVIRUS		
Cengiz TOPDEMİR Canan TOPDEMİR	EDUCATION ERGONOMICS AND LEARNING		
Cengiz TOPDEMİR Canan TOPDEMİR	ABUSE VICTIMED CHILDREN IN THE COVID-19 PROCESS		

17.10.2020/SESSION-2/HALL-3

Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Dr. Eleanor A. Hendricks*

Nigeria's Time: 11:00 – 13:30	Turkey's Time: 13:00 – 15:30	Tunisia's Time: 11:00 – 13:30	Libya's Time: 12:00 – 14:30
Author	**Presentation title**		
DR. CHRISTOPHER ALEXANDER UDOFIA	ARE LEADERS BORN OR MADE? A DISQUISITION ON THE TRAIT AND CHRISTOLOGICAL PARADIGMS OF LEADERSHIP		
Joseph Chinedu Ofobuike	DECOLONIZING EDUCATION; A CRITIQUE OF THE COLONIAL UNDERPININGS OF NIGERIAN EDUCATION POLICIES		
Dr. Eleanor A. Hendricks	EFFECTS OF BULLYING ON THE PSYCHOLOGICAL FUNCTIONING OF VICTIMS		
Asadu, Godfrey Chidiebere	A CRITIQUE OF MBITI'S AFRICAN COMMUNALISTIC UNDERSTANDING OF PERSONHOOD		
C. N. Ogugua	THE HERDSMEN AND FARMERS' CONFLICT IN NIGERIA: THE OBLIGATION OF NIGERIA IN INTERNATIONAL HUMAN RIGHT LAW		
Sa'adatu Suleiman Sanusi **Ahmad Shukri Bin Mohd Noor** **Noor Hafhizah Abdrahim**	REAL TIME SENTIMENT ANALYSIS FOR DETECTING KIDNAPPING ACTIVITIES IN NIGERIA		
Emmanuel LAMPTEY	COVID-19 OUTBREAK RESPONSES: THE PANDEMIC OF RACISM AGAINST AFRICANS LIVING OUTSIDE THEIR CONTINENT		
Assoc. Prof. Dr. Özlem Özdemir **Said Mohamed Mohamuud Haid** **Abdalla Ahmed İbrahim**	TURKEY AS A HUMANITARIAN ACTOR IN SOMALIA		
Prof. Osakue Stevenson OMOERA **FIMIM, M.Sonta** **Omolola Tosan AKINWOLE** **Chidinma H. ONWUBERE**	SECRET TERROR, PUBLIC CRISIS: AN ASSESSMENT OF THE COMMUNICATION MEDIA STRATEGIES EMPLOYED BY NGOs IN THE CAMPAIGN AGAINST RAPE IN NIGERIA		
CHINNAH, PROMISE CHINWE	POVERTY IN THE MIDST OF WEALTH A PARADOX IN NIGERIA: FOURTH REPUBLIC ANALYSIS 1999-2020. ABUJA, NIGERIA		
Assoc. Prof. Dr. Özlem Özdemir **Assist. Prof. Elif Başak Sarıoğlu**	MEDIA PORTRAYEL OF FEMALE GENITAL MUTILATION/CUTTING AS A HARMFUL TRADITIONAL PRACTICE		
Asst. Prof. Shabnam Hasanli Garibova	THE DEVELOPMENT OF SENTENCE STRUCTURE IN XIII-XVI CENTURIES TURKIC LANGUAGES		

17.10.2020/SESSION-3/HALL-1

Meeting ID: 844 9107 3262
Passcode: 102020

MODERATOR – *Dr. Ahmet Erhan AKAN*

Nigeria's Time: 14:00 – 16:00	Turkey's Time: 16:00 – 18:00	Tunisia's Time: 14:00 – 16:00	Libya's Time: 15:00 – 17:00
Author	**Presentation title**		
Dr. Ahmet Erhan AKAN	INVESTIGATION OF OPTIMUM INSULATION THICKNESS VIA DEGREE DAY METHOD		
Elanur Adar	PRIORITIZATION BY AHP OF METHODS USED IN THE TREATMENT OF WASTEWATER CONTAINING DYESTUFFS		
Bilge Boylu **Osman Arslan**	ONE-POT HYDROPHOBIC SURFACE MODIFICATION OF THE STOEBER SiO 2 NANOPARTICLES		
Ohwin Peggy Ejiro	EFFECT OF MULTIVITAMINS AND PROPRANOLOL ON VOLUNTARY MOVEMENT IN WISTAR RATS		
Merve DAĞLI **Soner ÇELEN**	INVESTIGATION OF THE DRYING MODEL OF TYPE B HOSE		
Merve DAĞLI **Soner ÇELEN** **Aytaç MORALAR**	DRYING AND MODELING A FIRE FIGHTING HOSE IN A CONVECTIVE CONVEYOR HOT AIR DRYER		
Efe Ogidiaka **Robert. B. Ikomi**	SEASONAL VARIATION IN PHYSICAL AND CHEMICAL CHARACTERISTICS OF A TROPICAL RIVER		
Kehinde Caleb OMIDOYIN	MICROBIAL POLYHYDROXYALKANOATES FOR BIOPLASTICS: AN ECO-FRIENDLY TECHNOLOGY FOR ENVIRONMENTAL SUSTAINABILITY		
Assoc. Prof. Seyfi ŞEVİK **Dr. Öğr. Üyesi Özgür ÖZDİLLİ**	STUDY OF THE EFFECT OF FIN GEOMETRY ON THE PERFORMANCE OF A PLATE-FIN HEAT SINK		
Arş. Gör. Hasan Ali Güçlü	IS THERE A LEGAL OBLIGATION OF VACCINATION IN CONSEQUENTIAL DISEASES?		

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ANTINOCICEPTIVE EFFECTS OF VORTIOXETINE VIA 5HT$_{1A}$ SEROTONERGIC AND α-ADRENERGIC RECEPTORS

Nazlı Turan Yücel
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Abstract

It is known that antidepressant drugs may exhibit analgesic activity through their effects on monoaminergic neurotransmission in the supraspinal pathways. It has been shown that vortioxetine, an antidepressant drug, shows antinociceptive activity against acute nociceptive stimuli in experimental animals. This antinociceptive activity has been shown to abolish by pre-administrations of α-methylparathyrosine methyl ester and p-chlorophenylalanine, which indicates that vortioxetine-induced antinociception is mediated by noradrenergic and serotonergic systems. In this study, we planned to investigate the possible participation of 5HT$_{1A}$ serotonergic receptors as well as α- and β-adrenoceptors to the antinociceptive activity of vortioxetine. Reactions of mice against nociceptive stimuli were evaluated by tail-clip and hot-plate tests. Involvement of 5-HT$_{1A}$ serotonergic, α-adrenergic, β -adrenergic receptors to the anti-nociceptive activity of vortioxetine (5 mg/kg) were examined by NAN-190 (serotonin 5-HT$_{1A}$-receptor antagonist, 0.6 mg / kg, ip), phentolamine (α-adrenergic receptor antagonist, 4 mg / kg, i.p.) and propranolol (β-adrenergic receptor antagonist, 2 mg / kg, ip) studies, respectively. Pretreatments with NAN-190 and phentolamine antagonized the vortioxetine-induced antinociception, in both of the nociceptive tests. However, propranolol pretreatments were ineffective. Based on the obtained findings it can be suggested that antinociceptive effect of vortioxetine is mediated by 5HT$_{1A}$ serotonergic and α-adrenergic receptors, however β-adrenoceptors are not involved in this activity. On the other hand, exact mechanism of this antinociceptive action should be clarified with further studies.

Keywords: Antinociceptive effect, adrenergic receptors, hot-plate, tail-clip, serotonergic receptor

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

OPIOID RECEPTOR SUBTYPES MEDIATING THE SUPRASPINAL ANTINOCICEPTIVE EFFECT OF TOFISOPAM

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Abstract

Tofisopam, which has a chemical structure of 2,3-benzodiazepine, is an anxiolytic drug marketed in various European countries. The specific anxiolytic activity of tofisopam without any anticonvulsant, sedative, skeletal muscle relaxant, motor weakening or amnestic side effects makes this drug more advantageous than conventional 1,4-benzodiazepines. We have previously reported the opioid-system mediated the acute antinociceptive effects of this drug in mice. In the present study, we further planned to explore possible contributions of μ-, δ- and κ-opioid receptor subtypes to the tofisopam-induced antinociception. Supraspinally organized antinociceptive activity of tofisopam was evaluated by hot-plate tests, in mice. The possible involvements of μ, δ and κ subtypes of opioid receptors to the antinociceptive effect of tofisopam (50 mg/kg) were evaluated using naloxonazine (7mg/kg, s.c.), naltrindole (0.99mg/kg, i.p.), and nor-binaltorphimine (1.03mg/kg, i.p.), respectively. Pretreatments using these antagonists abrogated the antinociceptive activity of tofisopam in the hot-plate test paradigm used, which suggested that μ, δ, and κ opioid receptors participated to the supraspinal antinociceptive effect of tofisopam on pain.

Keywords: Benzodiazepine, hot-plate, tofisopam, opioidergic system

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

THE EFFECTS OF REBOXETINE ON DIABETES-INDUCED COGNITIVE IMPAIRMENTS

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Abstract

Diabetes mellitus (DM) is defined as a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia with disturbances of carbohydrate, protein, and fat metabolism resulting from defects in insulin secretion, insulin action, or both. Studies related to the central nervous system complications of DM have shown that incidence of cognitive disorders in diabetic patients are higher than the general population. In this study, potential effect of reboxetine, a clinically used antidepressant drug, on diabetes-induced learning and memory impairments, was aimed to be investigated. STZ (50 mg / kg, i.v) was injected to rats to induce an experimental diabetes model. Cognitive performances of rats were investigated by Morris water maze and passive avoidance tests. Rota-rod tests were conducted to evaluate the motor activities of animals. The obtained results pointed out that subacute reboxetine (8 mg/kg and 16 mg/kg) treatment for two weeks significantly strengthens the impaired learning and memory performances of diabetic animals, without any change in their motor activity. These findings pointed out that reboxetine has a great potential in the treatment of diabetes-induced cognitive disorders.

Keywords: Diabetes mellitus, cognition, Morris water maze, passive avoidance, reboxetine

SYNTHESIS OF SOME PIPERIDINE DERIVATIVE COMPOUNDS AND INVESTIGATION OF THEIR POSSIBLE ANTIDEPRESSANT-LIKE EFFECTS

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Abstract

In this study, we planned to synthesize novel piperidine derivatives and investigate possible antidepressant-like activities of these compounds. Antidepressant-like effects of the test compounds (50 mg/kg) were assessed by the tail suspension and modified forced swimming tests. Besides, the spontaneous locomotor activities of mice were evaluated by activity cage measurements. Administration of compounds **2c-2f** significantly decreased the immobility time of mice in the tail suspension and modified forced swimming tests, indicating the antidepressant-like effects of these derivatives. Furthermore, in modified forced swimming test, compounds **2c** and **2e** significantly increased swimming time of mice while compounds **2d** and **2f** significantly prolonged climbing duration. These findings indicated that antidepressant-like effects of the compounds **2c, 2e** and **2d, 2f** may be predominantly related to the serotonergic and catecholaminergic mechanisms, respectively. Unchanged spontaneous locomotor activities of the animals revealed that the exhibited antidepressant-like effects were specific. In the mechanistic studies, antidepressant-like effects of the compounds **2c** and **2e** was reversed with p-chlorophenylalanine methyl ester whereas the same effects of the compounds **2d** and **2f** was abolished with α-methyl-para-tyrosine methyl ester. These findings obtained from mechanistic studies supported the results of modified forced swimming test.

Keywords: Piperidine, antidepressant, tail suspension test, modified forced swimming test, activity cage test

Vancomycin Resistance Enterococcus in Africa in One health approach: A Systematic Review and Meta-analysis

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Abstract

Background: Vancomycin resistance enterococci are a global challenge currently as reported by world health organization (WHO). It is also important that combating antimicrobial resistance needs a one-health approach. There is a lack of comprehensive data indicates the pooled prevalence of vancomycin-resistant enterococci in Africa. Therefore, this study aimed to show the pooled prevalence of vancomycin-resistant enterococci in Africa with the concept of one-health.

Methods: a literature search conducted on PubMed, Google scholar, and Hinari with the term "Vancomycin resistance enterococcus in Africa" on August 1-3, 2019. All available articles downloaded to "Endnote version 7.1" then to Microsoft word 2013. Articles checked to meet our criteria for the review extracted to Microsoft excel 2013. Those articles reported the prevalence of vancomycin resistance Enterococcus, all sample type, and published from 2010 to 2019 in the English language included for the review. A meta-analysis conducted with OpenMetaAnalyst version R.3.1.0 software. The effect size determined using a binary random effect model and statically significant considered when $p < 0.05$. Heterogeneity determined with the inconsistency index (I2). A leave one out analysis used to perform the sensitivity analysis.

Result: There were 151 articles from the databases; of this, 37 articles included after extensive review with two independent authors. Out of 4112 samples collected, 1527 isolates identified with an overall pooled prevalence of VRE 28.8% 28.8 % (95 % CI; 12.9 - 44.7 %) in Africa with a one-health perspective. The analysis showed that considerable heterogeneity among the studies (I2 = 99.9 %; p < 0.001). Subgroup analysis in-country, African region, laboratory method, year of publication, and sample source showed that a high prevalence was identified from South Africa (74.8%), South African regions (74.8 %), BacTec (98.8 %), 2010-2015 years (35.6%) and non-human sample source (32.5%), respectively.

Conclusion: This meta-analysis indicates there was a high-pooled prevalence of vancomycin-resistant enterococci in African. A lot should be done to prevent and control the transmission of vancomycin resistance enterococci to a human being from the environment in the continent.

Keywords: Vancomycin resistance enterococci, One-health, Meta-analysis, Africa

Continuity of primary care for patients with chronic diseases during the lockdown due to COVID-19: health care professionals' perspective

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Introduction ─ Continuity of care is the extent to which a range of distinct health care service is seen by patients as consistent. The COVID-19 pandemic was marked by disruption during the lockdown and the state of health emergency. Continuity of primary care (PC) is essential for monitoring chronic diseases. The objective was to describe continuity of care from the PC professionals' perspective for patients with chronic diseases at the Marrakech prefecture during the lockdown linked to COVID-19. Methods ─ A mixed study was conducted from May 2 to 23, 2020. The data was collected using an online questionnaire and individual interviews with PC professionals (doctors and nurses) in the public and private sectors. The analysis was descriptive, univariate and bivariate. The thematic analysis of the interviews was carried out using NVivo V10. Results ─ A total of 107 responses were obtained and 10 semi-structured interviews conducted. The scores for 5 of the 6 dimensions of continuity were ≤3. These dimensions struggled to materialize more in the public than in the private sector (a) giving advice to patients (88.6% vs. 11.4%, p = 0.040), (b) showing interest (94.3% vs. 5.7%, p <0.001), (c) answering questions (95.8% vs. 4.2%, p <0.001), (d) maintaining confidentiality (97.2% vs. 2.8%, p <0.001) and (e) delivering the expected aid (90.1% vs. 9.9%, p <0.001). The results of the verbatim analysis revealed the impact on the same dimensions. Conclusion ─ Continuity of care for patients with chronic diseases was compromised during the lockdown, especially in the public sector. An overhaul in the reorganization of the PC system is necessary after the pandemic.

Keywords: Primary care, continuity of care, chronic diseases, perspective, health care professionals, Marrakech, Morocco

ANTIDEPRESSANT-LIKE ACTIVITY OF SOME THIAZOLE-PIPERAZINE DERIVATIVES

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Abstract
In this study, based on the potential pharmacological effects of the compounds carrying thiazole and piperazine ring systems on the central nervous system, it was aimed to investigate the possible antidepressant-like activities of some thiazole-piperazine derivatives. In this purpose, a series of thiazole-piperazine derivative compounds were synthesized by Anadolu University Faculty of Pharmacy Department of Pharmaceutical Chemistry. For the studies, adult male BALB/c mice (30-35 g) were used. The antidepressant-like activity of the thiazole-piperazine derivatives was evaluated by tail-suspension and modified forced swimming tests. Furthermore, the activity cage device measured the effects of the test compounds on spontaneous locomotor activities of mice. The experimental protocol of this study was approved by the Anadolu University Animal Experiments Local Ethics Committee. Statistical evaluation of the obtained data from the tail-suspension and modified forced swimming tests showed that reference drug fluoxetine (20 mg/kg) and the compounds encoded 4a-4c and 4f-4g, administered at 50 mg/kg dose, caused significant reductions in the immobility times of mice compared to the control group. None of the compounds changed the horizontal and vertical locomotor activities in the activity cage at the administrated dose. The decreased immobility time of the animals in both of the screening tests pointed out the antidepressant-like activity of the aforementioned compounds. Moreover, unchanged spontaneous locomotor activities of the animals revealed that the observed antidepressant-like effects were specific. The derivatization of this structure by using different substituents should be performed to synthesize new compounds with higher potency and the probable mechanisms underlying the presented effects should also be elucidated by further detailed studies.

Keywords: Antidepressant-like, modified forced swimming test, piperazine, tail-suspension test, thiazole

EFFECT OF REBOXETINE TREATMENT ON THE SYNAPTOPHYSIN AND PSD-95 DENSITIES IN THE SPINAL DORSAL HORN OF DIABETIC RATS

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Abstract

Reboxetine has been shown to possess notable antihyperalgesic and antiallodynic activities on neuropathic pain. However, molecular mechanisms underlying this activity were not clarified, yet. It is known that neurotransmission in the dorsal horn of the spinal cord is critical for the pain processing and analgesia. Moreover, inflammation and nerve injury have been reported to trigger some prominent alterations in the synaptic plasticity of neurons carrying nociceptive stimuli. In this study, based on the favorable efficacy of reboxetine on diabetes-induced hyperalgesia and allodynia sensations, possible effects of this drug on synaptophysin and PSD-95 densities in the spinal dorsal horn of diabetic rats were investigated. Diabetes was induced by a single dose of streptozotocin (50 mg/kg, i.v.) in male Sprague-Dawley rats weighted 300-350 grams. Four weeks after the induction, reboxetine treatment (8 mg/kg/day, p.o.) was initiated and at the end of a 14-day administration period, rats were anesthetized and perfused transcardially. Lumbar segment of the spinal cords were dissected and the obtained sections were examined under light microscopy. By using ImageJ image processing and analysis program, synaptophysin and PSD-95 immunoreactivities, which are measured by the optical densities of the photomicrographs, were calculated. The experimental protocol was approved by the Eskişehir Osmangazi University Animal Experiments Local Ethics Committee. Obtained results demonstrated that diabetes enhanced the synaptophysin levels in the spinal dorsal horn of the rats and the two-week reboxetine treatment reversed this increase. However, there was no alteration on the densities of PSD-95, the post-synaptic marker of the synaptic integration, in both diabetic and reboxetine-treated diabetic rats. Enhancement in the synaptophysin immunoreactivity in the spinal dorsal horn of diabetic rats points out an increase in the release of neurotransmitters and neuromodulators, and augmented transmission of nociceptive signals. Reboxetine could reduce the pre-synaptic neurotransmitter release from the primary nociceptive neurons in dorsal horn, which leads to prevent the propagation of pain signals to supraspinal centres, hence alleviate the neuropathic pain. However, exact mechanisms should be clarified by further studies.

Keywords: Diabetes, Dorsal horn, Reboxetine, Synaptophysin

REBOXETINE: POSSIBLE INDICATIONS IN LIGHT OF CURRENT LITERATURE

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Abstract
Reboxetine is an antidepressant drug showing its pharmacological effect by inhibiting neuronal noradrenaline reuptake selectively. It has been first approved in Europe in 1997. Reboxetine has been prescribed for many years, for the acute phase of major depression and the maintenance therapy following recovery in patients responding to initial therapy. Although it has been used in many countries around the world, the United States has not licensed this drug. Actually, its clinical efficacy as an antidepressant has been questionable in recent years. Fortunately, current studies have revealed that this drug molecule may have different pharmacological activities other than antidepressant activity. For example, some researchers suggest that reboxetine may be useful against narcolepsy and attention deficit and hyperactivity disorder. Moreover, results of various studies have pointed out that reboxetine may have a therapeutic potential against anxiety disorders such as post-traumatic stress disorders, panic attack symptoms and obsessive-compulsive disorders which resistant to selective serotonin reuptake inhibitors. It is also thought that reboxetine may be effective against cocaine dependence disorder, amphetamine withdrawal syndrome, sleep disorders and motor function impairments. Finally, it has also been determined that reboxetine, added to the antipsychotic treatment in schizophrenia patients, is beneficial in improving the negative symptoms of schizophrenia and in preventing weight gain caused by classical neuroleptics. Although all of these studies pointed out that drug repositioning is possible for reboxetine, it is clear that extensive clinical studies are needed to confirm the efficacy of this drug for different indications.

Keywords: Antidepressant, depression, indication, reboxetine

VITEXIN: A FLAVONOID WITH A WIDE SPECTRUM OF PHARMACOLOGICAL ACTIVITY

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Abstract

Numerous naturally- and synthetically-originated substances have been used to protect health, diagnose and treat diseases, for centuries. Plants, important natural drug resources, show their pharmacological effects through the phytochemicals they contain. Vitexin, a plant-based apigenin C-flavone glycoside, is one of them. Pearl millet, hawthorn, japanese maple, passionfruit and snake grass are among the vitexin-rich plants in nature. Agnucaston® prepared from Vitex agnus-castus L. fruit extract and Passiflora Mood Syrup® prepared from Passiflora incarnate L. are the commercial products that prepared from plants containing high levels of vitexin. Nowadays, this phytochemical has attracted the attention of the scientific world with its wide pharmacological activity profile. In this study, we aimed to review scientific reports on the pharmacological effects of vitexin and to evaluate the potential use of this phytochemical for different indications. PubMed, ScienceDirect, Web of Science and Google Scholar electronic databases were searched to access the previous reports on the pharmacological activities of vitexin. Our literature survey pointed out that anti-cancer, anti-oxidant, anti-spasmodic, anti-hypertensive, anti-inflammatory, cardioprotective, anti-microbial and anti-thyroid activities of vitexin have been reported to date. Although preclinical studies, which design to determine the pharmacological effects of vitexin and to elucidate the pharmacological mechanisms underlying its effects, have demonstrated the therapeutic potential of this molecule on various diseases; well-designed clinical trials are still needed for this flavonoid to be considered as a drug or an adjuvant agent.

Keywords: Flavonoid, indication, pharmacological activity, vitexin

COMPARISON OF ULTRASOUND-GUIDED FEMORAL + ANTERIOR SCIATIC NERVE BLOCK AND GENICULAR NERVE BLOCK FOR POSTOPERATIVE PAIN IN TOTAL KNEE ARTHROPLASTY: A PROSPECTIVE, RANDOMIZED STUDY

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Abstract

Background: This study aimed to compare the effectiveness of ultrasound-guided (USG) femoral + anterior sciatic (FAS) nerve block and genicular (G) nerve block as preventive analgesia methods after total knee arthroplasty.

Methods: A total of 50 patients, 55-80 years of age, were separated into 2 groups preoperatively. Patients in groups FAS (n=25) received 20 ml solutions (10ml 0.5% Bupivacaine, 1ml (4mg) Dexamethasone and 9ml saline) both femoral and sciatic blocks. Patients in group G (n=25) received 5 ml solutions (2 ml 0.5% Bupivacaine and 1 ml (4 mg) Dexamethasone and 2 ml saline) for each nerve. Patients were assessed 24h postoperatively, and pain scores, time to first analgesic requirement, total analgesic dose, and postoperative complications during the first 24 h were recorded.

Results: Twenty-two patients in Group FAS and 24 in Group G were ultimately evaluated. Visual analog scale (VAS) scores and total analgesic consumption were statistically significantly lower in Group FAS for postoperative 24 hours. And also first analgesic time was statistically significant short in group G. There was no requirement for additional analgesia postoperative first 24 h in group FAS, but 9 patients required additional analgesic in group G. The duration of operation and tourniquet were significantly longer in Group G.

Conclusion: Genicular block is an effective block in postoperative pain that does not cause motor block in total knee arthroplasty, which can be safely applied, but it was inferior to the combination of femoral+sciatic nerve block.

Keywords: Ultrasonography, Sciatic Nerve, Total Knee Arthroplasty, Femoral Nerve, Patient-Controlled Analgesia, Postoperative Pain

1. INTRODUCTION

Knee osteoarthritis is a disease frequently seen in middle-aged patients and which causes physical, psychosocial morbidity if treated inappropriately [1]. Severe knee osteoarthritis is currently the most common indication for Total Knee Arthroplasty (TKA) [2]. The incidence of osteoarthritis has increased with increasing obesity and life expectancy and, parallel to this, TKA has become an orthopedic surgery that is frequently applied today.

Despite improved surgical techniques, more than 50% of patients experience moderate or severe postoperative pain [3,4]. To provide multimodal analgesia for TKA; Oral non-steroidal anti-inflammatory drugs (NSAIDs), intravenous (IV) corticosteroids, local anesthetic infiltration instead of incision, intraarticular catheter applications, intraoperative periarticular injections, preoperative and postoperative central and peripheral nerve blocks have been defined. It is aimed to provide better analgesia with the appropriate combination of these methods [5].

Neuraxial blocks are frequently used as analgesia and anesthesia methods in TKA. However, the central neuraxial blocks have serious side effects such as motor block, urinary retention, hypotension, nausea, vomiting and patched block [6]. Peripheral nerve blocks are preferred to avoid these side effects. Peripheral nerve blocks, such as femoral and sciatic nerve blocks are frequently preferred for postoperative pain in TKA [7]. Genicular block is an up-to-date method applied with fewer medications without forming a motor block for postoperative pain in TKA [8].

This study aimed to compare the efficacy of ultrasound-guided femoral + anterior sciatic nerve blocks and genicular block as preventive analgesia methods after TKA.

2. METHODS

2.1. Study Design

The study protocol was approved by the Local Ethics Committee (Uludag University Faculty of Medicine Clinical Research Ethics Committee, Ethical number: 2017-17/31). Written informed consent was obtained from each patient, and the study was conducted in accordance with the principles of the Declaration of Helsinki. This was a single-center, prospective, randomized, observer-blinded study.

The study included 50 patients (55-80 years old, American Society of Anesthesiologists (ASA) score I-III, general anesthesia) who were scheduled for unilateral primary TKA due to primary varus knee osteoarthritis (Figure 1). Patients were excluded from the study if they had impaired bleeding diathesis, a mental disorder, allergy to the drugs used, infection in the area where the block was to be applied, body mass index (BMI) > 35 kg/m2, or inability to communicate. Patients were randomly divided into 2 groups using sealed envelope technique: Group FAS (femoral + sciatic block) (n:25) and Group G (genicular block) (n:25).

2.2. Pre-block preparation

Premedication was administered to all patients in the operating room (0.01-0.02 mg/kg IV midazolam), and routine monitoring was performed. Peripheral blocks were performed by a single USG (Esaote®, MyLab30Gold Cardiovascular, Florence, Italy) experienced anesthesiologist after sedation before general anesthesia.

2.3 Femoral and Anterior Sciatic Block Procedure

Femoral Block Procedure: In group FAS (n:22), the femoral block was performed after sedation with the patient in the supine position by the same experienced anesthesiologist. The thigh was slightly abducted. The patient was positioned with the ipsilateral hand under his head. After the skin is properly sterilized, a sterile-coated high-frequency (12-13 MHz) linear USG probe was placed under the inguinal fold, parallel to the inguinal ligament and first the femoral artery pulse and then the femoral vein in the medial of the artery is determined on a short axis ultrasonographic image. The femoral nerve was visualized in the sulcus of the iliopsoas muscle under the fascia iliaca, lateral of the femoral artery, hyperechoic oval or triangular shape. Skin infiltration was performed with 1-2 ml 2% lidocaine to provide local anesthesia at the injection point. After the neurostimulator was set to 1-1.5 mA, 0.1 ms, 1 Hz, it was entered into the skin at a 90 ° angle using the in-plane technique with the block needle. The block needle (150 mm, 20 gauge, Stimuplex Ultra, B Braun, Melsungen AG, Germany) was directed towards the lateral and the cephalized. After the rhythmic twitch (patellar dance) movement in the characteristic patella is observed to continue at 0.3-0.5 mA current, a total of 20 ml solution prepared with 10 ml 0.5% bupivacaine, 1ml (4 mg) dexamethasone, and 9 ml saline was applied with negative aspiration test.

Anterior Sciatic Block Procedure: While the patient was in the supine position, the hip and the knee were flexed slightly to give the hip a 45 ° external rotation. A sterile-coated low frequency (3-5 MHz) convex USG probe was placed transversely on the approximately 10 cm distal of the inguinal ligament and medial to the thigh. After the sciatic nerve visualized with a hyperechoic flat in the medial of the femur, a block needle (150 mm, 20 gauge, Stimuplex Ultra, B Braun, Melsungen AG, Germany) was directed using the in-plane technique. The sciatic nerve was reached at a depth of about 10-12 cm. When the contraction movement continued at 0.3- 0.5 mA current in the calf, foot or thumb, following the negative aspiration test, a total of 20 ml solution was administered in the form of 10 ml 0.5% bupivacaine, 1 ml (4 mg) dexamethasone and 9 ml saline.

2.4 Genicular Block Procedure

In Group G (n:24), superior medial genicular nerve (SMGN), superior lateral genicular nerve (SLGN) and inferior medial genicular nerve (IMGN) of each patient were blocked together. The patient was admitted to the supine position and the knee to be operated was slightly flexed. Block needle (22 gauge of 50 mm, Stimuplex Ultra, B. Brun Melsungen AG, Germany) directed to the three of nerves by using a high-frequency (12-13 MHz) linear USG probe. After the negative aspiration test, a total of 5 ml solution was injected in the form of 2 ml %0.5 bupivacaine, 1 ml (4 mg) dexamethasone, 2 ml saline-injected for each branch of the genicular nerve. For the SMGN block, the femoral medial epicondyle and the adductor tubercle were visualized. The superior medial genicular artery was observed between these two structures. The block needle was directed 1 cm away from the bone until it approached the artery and the solution was administered. For the IMGN block, the distal tibial medial epicondyle and the medial collateral ligament of the tibia were determined. The inferior medial genicular artery was visualized between these two structures and

the solution was administered around the artery. For the SLGN block, lateral epicondyle of the femur and distal of the deep edge of the vastus lateralis were visualized. The superior lateral genicular artery was visualized between these structures and the solution was administered around the arterial area.

2.5 Anesthesia Management

After blocks are performed, all patients were intubated following anesthesia induction using 1-2 mcg/kg fentanyl, 1,5- 2 mg/kg propofol and 0.6 mg/kg rocuronium. Sevoflurane was applied as maintenance of anesthesia at a rate of 2 L/min in a 50% air/50% oxygen mixture with a minimum alveolar concentration of 1. Intraoperatively additional drug doses were administered as needed.

2.6 Analgesia Management

All patients were administered 75 mg diclofenac sodium IM before the operation and 1 gr paracetamol IV at the end of the operation. For postoperative pain control, an IV patient controlled analgesia (PCA) device (CADD- Legacy PCA, Smiths Medical, St Paul, MN, USA) was prepared with an IV solution of 72 ml saline + 8 ml tramadol (50 mg/ml). Without basal infusion and loading dose, the bolus dose was set to 5 ml, with a lock-out time of 20 min. All patients received 1 g of paracetamol IV every 8 hours after surgery. In spite of these, 75 mg IM diclofenac sodium was administered as a rescue analgesic for VAS >5 patients.

2.7 Outcomes

Primary outcomes included pain scores and the consumption of rescue analgesics. The pain was evaluated according to the resting VAS score. Another anesthesiologist evaluated VAS scores at 0, 1, 6, 12, and 24 h. Also, tramadol consumption and the use of another rescue analgesia were recorded by the same anesthesiologist for 24 hours. Secondary outcomes included hemodynamic parameters (blood pressure >140/90 mmHg: hypertension, blood pressure <90/60 mmHg: hypotension, heart rate >100/min: tachycardia, heart rate < 60/min bradycardia), intraoperative (hypo-hypertension, bradycardia-tachycardia) and postoperative (stammering, nausea-vomiting, agitation, tinnitus etc.) side effects, Bromage scores and patient-surgeon satisfaction (very satisfied, satisfied, undecided, and not satisfied).

2.8 Statistical analysis

For statistical evaluation, SPSS version 22 (IBM Corporation, Armonk, NY, USA) for Windows (Microsoft Corporation, Redmond, WA, USA) was used. In the descriptive statistics, quantitative data are expressed as mean ± standard deviation (SD) and qualitative data are expressed as percentage (%) values. Conformity to normal distribution was assessed using the Kolmogorov-Smirnov test. For data not exhibiting normal distribution, the Mann Whitney U-test, Kruskal-Wallis, and the chi-squared tests were used; $p<0.05$ was considered to be statistically significant.

3.RESULTS

Of the 58 patients who underwent total knee arthroplasty, 50 were included in the study and 46 patients (three patients were excluded from the study due to problems with PCA and one patient with USG probe problems) were evaluated statistically (Figüre 1). When the demographic data of the patients were examined, no statistically significant difference was found between the groups (Table 1).

The duration of operation was significantly longer in group G (p=0.041). The duration of tourniquet was significantly longer in group G (p=0.047) (Table 2).

No statistically significant difference was found between the groups with regard to intraoperative opioid consumption and block application time (p >0.05, Table 2).

3.1 Primary Outcomes

VAS scores in group FAS were statistically significantly lower than group G at 0, 1, 6 h. (respectively p <0.001, p <0.001, p <0.001, Table 4).

The patients were followed up for a period of 24 h with regard to PCA device use. The patients' request, the number of analgesic doses delivered by the PCA device and the total amount of tramadol consumed were statistically significant high in group G. (respectively p <0.001, p <0.001, p <0.001, Table 3). And also the first analgesic time was statistically significant short in group G (p <0.001, Table 3). There was no requirement for additional analgesia postoperative first 24 h in group FAS, but 9 patients required additional analgesic in group G (p:0.03).

3.2 Secondary Outcomes

No statistically significant difference was found between the groups with regard to heart rate and mean blood pressure (p>0.05). Bromage scores were statistically significant high in group FAS at 0, 1, 6, 12 h (p< 0.05, Table 5).

No statistically significant difference was found in intraoperative complications between the groups (p> 0.05). In the comparison of postoperative complications, nausea and vomiting were recorded in 3 patients in group FAS and 6 patients in group G, and hypertension was observed in 1 patient in group G (p> 0.05). Patient satisfaction was reported as very satisfied by 14, satisfied by 7, and undecided by 1 of the 22 patients in group FAS, and very satisfied by 13, satisfied by 9, and undecided by 2 of the 24 patients in group G. No statistically significant difference with regard to patient and surgeon satisfaction was found between the groups (p>0.05).

4.DISCUSSION

This prospective, randomized, observer-blinded study compared femoral + anterior sciatic block and genicular nerve block for preventive analgesia in 46 patients who underwent unilateral primary total knee arthroplasty under general anesthesia. VAS scores at postoperative 0, 1, 6 h and the total amount of tramadol consumed 24 h were lower in group FAS than Group G and we also observed that the first analgesic requirement was later. There was no requirement for additional analgesia postoperative first 24 h in group FAS, but 9 patients required additional analgesic in group G. The Bromage scores were statistically significant high in group FAS at 0, 1, 6, 12 h. The duration operation and tourniquet were statistically significantly longer in group G than group FAS.

The knee joint is innervated by the end branches of femoral, sciatic and obturator nerves [9]. In a meta-analysis of 8 randomized controlled trials including 379 patients; It has been reported that the addition of sciatic nerve block to femoral nerve block in TKA significantly reduces postoperative pain and opioid consumption [10,11]. It has been reported in the literature that USG guided anterior sciatic nerve block in addition to femoral nerve block can be safely applied in arthroscopic knee surgeries, under knee surgeries and in patients with high comorbidity which the application of other anesthesia methods is at high risk and it has also been reported that this block provides effective postoperative analgesia [12-14]. In our study, we preferred anterior sciatic nerve block because of its ease of administration and better tolerability by patients, and this block does not require a special position, unlike other sciatic nerve block approaches.

The genicular nerve block is an up-to-date analgesia method used for chronic osteoarthritis, acute postoperative pain in TDA, and chronic knee pain [8, 15]. In anatomical studies, reference points for anatomical relations of genicular nerves with surrounding tissues and USG imaging were defined and anatomical information was provided for proper needle placement in perioperative pain treatment [16, 17]. Genicular nerves, which association with knee pain has been clinically proven in previous studies, have only been indicated as SMGS, SLGS, and IMGS [16, 18 19]. RFA or local anesthetic infiltration is generally applied to these nerves under the guidance of USG or fluoroscopy [15, 20]. Similar to these studies, in the present study, we identified SMGN, SLGN, IMGN as target nerves.

Sotelo et al. [8] performed a two-part study including anatomical and clinical. In the anatomical part, they reported the spread of contrast solution in CT and surgical dissection after USG - guided genicular nerves injections. In the clinical part, 12 patients who underwent TKA with spinal anesthesia, 4 ml of 1 / 200.000 adrenaline solution with 0.25% isobaric bupivacaine was applied to SMGN, SLGN, IMGN and ILGN areas USG guided before surgery. They reported that pain assessed with the Numeric Rating Scale (NRS) mean is 2 ± 1 and additional analgesic (NSAIDs) required patient rate is 42 % after the termination of the subarachnoid block in the recovery room. They reported NRS mean 4 ± 1 and additional analgesic (pethidine) required patient rate 33% at 12th h. Also, 92% of the patients were satisfied with the analgesic technique. In this study, the analgesic efficacy of the first 12 hours was evaluated and it has been concluded that genicular block is also clinically effective in acute pain. In the present study, the patients were followed up for a period of 24 h with regard to PCA device use. VAS scores were statistically significant low in group FAS at 0, 1, 6 h. However, the mean VAS score was below 4 in group G. VAS scores at 12 and 24 h were similar in both groups. Both methods were effective in the control of severe postoperative pain in TKA due to low postoperative pain scores and high patient satisfaction. The frequency of postoperative complications did not increase due to more opioid consumption in the PCA device.

Patient demand, bolus dose request and total tramadol consumption were significantly higher in group G. However, in our study mean of tramadol consumption was lower than the similar studies [21, 22] in the literature. In the first 24 hours of the postoperative period, there was no additional analgesic requirement in Group FAS, while 9 patients in Group G had an additional analgesic requirement. In the early postoperative period, shorter tourniquet duration leads to less pain than longer tourniquet duration [23]. Longer duration of operation and tourniquet may cause increased postoperative pain scores and opioid consumption. In our study, operation and tourniquet duration

were significantly longer in Group G. We think that the reason for the difference of tramadol consumption may be due to the long operation and tourniquet durations of Group G.

Hakkalamani et al. [24] reported that the patients who had femoral+sciatic block for postoperative analgesia in TKA complained about the weight on their feet and the slow movement of their feet. The fact that the genicular nerve block does not cause motor block is one of the most important advantages of a genicular nerve block in ambulatory TKA. In our study, the motor block was eveluated with a Bromage scale for 24 hours, and motor block continued for 12 hours postoperatively in Group FAS, while no motor block was observed in any patient in Group G.

There were some limitations to the present study. The main limitation is the lack of a control group in our study. The fact that operation and tourniquet durations are not similar between the two groups can be considered as a limitation.

In conclusion, genicular block is an effective block in postoperative pain that does not cause motor block in total knee arthroplasty, which can be safely applied, but it was inferior to the combination of femoral+sciatic nerve block.

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TABLES

Table 1: Demographic and Clinical Data

	Group FAS (n=22)	Group G (n=24)	P
Age (years)[#]	69.50±7.14	67.29±7.43	0.311
(Male/Female)	3/19	5/19	0.702
BMI[#] (kg/m^2)	31.93±3.46	32.21±2.50	0.326
ASA (I/II/III)	0/22/0	0/24/0	

ASA: American Society of Anesthesiologists, **BMI:** Body Mass Index, **FAS:**Femoral+Sciatic, **G:** Genicular , [#]**:** Mean±Standart Deviation,[ε]**:**

Table 2: Fentanyl Consumption, Duration of Surgical Procedure and Tourniquet (min)

	Group FAS (n=22)	Group G (n=24)	p
Fentanyl[#](mcg)	111.36±21.44	118.75±24.72	0.282
Duration of surgical procedure (min)	110.91±33.51	131.54±32.76	0.041[*]
Duration of tourniquet (min)	92.43±20.05	109.30±15.71	0.047[*]

FAS: Femoral+Sciatic **G:** Genicular [#]**:** Mean±Standart Deviation ***:** $p < 0.05$

Table 3: Comparison of Patient Controlled Analgesia in Groups

PCA	Group FAS (n=22)	Group G (n=24)	p
Total blous #	8.50±1.71	13.08±1.61	< 0.001[*]
Total request #	9.27±2.02	13.58±1.79	< 0.001[*]
First analgesic time # (min)	578.4±141.6	157.8±102.6	< 0.001[*]
Tramadol consumption # 24h (mg)	211.36±43.45	327.08±40.32	< 0.001[*]

PCA: Patient controlled analgesia, **FAS:** Femoral+Sciatic, **G:** Genicular **#:** Mean+Standard deviation, ***:** $p < 0.05$

Table 4. VAS scores.

VAS[#]	Group FAS (n=22)	Group G(n=24)	p
0. hour[#]	1.36 ± 0.90	3.08 ± 1.34	**< 0.001[*]**
1. hour[#]	1.41 ± 0.79	3.88 ± 1.29	**< 0.001[*]**
6. hour[#]	1.50 ± 1.05	3.13 ± 0.94	**< 0.001[*]**
12. hour[#]	2.23 ± 0.61	2.38 ± 0.92	0.624
24. hour[#]	1.91 ± 0.75	2.17 ± 1.00	0.358

FAS: Femoral+sciatic, **G:** Genicular, **VAS:** Visual Analog Scale **#:** Mean+Standard deviation, *:   p<0.05

Table 5. Bromage Scores.

Length of follow-up	Bromage Score	Group FAS (n=22)	Group G (n=24)	p
0.hour	0	0	24	**< 0.001[*]**
	1	6	0	
	2	16	0	
1.hour	0	0	24	**< 0.001[*]**
	1	7	0	
	2	15	0	
6.hour	0	3	24	**< 0.001[*]**
	1	16	0	
	2	3	0	
12.hour	0	12	24	**0.014[*]**
	1	10	0	
	2	0	0	
24. hour	0	22	24	**1**
	1	0	0	
	2	0	0	

FAS: Femoral+sciatic, **G:** Genicular, *: p<0.05

KÜRESEL ISINMA TEMALI SOSYAL AFİŞ TASARIMLARININ GÖSTERGEBİLİM YÖNTEMİ İLE ANALİZİ

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Özet

Günümüzde teknolojinin hızla gelişim göstermesi afiş tasarımlarında, görselleri daha farklı çözümleme olanağı sağlamıştır. Bu durum, grafik tasarımcıların en sade ve yalın anlatım dilini kullanmalarına neden olmuştur. Bir tasarımın; yalın biçimi, anlamlı bir bütün haline dönüşmesini sağlayan bir veya birden çok parçadan oluşan temel hali, değişmez gerçekliğidir. Afiş tasarımı, kitlelere ulaşma becerisi ve pratikliğiyle geçmişten günümüze görsel iletişim aracı olarak kullanılmaktadır. Afiş tasarımı, reklam, kültürel nitelikli ya da sosyal amaçlı içerikleri görselleştirmektedir. Sosyal afiş tasarımları; insan hakları, küresel ısınma, çevre, sağlık gibi seçilen konu doğrultusunda, ticari kaygılar taşımaksızın bireylerde farkındalık oluşturma niteliği taşımaktadır. Bu çalışma ile seçilen afiş tasarımlarında; göstergebilimsel çözümlemeler ile tasarım sürecinin bir kısmını oluşturan fikir bulma, hedef kitle doğrultusunda fikri görselleştirebilme, görselin oluşturulması sürecinde doğru imgelerin seçimi gibi aşamaların değerlendirilmesi amaçlanmaktadır. Afiş tasarımlarında, mesajın ne olduğunun belirlenmesi ve görsel öğelere dönüştürülerek hedef kitleye ulaştırılması, önemli bir süreçtir. Bu sürecin incelenmesi ve anlatım dilinin çözümlenmesi, yaratıcı fikirler doğrultusunda sosyal afiş tasarım sürecini tanımlayabilmek için gereklidir. Araştırma; literatür taraması yöntemiyle öncelikle afiş tasarımı kavramının çerçevesini çizerek kavrama ait unsurları ortaya koyacaktır. İkinci olarak ise, küreselleşen dünyada evrensel bir sosyal sorun haline dönüşen 'Küresel Isınma' temalı afiş tasarımları üzerinden analiz edecektir. Göstergebilim ölçeklerine göre analizi yapılan ve tanımlanan afiş tasarımları, grafik tasarım eğitimi alan öğrenciler için yeni farkındalıklar oluşturacak öneme sahiptir. Göstergebilim simgelerin yorumlanmasını, üretilmesini veya simgeleri anlama süreçlerini içermektedir. Barthes, Gösterge, gösteren ile gösterilen arasındaki ilişkidir ve bu ilişkinin kurulmasından da anlamlama ortaya çıkar. Göstergebilimde anlamlama, düz anlam ve yan anlam olarak ele alınır. Barthes "kendi göstergebilimini dilbilimin 'çözülmesi' ya da, daha açık bir şekilde, bilimsel bir dilbilim tarafından saf olmadığı gerekçesiyle bir kenara atılmış anlamlamanın tüm yönlerinin incelenmesi olarak betimler" (Culler, 2008: 81). O, dilin saf olmayan yönlerinden; korkuları, yaklaşımları, protestoları, palavraları vb. şeyleri kastetmektedir. Barthes'a göre düzanlam, göstergenin neyi temsil ettiğini, yan anlam ise göstergenin nasıl temsil edildiğini konu edinir. Barthes'a göre bir gösterge "Saussure'ün söylediği gibi temelde bir düzanlam biçimidir. Yani gösteren dolayımsız bir biçimde özel bir nesneyi adlandırır ya da neye gönderme yaptığını açıkça belirtir. Bunun yanı sıra, göstergeler kültürel olarak belirlenmiş anlamlara ya da ayrıca anlamları olan yananlamlara gönderme yapar […] bir gösterge kendi kendine başka göstergenin, bir yananlamın ya da konum gibi kültürel bir değeri gösteren ikincil dereceli bir göstergenin göstereni olabilir. Bu durumda, gösterge toplumdaki konum yapısı gibi kültürün yan anlamsal yönleri için bir 'gösterge taşıyıcısı' oluyor" (Gottdiener, 2005: 30-31). Araştırmada; tasarımcıların 'Küresel Isınma' konusunda yaratıcı süreci nasıl değerlendirdikleri, özellikle sosyal afiş tasarımı olarak ele alındığında, özgün ve etkili

olacak biçimde görsel dili nasıl kullandıklarını çözümlemek ve anlamlandırmak için göstergebilimsel yönteme başvurulmuştur.

Anahtar Kelimeler: Afiş Tasarımı, Küresel Isınma, Grafik Tasarım, Göstergebilim, Küreselleşme.

ANALYSIS OF GLOBAL WARMING-THEMED SOCIAL POSTER DESIGNS WITH INDICATIONAL SCIENCE METHOD

Abstract

Today, the rapid development of technology has provided the opportunity to analyze images in a different way in poster designs. This situation caused graphic designers to use the simplest and simplest language of expression. Of a design; Its simple form is its basic state consisting of one or more parts that enable it to transform into a meaningful whole, its constant reality. Poster design has been used as a visual communication tool from past to present with its ability and practicality to reach the masses. Poster design visualizes content for advertising, cultural or social purposes. Social poster designs; It has the quality of raising awareness in individuals without any commercial concerns in line with the chosen subject such as human rights, global warming, environment and health. In the poster designs chosen with this study; With semiotic analysis, it is aimed to evaluate the stages such as finding an idea, visualizing the idea in line with the target audience, choosing the right images in the process of creating the visual. In poster designs, determining what the message is and transforming it into visual elements and conveying it to the target audience is an important process. Analyzing this process and analyzing the language of expression is necessary to define the social poster design process in line with creative ideas. Research; With the literature review method, firstly, he will reveal the elements of the concept by drawing the framework of the concept of poster design. Secondly, it will analyze through 'Global Warming' themed poster designs that have turned into a universal social problem in the globalizing world. Poster designs analyzed and defined according to semiotics scales are important to create new awareness for students studying graphic design. Semiotics includes the interpretation, production or understanding of symbols. Barthes, the sign, is the relationship between the signifier and the signified, and the signification arises from the establishment of this relationship. In semiotics, meaning is considered as plain meaning and connotation. Barthes "describes his semiotics as the 'dissolving' of linguistics, or, more clearly, as the study of all aspects of signification that have been cast aside by a scientific linguistics on the grounds that it is not pure" (Culler, 2008: 81). He is from the impure aspects of language; their fears, approaches, protests, bragging etc. it means things. According to Barthes, the meaning is the subject of what the sign represents, and the connotation is about how the sign is represented. According to Barthes, an indicator "is basically a form of meaning, as Saussure said. That is, the signifier names a particular object in a direct way or expresses what it refers to. In addition, signs refer to culturally determined meanings or also to connotations that have meanings […] an indicator may itself be the indicator of another sign, a connotation, or a secondary indicator indicating a cultural value such as location. In this case, the indicator becomes an "indicator carrier" for connotative aspects of culture such as position structure in society" (Gottdiener, 2005: 30-31). In the research; The semiotic method was used to analyze and understand how the designers evaluate

the creative process on "Global Warming", and how they use visual language in an original and effective way, especially when considered as social poster design.

Keywords: Poster Design, Global Warming, Graphic Design, Semiotics, Globalization

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

ÇİFTÇİLERİN EKİLECEK ÜRÜN SEÇİMİ DAVRANIŞLARI ÜZERİNE BİR DEĞERLENDİRME-ŞANLIURFA ÖRNEKLEMESİ, TÜRKİYE

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Özet

Tarım nüfusun gıda güvenliği, diğer sektörlere hammadde sağlama, istihdam ve kırsal kalkınma gibi nedenlerden dolayı tüm ülkeler için ayrı bir öneme sahiptir. Tarım sektörü yapısı itibariyle diğer üretim sektörlerinden farklı özellikler arz etmektedir. Tarımsal gelirin, dolayısıyla üretimin temelinde ürün deseni yer almaktadır. Ekilecek ürünlerin seçimi çiftçiler açısından hem geçim ve hem de refah artışı bakımından büyük önem arz etmektedir. Bu çalışmanın amacı Şanlıurfa'daki çiftçilerin ekecekleri ürün seçiminde kararlarını etkileyen faktörlerin belirlenmesidir. Çalışmanın ana materyali Şanlıurfa'da basit tesadüfi örnekleme yöntemiyle seçilen çiftçiler ile yüz yüze yapılan anketlerden elde edilen verilerden oluşmaktadır. Örneklem hacmi %95 güven sınırı ve %5 hata payı ile belirlenmiştir. Anketler 2017 yılında yapılmıştır. Elde edilen veriler SPSS de analiz edilmiştir. Analizlerde Ki-kare testi kullanılmıştır. Bağımlı değişken olan ürün seçimi alışkanlığa dayalı (diğer çiftçiler de ektikleri için), sürekli ekimini yapması nedeniyle bildiği bir ürün, yüksek gelir beklentisi ve tarımsal desteklemelerden faydalanmak alt gruplarından oluşmaktadır. Birçok değişken ürün seçimini etkilemekle birlikte, bu çalışmada bağımsız değişkenler olarak yaş, eğitim seviyesi ve arazi miktarı alınmıştır. Elde edilen sonuçlara göre bağımlı değişken ile eğitim seviyesi ve arazi miktarı arasında istatistiki olarak p<%1 önem düzeyinde anlamlılık olduğu tespit edilmiştir. Yaşın ise ürün seçiminde etkili bir faktör olmadığı belirlenmiştir. Tüm değişkenlerde, ürün seçiminde en önemli alt grup faktörünün tarımsal desteklemeler olduğu belirlenmiştir. Bu anlamda tarımsal desteklemeler, tarımsal üretimin planlanmasında kamu tarafından yönlendirici bir unsur olarak kullanılabilir. Bu çalışmadan elde edilen sonuçlar araştırmacılara, kamu kurum ve kuruluşlarına üretim planlaması konusunda tarımsal politika oluşumu için faydalı bilgiler sunmaktadır.

Anahtar Kelimeler: Tarımsal üretim, ürün deseni, çiftçi tercihleri, Şanlıurfa, Türkiye

AN EVALUATION ON THE BEHAVIORS OF THE FARMERS IN THE CROP SELECTION FOR CULTIVATION: ŞANLIURFA SAMPLING OF TURKEY

Abstract

Agriculture has special importance for all countries due to reasons such as food security of the population, providing raw materials to other sectors, employment, and rural development. The agricultural sector has different characteristics from other production sectors in terms of its structure. The product pattern is the basis of agricultural income and therefore production. The choice of crops to be cultivated is of great importance for farmers both in terms of livelihood and welfare increase. This study aims to determine the factors affecting the decisions of farmers in Şanlıurfa in the selection of the crop to be cultivated. The main material of the study consists of data obtained from face-to-face surveys with farmers selected by a simple random sampling method in Şanlıurfa. The sample size was determined with a 95% confidence limit and a 5% margin of error. Surveys were conducted in 2017. The data obtained were analysed in SPSS. The Chi-square test was used in the analyses. The crop selection, which is the dependent variable, consists of subgroups of habit-based (because other farmers are also cultivating), a crop that is known for its continuous

cultivation, high-income expectation, and benefiting from agricultural supports. Although many variables affect crop selection, age, education level, and land amount are taken as independent variables in this study. According to the results, it was determined that there is a statistically significant relationship exists at a level of p <1% between the dependent variable and the education level and the amount of land. It was determined that the age of the farmer is not an effective factor in crop selection. In all variables, it was determined that the most important subgroup factor in crop selection was agricultural supports. In this sense, agricultural supports can be used by the public as a guiding factor in the planning of agricultural production. The results obtained from this study provide useful information to researchers, public institutions, and organizations for agricultural policy formation on production planning.

Keywords: Agricultural production, crop pattern, farmer preferences, Şanlıurfa, Turkey

GİRİŞ

Tarım nüfusun gıda güvenliği, diğer sektörlere hammadde sağlama, istihdam ve kırsal kalkınma gibi nedenlerden dolayı tüm ülkeler için ayrı bir öneme sahiptir (Aydoğdu et al., 2020). Tarım sektörü yapısı itibariyle diğer üretim sektörlerinden farklı özellikler arz etmektedir. Çoğunlukla doğal koşullara dayalı olarak yapılan tarım, iklim değişikliği ve kuraklıktan en fazla etkilenen sektör konumundadır (Aydogdu and Yenigün, 2016). Ürün desenindeki çeşitlilik, tarımının temel özelliklerinden biri olup, iklim şartları, işletme büyüklüğü, tarımsal gelir, arz ve talep gibi faktörlerle beraber, üretim yapan çiftçilerin mevcut sosyo-ekonomik durumlarına dayalı olarak şekillenmektedir. Küresel olarak nüfus artışı devam ederken, tarım alanları ise azalmaktadır (Sevinç et al., 2019). Tarımsal üretim alanlarının azalmasına bağlı olarak, ürün deseni de değişmektedir. Çünkü ürün deseni dinamik bir kavram olup, zamana ve mekâna bağlı olarak değişimler ve farklılıklar arz edebilmektedir. Bu değişimlerin meydana gelmesinde etkili birçok faktör yer almakla birlikte, en önemli faktörler olarak iklim değişikliği ve artan girdi maliyetleri ön plana çıkmaktadır (Yıldırım, 2020). Tarımsal üretimin planlamasında ürün deseni ayrı bir öneme sahiptir. Çünkü tarımsal üretimin mevsimsel olması nedeniyle genellikle bir önceki yılın fiyatlarına bağlı olarak, bir başka deyişle üretici gelirini etkileyen arz ve talebe dayalı şekillenen tarımsal üretimde, arz ya da talepte yaşanan dalgalanmalar hem üreticileri ve hem de tüketicileri olumsuz yönde etkilerken, toplumsal refah açısından da sorunlar teşkil edebilmektedir. Böyle bir durumda tarımsal üretim planlamasının önemi daha da artmaktadır.

Tarımsal ürün deseninde etkili faktörlerin belirlenmesi, çiftçi davranışları ve beklentileri, tarımsal verimin artırılması, tüketicilerin gıda güvenliğinin sağlanması, üretimin planlanması ve kaynakların etkin kullanımı gibi konular önem arz etmektedir. Şanlıurfa'nın 2017 yılı nüfusu 1.986 milyon kişi olup (Anonim, 2020) Güneydoğu Anadolu Projesi (GAP) kapsamında yer almaktadır. GAP projesi, Türkiye Cumhuriyetinin, su ve toprak kaynaklarına dayalı, en kapsamlı bölgesel kalkınma projesidir (GAP, 2020a). Şanlıurfa'nın toplam tarım alanı 1.054 milyon hektardır (GAP, 2020b), Şanlıurfa sahip olduğu tarım alanları açısından GAP Bölgesinde birinci ve Türkiye'de ise üçüncü sıradadır (Anadolu Ajansı, 2020). Şanlıurfa'nın temel geçim kaynağı tarım ve tarıma dayalı sanayidir (Parlakçı Doğan et al., 2020). Bu çalışmanın amacı Şanlıurfa'daki çiftçilerin ekecekleri ürün seçiminde kararlarını etkileyen faktörlerin belirlenmesidir.

MATERYAL VE YÖNTEM

Araştırmanın ana materyalini, Şanlıurfa'da tarımsal üretim yapan ve basit tesadüfi örnekleme yöntemiyle seçilen çiftçiler ile gönüllü katılım esasına dayalı olarak yüz yüze yapılan anketlerden elde edilen veriler oluşturmaktadır. Şanlıurfa'da 2017 yılında kayıtlı olan çiftçi sayısı 57,175 olup, örneklem hacmi %95 güven sınırı, %5 örneklem hata payı (p=0.8 ve q=0.2) alınarak örneklem hacim tablosundan (Yazıcıoğlu ve Erdoğan, 2004; Lorcu, 2015) 245 olarak bulunmuştur. Elde edilen veriler belirli bir kod planına dayalı olarak Excel'e aktarılmıştır. Eksik ve hatalı olan anketler ayıklandıktan sonra 214 anket verisi SPSS de analiz edilmiştir. Analizlerde Ki kare testi uygulanmıştır. Ki-kare testi, iki veya daha fazla değişken grubu arasında

ilişki olup olmadığının belirlenmesinde kullanılmaktadır. Bu değişkenlerin her ikisi de nitel ya da nice olabileceği gibi biri nicel diğeri de nitel özelliğe sahip olabilir. Ayrıca sürekli ya da kesikli sayısal veri tipinde olduğu halde sonradan nitel veri konumuna dönüştürülen veriler arasında fark olup olmadığının incelenmesinde de kullanılabilmektedir (Lorcu, 2015).

ARAŞTIRMA BULGULARI VE TARTIŞMA

Anketler araştırma sahasına özgü kültürel nedenlerle erkek çiftçiler ile yapılmıştır. Ankete katılan çiftçilerin yaş ortalaması 45.8 yıl olup, %93.4'ü evlidir. Katılımcıların ortalama hane halkı büyüklüğü 7.1 kişidir. Katılımcıların işlemiş oldukları ortalama arazi büyüklüğü 119 dekar olup, %25.7'si ticari hayvancılık yapmaktadır. Katılımcıların %74.3'ü mülk sahibi, %7.5'i kiracı, %5.6'sı ortak ve %12.6'sı ise bunlardan (mülk sahibi, kiracı ve ortak) bir kaçıdır. Katılımcıların %26.2'si sadece pamuk, %13.1'i sadece buğday, %2.8'i sadece mısır, %41.6'sı pamuk, buğday ve mısır dan oluşan ürün desenini ve %16.3'ü ise diğer tarla ürünlerini ekmektedirler.

Bağımlı değişken olan ürün seçimi alışkanlığa dayalı (diğer çiftçiler de ektikleri için), sürekli ekimini yapması nedeniyle bildiği bir ürün, yüksek gelir beklentisi ve tarımsal desteklemelerden faydalanmak alt gruplarından oluşmaktadır. Birçok değişken ürün seçimini etkilemekle birlikte, bu çalışmada bağımsız değişkenler olarak yaş, eğitim seviyesi ve arazi miktarı alınmıştır. Bağımlı değişken olan çiftçilerin ürün seçimi ile bağımsız değişken olan yaş arasındaki Ki-kare analiz sonuçları Tablo 1'de verilmiştir. Tablo 1 sonuçlarına göre yaş bağımsız değişkeni ile ürün seçimi arasında istatistiği olarak anlamlı bir ilişki mevcut değildir. Bu sonuç araştırma öncesi beklentiler ile örtüşmemektedir. Çünkü çiftçinin yaşının tarımsal deneyime dayalı ürün seçiminde etkili olduğu bilinmektedir. Tüm yaş gruplarında ürün seçiminde en etkili faktör, tarımsal üretim çeşidine dayalı olarak yapılan kamusal tarım desteklemeleri olduğu belirlenmiştir.

Tablo 1. Yaş bağımsız değişkenin Ki-Kare test istatistiği sonuçları

Yaş grupları		Ürün seçimi nedenleri				Toplam
		Alışkanlık	Yüksek gelir	Bildiği ürün	Desteklemeden dolayı	
18-35	Gözlenen Değer	2	5	9	19	35
	Beklenen Değer	2,6	6,1	10,1	16,2	35,0
36-45	Gözlenen Değer	7	13	17	32	69
	Beklenen Değer	5,2	11,9	20,0	31,9	69,0
46-55	Gözlenen Değer	5	12	31	27	75
	Beklenen Değer	5,6	13,0	21,7	34,7	75,0
56 ve üzeri	Gözlenen Değer	2	7	5	21	35
	Beklenen Değer	2,6	6,1	10,1	16,2	35,0
Toplam	Gözlenen Değer	16	37	62	99	214
	Beklenen Değer	16,0	37,0	62,0	99,0	214,0
Ki-Kare test istatistiği						
		Değer	df		Asymp. Sig. (2-sided)	
Pearson Chi-Square		12,272	9		0,198	
Likelihood Ratio		12,398	9		0,192	
Linear-by-Linear Association		0,001	1		0,975	
N of Valid Cases		214				

Çiftçilerin eğitim seviyeleri ile ürün seçimi arasındaki analiz sonuçları Tablo 2'de yer almaktadır. Tablo 2 sonuçlarına göre ankete katılan çiftçilerin eğitim seviyeleri ile ürün seçimleri arasında istatistiki olarak p<%1 önem seviyesinde bir anlamlılık tespit edilmiştir. Eğitim seviyesi çiftçilerin gelir ve refah beklentilerini doğrudan etkilemektedir. Eğitim seviyesi arttıkça gelir ve yüksek refah beklentisi de artmaktadır. Bu anlamlılıklar eğitim seviyesindeki ilkokul ve altı grubunda yüksek gelir beklentisi ve tarımsal desteklemeler alt grubunda ortaya çıkarken, eğitim seviyesi alt gruplarından olan ortaokul mezunlarında ise bağımlı değişkenin alışkanlık, bildiği ürün ve tarımsal desteklemelerden dolayı alt gruplarından kaynaklanmaktadır.

Lise ve üstü eğitim seviyesinde ise alışkanlık, bildiği ürün ve tarımsal desteklemelerden dolayı ortaya çıkmaktadır. Tüm eğitim seviyesi alt gruplarında ürün seçiminde en fazla etkili faktör olarak yine tarımsal desteklemeler öne çıkmaktadır.

Tablo 2. Eğitim seviyesi bağımsız değişkenin Ki-Kare test istatistiği sonuçları

Eğitim Seviyesi		Ürün seçimi nedenleri				Toplam
		Alışkanlık	Yüksek gelir	Bildiği ürün	Desteklemeden dolayı	
İlkokul ve altı	Gözlenen Değer	7	18	28	39	92
	Beklenen Değer	6,9	15,9	26,7	42,6	92,0
Ortaokul	Gözlenen Değer	0	9	13	41	63
	Beklenen Değer	4,7	10,9	18,3	29,1	63,0
Lise ve üstü	Gözlenen Değer	9	10	21	19	59
	Beklenen Değer	4,4	10,2	17,1	27,3	59,0
Toplam	Gözlenen Değer	16	37	62	99	214
	Beklenen Değer	16,0	37,0	62,0	99,0	214,0
Ki-Kare test istatistiği						
		Değer		df		Asymp. Sig. (2-sided)
Pearson Chi-Square		20,207		6		0,003*
Likelihood Ratio		23,684		6		0,001*
Linear-by-Linear Association		0,965		1		0,326
N of Valid Cases		214				

Çiftçilerin işlemiş oldukları arazi miktarı ile ürün seçimi arasındaki analiz sonuçları Tablo 3'de yer almaktadır. Tablo 3 sonuçlarına göre çiftçinin işlemiş olduğu arazi miktarı ile ürün seçimi arasında istatistiği olarak, p<%1 önem seviyesinde, anlamlı bir sonuç tespit edilmiştir.

Tablo 3. Arazi miktarı bağımsız değişkenin Ki-Kare test istatistiği sonuçları

Arazi Miktarı (dekar)		Ürün seçimi nedenleri				Toplam
		Alışkanlık	Yüksek gelir	Bildiği ürün	Desteklemeden dolayı	
1-50	Gözlenen Değer	4	11	15	13	43
	Beklenen Değer	3,2	7,4	12,5	19,9	43,0
51-100	Gözlenen Değer	7	17	16	36	76
	Beklenen Değer	5,7	13,1	22,0	35,2	76,0
101-200	Gözlenen Değer	1	6	19	41	67
	Beklenen Değer	5,0	11,6	19,4	31,0	67,0
201 ve üzeri	Gözlenen Değer	4	3	12	9	28
	Beklenen Değer	2,1	4,8	8,1	13,0	28,0
Toplam	Gözlenen Değer	16	37	62	99	214
	Beklenen Değer	16,0	37,0	62,0	99,0	214,0
Ki-Kare test istatistiği						
		Değer		df		Asymp. Sig. (2-sided)
Pearson Chi-Square		22,558		9		0,007*
Likelihood Ratio		24,197		9		0,004*
Linear-by-Linear Association		3,204		1		0,073
N of Valid Cases		214				

Arazi miktarı 1 ile 50 dekar arasında olan çiftçiler ürün seçimini daha önce bildikleri ürünü seçerek yüksek gelir elde etmek için yapmaktadırlar. Bu beklenen bir sonuçtur. Çünkü bu çiftçiler daha çok geçimlik tarım ile uğraşan çiftçiler olup, elde ettikleri tarımsal gelir hane halkının geçimini sağlamaktadır. İşlemiş oldukları arazi miktarı 51 ile 100 dekar arasında olan çiftçiler de ürün seçimi yüksek gelir beklentisi için yapılmaktadır. Arazi miktarı 101 ile 200 dekar arasında olan çiftçiler ise ürün seçimini en fazla tarımsal desteklemelerden faydalanmak için yapmaktadırlar. Bu çiftçiler kamusal tarımsal destekleme oranı yüksek

olan ürünlere yönelmektedirler. Arazi miktarı 201 dekar ve üzerinde olan çiftçiler ise ürün seçimlerini alışkanlıklarına dayalı, daha önceden ekimini yaptıkları bildikleri ürünü seçerek yapmaktadırlar. Yine bu bağımsız değişkende öne çıkan ve en fazla tercih nedeni olan tarımsal desteklemelerden faydalanmak belirleyici konumdadır.

SONUÇ

Tarımın etkilerinin çok yönlü olması ve geniş alanları etkilemesi nedeniyle, gerek gıda güvenliğinin sağlanması ve gerekse de diğer sektörlere sağladığı katkılar yönünden, ülkelerin ekonomik yapısı için de ayrı bir öneme sahiptir. Dünya nüfusunun arttığı, tarımsal üretim ve gıda arzının azaldığı, küresel gıda krizinin yaşanabileceği endişesinin giderek yaygınlaştığı bir ortamda, her ülkenin kendi iç tüketimini karşılayacak ve üretimi kalıcı bir şekilde arttıracak önlemleri alması gerekmektedir. Her ülkenin özellikle stratejik ürünlerde öngörülü davranarak yaşanacak mücbir sebepleri de göz önüne alarak, en azından halkının gıda güvencesini sağlayabilmek için kendi kendine yeterli üretimi planlama ve yapma zorunluluğu vardır (Reis, 2020). Tarımsal gelirin oluşumu, üretici refahının yükselmesi, tarımsal ürün deseninde, ürün bazında arz ve talep dengesinin kurularak üretici ile tüketici menfaat dengesinin sağlanması, tarımda makroekonomik hedefler arasındadır (Özdemir, 2011).

Tarım çiftçilerin geçimlerini sağladıkları ekonomik bir faaliyettir. Genel olarak, tarımsal üretimde ürün seçimine, bir ürünün veya ürün gruplarının yetiştirilebilmesi için uygun agro-ekolojik ortamı belirleyen çeşitli toprak ve iklim parametrelerine dayalı olarak karar verilmektedir. Bununla birlikte çiftçi ürün seçimini yaparken, ürün hakkındaki bilgisi, verimlilik, birim alandan elde edilecek gelir beklentisi ve yapılacak masraflar ile beraber ortaya çıkması beklenen finansal maliyet gibi faktörleri de dikkate almaktadır. Bu nedenle çiftçiler ürün seçiminde önce ekolojik uygulanabilirlik, sonra sosyal yani yaşadıkları ortamda ve sahip oldukları imkanlarla yapılabilirlik ve sonra da pazar koşullarında ve kamusal politikaya dayalı yüksek gelir elde edebilecekleri bir ürünün ekonomik olarak uygulanabilirliğini ararlar. Ürün deseni planlaması bir ülke genelinde makroekonomik seviye de yapılabilirken, çiftçi seviyesinde ise mikroekonomi seviyesinde gerçekleşmektedir. Bu çalışma araştırmacılara, kurum ve kuruluşlara tarımsal üretimin planlanması konusunda faydalı veriler sunmaktadır. Bu çalışmadan elde edilen sonuçlara göre Şanlıurfa'daki çiftçiler ekecekleri ürünleri kamusal tarımsal desteklemeye bağlı olarak belirlemektedir. Dolayısıyla makroekonomik hedeflerin gerçekleşebilmesi için kamusal destekleme kararları çiftçiler için yol gösterici niteliktedir. Türkiye'nin özellikle ithalatçı olduğu ürünlerde, kamusal desteklemelerin arttırılması, çiftçileri bu ürünlerin ekilmesine yönlendirecektir.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

ÇİFTÇİLERİN TARIMSAL KREDİ KULLANIMINI ETKİLEYEN FAKTÖRLER

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Özet

Tarımsal üretimin büyük ölçüde doğa koşullarına bağlı olarak yapılması, çoğunlukla küçük ölçekli işletmeler ve üretimin mevsimsel olması, gelir seviyesinin düşük ve tasarruf imkânlarının kısıtlı olması gibi nedenlerle finansman ihtiyacı sıklıkla ortaya çıkmaktadır. Diğer taraftan geçimlik tarımdan pazar ekonomisine geçiş nedeniyle de tarımsal mekanizasyonun yaygınlaşması ve üretimde yoğun girdi kullanımı finansman ihtiyacını daha da arttırmaktadır. Bu çalışmanın amacı Şanlıurfa'daki çiftçilerin tarımsal kredi kullanımını etkileyen faktörlerin belirlenmesi ve değerlendirilmesidir. Çalışmanın ana materyali Şanlıurfa'da basit tesadüfi örnekleme yöntemiyle seçilen çiftçiler ile yüz yüze yapılan anketlerden elde edilen verilerden oluşmaktadır. Örneklem hacmi %95 güven sınırı ve %5 hata payı ile belirlenmiştir. Anketler 2017 yılında yapılmıştır. Elde edilen veriler SPSS de analiz edilmiştir. Analizlerde Ki-kare testi kullanılmıştır. Bağımlı değişken olan tarımsal kredi kullanımı kendi için de kullanım sıklığı açısından evet, hayır ve zaman zaman olmak üzere üç alt gruba ayrılmıştır. Ankete katılan çiftçilerin %46.7'si tarımsal kredi kullanmaz iken, %22.4'ü düzenli olarak ve %39.9'u ise zaman zaman kredi kullanmaktadır. Tarımsal kredi kullanımını etkileyen pek çok faktör olmakla birlikte, bu çalışmada bağımsız değişkenler olarak yaş, eğitim seviyesi, mülkiyet yapısı ve arazi miktarı alınmıştır. Elde edilen sonuçlara göre bağımlı değişken ile seçilen bağımsız değişkenler arasında p<%1 önem seviyesinde istatistiki olarak anlamlı bir ilişki vardır. Bu anlamlılıklar 55 yaş ve üzerindeki çiftçilerden, eğitim seviyesinde ilkokul ve altı mezunlarından, mülkiyet çeşidin de mülk, kira, ortak ve bunlardan bir kaçını kullananlardan ve arazi miktarında ise 200 dekar ve üzerinde olanlardan kaynaklanmaktadır. Tarımsal üretimin sürdürülebilirliği açısından kredi kullanım imkânlarının kolaylaştırılması ve yaygınlaştırılması gereklidir. Sözleşmeli üretimin yaygınlaştırılması da kredi ihtiyacının giderilmesinde bir yöntem olabilecektir. Bu çalışmadan elde edilen sonuçlar araştırmacılara, kurum ve kuruluşlara tarımsal konularda faydalı veriler sunmaktadır.

Anahtar Kelimeler: Tarımsal üretim, tarımsal kredi kullanımı ve etkili faktörler, Şanlıurfa, Türkiye

THE FACTORS AFFECTING AGRICULTURAL CREDIT USE OF FARMERS: ŞANLIURFA SAMPLING OF TURKEY

Abstract

The need for financing often arises due to reasons such as the fact that agricultural production is largely dependent on natural conditions, mostly small-scale enterprises and the production is seasonal, the income level is low and the savings opportunities are limited. On the other hand, due to the transition from subsistence agriculture to a market economy, the widespread use of agricultural mechanization and the intensive use of inputs in production further increase the need for financing. The purpose of this study is to determine and evaluate the factors affecting the agricultural credit use of farmers in Şanlıurfa. The main material of the study consists of data obtained from face-to-face surveys with farmers selected by a simple random sampling method in Şanlıurfa. The sample size was determined with a 95% confidence limit and a 5% margin of error. Surveys were conducted in 2017. The data obtained were analysed in SPSS. The Chi-square test was used in the analyses. Agricultural credit usage, which is the dependent variable, is divided into three subgroups as yes, no and occasionally (time to time) in terms of usage frequency for itself. While

46.7% of the farmers participating in the survey do not use agricultural credit, 22.4% of them use credits regularly and 39.9% of them use time to time. Although many variables affect crop selection, age, education level, property ownership type, and land amount are taken as independent variables in this study. According to the results, there is a statistically significant relationship between the dependent variable and the selected independent variables at p <1% significance level. These significances arise from farmers aged 55 and over, primary school and below graduates at the education level, ownership of property type, rent, shareholder and a few of them, and land amount of 200 acres or more. In terms of the sustainability of agricultural production, it is necessary to facilitate and expand credit utilization opportunities. The expansion of contracted agricultural production may also be a method to meet the loan need. The results obtained from this study provide useful data for researchers, institutions, and organizations.

Keywords: Agricultural production, agricultural credit usage and affecting factors, Şanlıurfa, Turkey

GİRİŞ

Ekonomik kalkınmada tarımın rolü ülkelerin gelişmişlik düzeyine göre farklılık göstermektedir (Çevik et al., 2015). 1927 yılında Türkiye nüfusunun %75.8'i kırsal alanda yaşarken, adrese dayalı nüfus kayıt sistemi sonuçlarına göre 2019 yılı sonunda bu oran %7.2'ye gerilemiştir. Bunda kentlerin cazibe merkezi olması, büyük şehir yasasıyla halen kırsal da yaşayan nüfusun büyük bir kısmının kentlerde görülmesinin etkisi olsa da, esas sorun kırsalda geçim sıkıntısının olması ve beklenen refah seviyesine ulaşılmamasıdır. Tarım sektörünün en önemli özelliği, kırsal alanın birincil ekonomik faaliyet kaynağı olmasıdır. Bu nedenle tarım sektörü, genel anlamda ülke kalkınmasının önemli bir unsuru olmasının yanında, kırsal kalkınma çabalarının ana sürükleyicisi konumundadır (Çevik et al., 2015). Tüm ekonomik faaliyetlerin temelinde gelir elde etme çabaları vardır. Türkiye'de tarımın en önemli sorunlarından biri de finansman eksikliğidir (Özçelik et al., 2005). Tarımsal üretimin büyük ölçüde doğa koşullarına bağlı olarak yapılması, çoğunlukla küçük ölçekli işletmeler ve üretimin mevsimsel olması, gelir seviyesinin düşük ve tasarruf imkânlarının kısıtlı olması gibi nedenlerle finansman ihtiyacı sıklıkla ortaya çıkmaktadır. Diğer taraftan geçimlik tarımdan pazar ekonomisine geçiş nedeniyle de tarımsal mekanizasyonun yaygınlaşması ve üretimde yoğun girdi kullanımı finansman ihtiyacını daha da arttırmaktadır. Bu anlamda çiftçilerin öz finansman yapısı ve mali güçleri, tarımsal üretimde verimliliklerini ve dolayısıyla gelirlerini doğrudan etkilemektedir. Tarımsal işletmelerin ve çiftçilerin sermaye yapıları ve büyüklükleri farklılıklar göstermektedir. İşletme büyüklüğünün yanı sıra, işletme türüne göre de, bitkisel ve hayvansal üretim de sermaye bileşimi ve ihtiyacı farklılık arz etmektedir. Diğer taraftan ürün deseni de finansman ihtiyacında belirleyici olabilmektedir. Bu anlamda işletme finansmanını en uygun şekilde düzenlemek önemlidir. Bunun için finansman araçları ve fonksiyonlarını işletmenin amacı ile uyumlu hale getirmek gerekmektedir (Çevik et al., 2015).

Tarım işletmelerindeki ekonomik faaliyetlerin düzenli bir şekilde sürdürülmesi için, üretim faaliyetine katılan sabit sermaye ile işletme sermayesinin, üretim hacmine uygun olarak yerine konması veya yenilenmesi gerekir. Bu bakımdan tarımsal işletmelerde finansman, devamlı ve tekrarlanan finansman ile bir defaya mahsus olmak üzere yapılan finansmanlar olmak üzere iki ana grupta ele alınmaktadır. Bir defaya mahsus olmak üzere yapılan finansman, tarımda özel finansman olarak da ifade edilmektedir (Bülbül, 2006). İşletmelerin ve dolayısıyla üreticilerin kısa vadeli finansman temininde yaşadığı güçlükler ise bir başka sorundur. İşletme sermayesinin finansmanı işletmenin toplam finans politikasının bir parçası olup, uzun vadeli finansman politikası ile iç içedir. İşletme sermayesini oluşturan varlıklar da firmanın kendi iç kaynaklarından finanse edilebileceği gibi dışarıdan sağlanacak kaynaklarla da finanse edilmektedir (Aksoy ve Yalçıner, 2008).

Diğer taraftan son dönemlerde tarımsal finansman ihtiyacının giderilebilmesi için sözleşmeli üretimde Türkiye'de yaygınlaşmaya başlamıştır. Burada alıcı ile çiftçi arasındaki sözleşmeye dayanarak, çiftçilerin ürünlerini zamanında, belirli bir kalitede ve miktarda teslim ettiği, alıcının ise çiftçiye alım taahhüdü ve

üretim süreçlerine finansman ve teknik destek sağladığı bir üretim şeklidir. Sözleşmeli tarım kredisi ile çiftçi ve işletmelere ekim-dikim, gübreleme, ilaçlama, sulama, hasat ve pazarlama gibi süreçlerde gereken üretim ihtiyaçlarının finansmanı sağlanabilmektedir. Tarımla sanayinin bütünleşmesine yol açacak bu model, yaygınlaştığı ölçüde tarımın finansman sorununa katkı sağlayacaktır. Bu uygulama aynı zamanda tarımsal ürünlerin pazarlanması ve tarıma dayalı sanayiinin zamanında ve nitelikli hammadde talebini karşılamada da uygun bir model olabilecektir (Özçelik et al., 2005). Ancak bu model de ürün kalitesi, miktarı, teslimat zamanı gibi nedenlerle çeşitli sorunlar yaşanmaktadır. Şanlıurfa'nın temel geçim kaynağı tarım ve tarıma dayalı sanayidir (Parlakçı Doğan et al., 2020). Bu çalışmanın amacı Şanlıurfa'daki çiftçilerin tarımsal kredi kullanımını etkileyen faktörlerin belirlenmesi ve değerlendirilmesidir.

MATERYAL VE YÖNTEM

Araştırmanın ana materyalini, Şanlıurfa'da tarımsal üretim yapan ve basit tesadüfi örnekleme yöntemiyle seçilen çiftçiler ile gönüllü katılım esasına dayalı olarak yüz yüze yapılan anketlerden elde edilen veriler oluşturmaktadır. Şanlıurfa'da 2017 yılında kayıtlı olan çiftçi sayısı 57,175 olup, örneklem hacmi %95 güven sınırı, %5 örneklem hata payı (p=0.8 ve q=0.2) alınarak örneklem hacim tablosundan (Yazıcıoğlu ve Erdoğan, 2004; Lorcu, 2015) 245 olarak bulunmuştur. Elde edilen veriler belirli bir kod planına dayalı olarak Excel'e aktarılmıştır. Eksik ve hatalı olan anketler ayıklandıktan sonra 214 anket verisi SPSS de analiz edilmiştir. Analizlerde Ki kare testi uygulanmıştır. Ki-kare testi, iki veya daha fazla değişken grubu arasında ilişki olup olmadığının belirlenmesinde kullanılmaktadır. Bu değişkenlerin her ikisi de nitel ya da nice olabileceği gibi biri nicel diğeri de nitel özelliğe sahip olabilir. Ayrıca sürekli ya da kesikli sayısal veri tipinde olduğu halde sonradan nitel veri konumuna dönüştürülen veriler arasında fark olup olmadığının incelenmesinde de kullanılabilmektedir (Lorcu, 2015).

ARAŞTIRMA BULGULARI VE TARTIŞMA

Anketler araştırma sahasına özgü kültürel nedenlerle erkek çiftçiler ile yapılmıştır. Ankete katılan çiftçilerin yaş ortalaması 45.8 yıl olup, %93.4'ü evlidir. Katılımcıların ortalama hane halkı büyüklüğü 7.1 kişidir. Katılımcıların işlemiş oldukları ortalama arazi büyüklüğü 119 dekar olup, %25.7'si ticari hayvancılık yapmaktadır. Katılımcıların %74.3'ü mülk sahibi, %7.5'i kiracı, %5.6'sı ortak ve %12.6'sı ise bunlardan (mülk sahibi, kiracı ve ortak) bir kaçıdır. Katılımcıların %26.2'si sadece pamuk, %13.1'i sadece buğday, %2.8'i sadece mısır, %41.6'sı pamuk, buğday ve mısır dan oluşan ürün desenini ve %16.3'ü ise diğer tarla ürünlerini ekmektedirler.

Bağımlı değişken olan tarımsal kredi kullanımı kendi için de kullanım sıklığı açısından evet, hayır ve zaman zaman olmak üzere üç alt gruba ayrılmıştır. Ankete katılan çiftçilerin %46.7'si tarımsal kredi kullanmaz iken, %22.4'ü düzenli olarak ve %39.9'u ise zaman zaman kredi kullanmaktadır. Tarımsal kredi kullanımını etkileyen pek çok faktör olmakla birlikte, bu çalışmada bağımsız değişkenler olarak yaş, eğitim seviyesi, mülkiyet yapısı ve arazi miktarı alınmıştır.

Yaş bağımsız değişkeni ile tarımsal kredi kullanımı arasındaki test sonuçları Tablo 1'de verilmiş olup, istatistiki olarak, p<%1 önem seviyesinde bir anlamlılık tespit edilmiştir. Yaş değişkenin de tarımsal kredi kullanmayanlarda en fazla farklılıklar 56 yaş ve üzerinde olan çiftçilerde ortaya çıkmaktadır. Bir başka ifade ile en az tarımsal kredi kullananlar bu grupta yer almaktadır. Bu beklenen bir sonuçtur. Çünkü yaş ilerledikçe borçlanmanın getirdiği riski yaşlı çiftçiler almak istememektirler. Diğer taraftan kredi kullanımı için gerekli olan yasal prosedürler de bu gruptaki çiftçiler tarafından zor ve yerine getirilmesi zaman alan işlemler olarak algılanmaktadır. Oransal olarak en fazla düzenli kredi kullanan grup ise 36 ile 45 yaş arasında olan çiftçilerdir. Zaman zaman kredi kullanımı ise en fazla 46 ile 55 yaş arasında olan çiftçilerde ortaya çıkmaktadır. Tüm bu sonuçlara bağlı olarak, tarımsal kredi kullanımı ile yaş arasında ters yönlü bir

ilgileşimin olduğu söylenebilir. Bir başka deyişle yaş arttıkça tarımsal kredi kullanım oranı ve sıklığı azalmaktadır. Bu sonuç genel literatür ile de uyumludur.

Eğitim bağımsız değişkeni ile tarımsal kredi kullanımı test sonuçları Tablo 2'de yer almaktadır. Tablo 2 sonuçlarına göre çiftçilerin eğitim seviyeleri ile tarımsal kredi kullanımı arasında istatistiki olarak, p<%1 önem seviyesinde, anlamlı bir durum tespit edilmiştir.

Tablo 1. Yaş değişkeni ile tarımsal kredi kullanımı test istatistiği

Yaş değişkeni grupları		Tarımsal Kredi Kullanım Sıklığı			Toplam
		Hayır	Evet	Zaman zaman	
18-35 arası	Gözlenen Değer	19	9	7	35
	Beklenen Değer	16,4	7,9	10,8	35,0
36-45 arası	Gözlenen Değer	26	15	28	69
	Beklenen Değer	32,2	15,5	21,3	69,0
46-55 arası	Gözlenen Değer	28	16	31	75
	Beklenen Değer	35,0	16,8	23,1	75,0
56 yaş ve üzeri	Gözlenen Değer	27	8	0	35
	Beklenen Değer	16,4	7,9	10,8	35,0
Toplam	Gözlenen Değer	100	48	66	214
	Beklenen Değer	100,0	48,0	66,0	214,0

Ki-kare test sonuçları			
	Değer	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27,135	6	0,000*
Likelihood Ratio	36,683	6	0,000*
Linear-by-Linear Association	3,176	1	0,075
N of Valid Cases	214		

Eğitim seviyesinin tüm alt gruplarında yer alan çiftçiler tarımsal kredi kullanımına ilişkin vermiş oldukları hayır ve zaman zaman cevapları ile istatistiki olarak anlamlı farklılıkların oluşmasına sebep olmuşlardır. Oransal olarak en fazla hayır cevabı ilkokul ve altı eğitim seviyesinde oluşurken, zaman zaman cevabı ortaokul mezunlarında tespit edilmiştir. Evet, cevabının ise tüm eğitim seviyelerinde yaklaşık aynı olduğu belirlenmiştir.

Tablo 2. Eğitim seviyesi değişkeni ile tarımsal kredi kullanımı test istatistiği

Eğitim seviyesi değişkeni grupları		Tarımsal Kredi Kullanım Sıklığı			Toplam
		Hayır	Evet	Zaman zaman	
İlkokul ve altı	Gözlenen Değer	52	23	17	92
	Beklenen Değer	43,0	20,6	28,4	92,0
Ortaokul	Gözlenen Değer	15	13	35	63
	Beklenen Değer	29,4	14,1	19,4	63,0
Lise ve üstü	Gözlenen Değer	33	12	14	59
	Beklenen Değer	27,6	13,2	18,2	59,0
Toplam	Gözlenen Değer	100	48	66	214
	Beklenen Değer	100,0	48,0	66,0	214,0

Ki-kare test sonuçları			
	Değer	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,520	4	0,000*
Likelihood Ratio	28,337	4	0,000*
Linear-by-Linear Association	1,052	1	0,305
N of Valid Cases	214		

Mülkiyet çeşidi değişkeni ile tarımsal kredi kullanım durumuna ilişkin test istatistiği sonuçları Tablo 3'de yer almaktadır. Tablo 3 sonuçlarına göre çiftçilerin işlemiş oldukları arazinin mülkiyet çeşidiyle tarımsal

kredi kullanımı arasında p<%1 önem seviyesinde istatistiki olarak anlamlı bir farklılık vardır. Bu farklılıklar mülk sahibi, kiracı ve bunlardan birkaçı (mülk, kira ve ortak) olanların vermiş oldukları evet ve zaman zaman cevaplarından kaynaklanmaktadır. Ortakçılık yapan grupta ise anlamlı bir farklılık gözlenmemiştir.

Tablo 3. Arazinin mülkiyet çeşidi değişkeni ile tarımsal kredi kullanımı test istatistiği

Çiftçinin işlemiş olduğu arazinin mülkiyet çeşidi		Tarımsal Kredi Kullanım Sıklığı			Toplam
		Hayır	Evet	Zaman zaman	
Mülk	Gözlenen Değer	76	31	52	159
	Beklenen Değer	74,3	35,7	49,0	159,0
Kira	Gözlenen Değer	6	0	10	16
	Beklenen Değer	7,5	3,6	4,9	16,0
Ortak	Gözlenen Değer	7	2	3	12
	Beklenen Değer	5,6	2,7	3,7	12,0
Bunlardan birkaçı	Gözlenen Değer	11	15	1	27
	Beklenen Değer	12,6	6,1	8,3	27,0
Toplam	Gözlenen Değer	100	48	66	214
	Beklenen Değer	100,0	48,0	66,0	214,0
Ki-kare test sonuçları					
	Değer		df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	30,427		6	0,000*	
Likelihood Ratio	32,950		6	0,000*	
Linear-by-Linear Association	1,214		1	0,271	
N of Valid Cases	214				

Arazi miktarı değişkeni ile tarımsal kredi kullanım durumuna ilişkin test istatistiği sonuçları Tablo 4'de yer almaktadır. Tablo 4 sonuçlarına göre çiftçilerin işlemiş oldukları arazi miktarıyla tarımsal kredi kullanımı arasında p<%1 önem seviyesinde istatistiki olarak anlamlı bir farklılık vardır.

Tablo 4. Arazinin miktarı değişkeni ile tarımsal kredi kullanımı test istatistiği

Çiftçinin işlemiş olduğu arazi miktarı		Tarımsal Kredi Kullanım Sıklığı			Toplam
		Hayır	Evet	Zaman zaman	
1-50 dekar	Gözlenen Değer	28	6	9	43
	Beklenen Değer	20,1	9,6	13,3	43,0
51-100 dekar	Gözlenen Değer	42	16	18	76
	Beklenen Değer	35,5	17,0	23,4	76,0
101-200 dekar	Gözlenen Değer	26	9	32	67
	Beklenen Değer	31,3	15,0	20,7	67,0
201 dekar ve üzeri	Gözlenen Değer	4	17	7	28
	Beklenen Değer	13,1	6,3	8,6	28,0
Toplam	Gözlenen Değer	100	48	66	214
	Beklenen Değer	100,0	48,0	66,0	214,0
Ki-kare test sonuçları					
	Değer		df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	42,820		6	0,000*	
Likelihood Ratio	39,003		6	0,000*	
Linear-by-Linear Association	13,191		1	0,000	
N of Valid Cases	214				

Hayır, cevabı verenlerde anlamlı farklılıklar tüm arazi miktarı alt gruplarında ortaya çıkmaktadır. Özellikle 100 dekar ve altında arazi miktarı olan çiftçilerde bu durum daha da belirgin olmaktadır. Arazi miktarı 100 dekarın üzerinde olduğunda hayır cevabı verenlerde oransal azalmalar gözlenmektedir. Arazi miktarı arttıkça kredi kullanım oranı da artan eğilim göstermektedir. Oransal olarak en fazla kredi kullanımı 201 dekar ve üzeri tarımsal arazi işleyen çiftçilerde ortaya çıkmaktadır. Zaman zaman kredi kullananların en yoğun olduğu grup 101 ile 200 dekar arasında arazi miktarını işleyen çiftçilerde ortaya çıkmaktadır.

SONUÇ

Türkiye'de tarımın mili gelire olan oranının giderek nispi olarak azalması, ülkemizde yaşanan ekonomik gelişme sürecinin doğal bir sonucudur. Ancak Türkiye gibi nüfusun önemli bir bölümünün geçiminin tarım ve tarıma dayalı sanayiden sağlandığı ülkelerde, tarım sektörünün ekonomi içindeki önemi devam etmektedir. Tarım sektöründe istihdam edilenlerin gelirleri diğer sektörlere oranla daha düşük olup, sektör içindeki gruplar arasındaki gelir dağılımında da önemli farklılıklar bulunmaktadır (TOBB, 2014). Bundan dolayı tarımsal sürdürülebilirliğin sağlanması için tarım sektöründeki finansman sorunun, özellikle de kısa vadeli ve sezonluk kredi ihtiyacının giderilmesi önem arz etmektedir. Çünkü kırsal alanda geçimlik hane halkı tüketim harcamalarından dolayı tasarruf oranı düşüktür. Tarım işletmelerinin finansmanı, tarımda sermaye temini ve kullanımı ile ilgili çalışmaları kapsar. Bu alandaki gelişmeler, tarımın ve işletmelerin yapısal sorunlarının devam etmesi, ekonomik yapıda kronik hale gelen sorunlar nedeniyle yeterli ölçüde olamamıştır. Aynı zamanda bu yapı ve koşullar kredi konusunda etkin organizasyon ve yapılanmayı da önlemiştir (Özçelik et al., 2005).

Tarım ürünlerinin arz ve talep esnekliklerine bağlı olarak ortaya çıkan fiyat dalgalanmaları, çiftçilerin gelirlerine doğrudan yansımaktadır. Beklenen geliri elde edemeyen çiftçiler faaliyetlerini sürdürebilmek için krediye ihtiyaç duymaktadır (İnan, 2016). Çoğu ürünü yılda bir satılan, buna karşılık bütün bir yıl masraf yapılan tarım sektöründe, sermayenin devir hızı yavaş ve tasarruf edilerek sermaye oluşturmak zor olduğundan kullanılabilir sermaye miktarı çoğu zaman yetersiz kalmaktadır. Bu yetersizlik, üretimin artırılması için gerekli faaliyetlerin gerçekleştirilmesini, işletmelerin rasyonelleştirilme olanaklarını ve dolayısıyla çiftçinin gelir düzeyinin yükseltilmesini geniş ölçüde engellemektedir. Bu durumda öz sermayesi yetersiz olan çiftçilerin, üretim faaliyetlerini zamanında ve eksiksiz yerine getirebilmeleri, satın alma ve yatırımlarını aksamadan yapabilmeleri için uygun şartlarla tarımsal kredi ile desteklenmeleri gerekmektedir (Yurdakul et al., 1994; Çetin, 2014). Kar oranının düşük ve belli dönemde girdi kullanımının gerekli olduğu dikkate alınırsa tarımsal kredinin faiz oranının düşük olması, zamanında ve yeterli miktarda kolaylıkla kullanılması özelliklerinin bulunmasının üreticiler için büyük önemi vardır (Özçelik et al., 2005). Kredi temini sorunu çözümünde sözleşmeli üretimin de bir model olduğu günümüzde, bunun yaygınlaştırılmasının sağlanabilmesi de olumlu katkı yapacaktır. Bu çalışmadan elde edilen sonuçlar araştırmacılara, kurum ve kuruluşlara tarımsal üretimin finansman sorununun çözümünde faydalı olabilecek veriler sunmaktadır.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Hematological and serum biochemical profiles of a natural African swine fever infection in pigs

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Abstract

African swine fever (ASF) is a contagious viral disease that affects pigs of all ages, inducing hemorrhagic fever with high mortality and severe threat to pig production. This study investigated the hematological and serum biochemical abnormalities associated with a natural African swine fever (ASF) infection in pigs. A total of 100 serum samples of pigs from piggery suspected of ASF infection were screened for antibody detection by the Enzyme-Linked Immunosorbent Assay (ELISA). Thirty-two blood samples from serologically positive pigs and 32 negative pigs were subjected to hematological and serum biochemical analyses following standard procedures. The results show that the mean values of the red blood cell (RBC) count, total white blood cell (TWBC) count, absolute lymphocyte count, absolute monocyte count, serum total protein (TP) and globulin were significantly ($p < 0.05$) lower while the mean corpuscular volume (MCV), mean corpuscular hemoglobin concentration (MCHC), absolute neutrophil countand serum gamma glutamyltransferase (GGT) were significantly ($p < 0.05$) higher in the infected than in the healthy pigs. There were no significant differences in the mean values of the packed cell volume (PCV), hemoglobin concentration, absolute eosinophil count, cholesterol, alanine aminotransferase (ALT)and aspartate aminotransferase (AST) activities between the infected and healthy pigs. Hence, natural ASF infection causes alterations in the hematological and serum biochemical parameters in infected pigs. The generated data could complement the existing laboratory diagnostic techniques such as Polymerase Chain Reaction (PCR), Direct Fluorescence Antibody test (FAT), Indirect Fluorescent Antibody test (IFA) and ELISA in the diagnosis of ASF.

Keywords: African swine fever, pigs, hematological analysis, biochemical analysis

INVESTIGATION OF THE MACROANATOMICAL STRACTURE OF HEART IN DALMATIAN PELICANS (PELECANUS CRISPUS)

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Abstract

The study was aimed to determined of the macro-anatomical structure of the Dalmatian pelicans heart. Dalmatian pelicans are among the waterfowl with a habitat in marshes and shallow ponds. In the study, the heart structure of three adult (3 female) Dalmatian pelicans found dead by the villagers on the sides of the ponds between 2015 and 2019 and brought to the Veterinary Health Practice and Research Center was used. Dissection was investigated into the cavum thoracis of dead Dalmatian pelicans. All of the macro-anatomical structures of the heart are photographed. The heart of the Dalmatian pelican was topographically located in the thoraco-abdominal region. The outer surface of the heart was covered by a shiny and slippery epicardium. The sulcus coronarius in the dorsal was covered with a thick layer of fat. The anatomical structures in the inner structure of the heart were determined.

As a result, the macro-anatomical features of the heart structure of Dalmatian pelicans were revealed in the examinations. This study found great findings in terms of providing a basis for studies on the heart of this species.

Key words: Heart, Macro-anatomi, Pelecanus crispus

INTRODUCTION

The Dalmatian pelican is a bird with curved and fluffy feathers on the head, the body feather color is grayish, white in the Pelecanidae family. (Trakus, 2020; Vikipedi, 2020). Ponds, reeds and riverside habitats. In poultry species, circulation system is important for flying (Strunk and Wilson, 2003) While there are various studies about the heart and its morphological structure, no detailed study has been found on the macroanatomical structure of the Dalmatian pelican heart.

The heart is cone-shaped, located in the cranial of the median part of the thoracoabdominal region (Rigdon and Frolich 1970; Baumel, 1975; Aydınlıoğlu et al. 1998; Dursun, 2002). Thoracoabdominal posture of the heart it varies according to age, sex, species and general working status of the animal. The heart consists of three layers in mammals and poultry, namely the endocardium, myocardium and the epicardium (Dursun, 2002). The heart consists of four chambers, namely the right atrium, left atrium, right ventricle and left ventricle in mammals and birds (Nickel et al.1981; Dursun 2002). The interatrial septum atria separate the ventricles in the interventricular septum. (Nickel et al.1981; Dursun 2002).

Various studies have been carried out in domestic birds (Baumel, 1975; Nickel, 1977; Nickel et al.1981; Aydınlıoğlu et al., 1998; Dursun, 2002), chukar partridges (Fidan and Çakmak; 2018), duck (Rigdon and Frolich, 1977), white pelican (Yoldaş and Dayan, 2012), brown pelican (Terese and Stoskopf, 1989) and turkey (Çakmak, 2008), Ostrich (Yoldaş, 2007) about the winged heart.

The aim of the study is to reveal the findings about the morphological structure of the heart, which is the main organ of the circulatory system, the Dalmatian pelican.

The findings of the research are thought to be important in terms of providing a basis for scientific studies on the heart of water birds living with different species in nature.

MATERIALS AND METHODS

In the research material, the liver of three adult (3 female) dead crested pelicans, who were found dead in ponds and reeds by the villagers between 2015 and 2019 and brought to the ASU Veterinary Health, Application and Research Center for diagnosis, were examined.

In the study, the morphological structure of the heart was revealed by dissecting the cavum thoracis and cavum abdominis. Inspected parts were photographed (Canon CE500). Nomina Anatomica Veterinaria (ICVGAN, 2017) and Nomina Anatomica Avium (Baumel and Witmer, 1993) were used in writing terminological expressions.

RESULTS

The heart of the Dalmatian pelican was found topographically in the middle of the thoracoabdominal region. The heart structure of the Dalmatian pelican was in the shape of a flat cone. The outer surface of the heart was covered by a shiny and slippery pericardium. The dorsal part of the heart was surrounding the sulcus coronarius groove. The sulcus coronarius groove was covered with a dense layer of oil. Margo cranialis was concave, margo caudalis edge was convex (Figure 1).

DISCUSSION

Dursun (2002) cranial of cavum thoracoabdominalis, thoracoabdominalis in ostrich, Fidan and Çakmak (2018) in chukar partridge and turkey (2008) in caudal of thoracoabdominal region, in other literature the heart extends from cavum thoracoabdominalis craniodorsal to caudaoventral in poultry. It has been reported (Nickel et al. 1977; Poels, 1994). The Dalmatian pelican was located in the middle of the thoracoabdominal region.

The shape of the apex of the heart in poultry (Dursun, 2002) is pointed, the apex part is in the form of a cone, Baumel (1975) has the shape of a sharp long cone, Çakmak (2007) reported that it is in the form of a pointed cone in a chukar partridge, and a cone close to a round in the Yoldaş (2007) ostrich. The heart structure of the Dalmatian pelican was shaped like a flat cone, similar to that of birds.

Fidan and Çakmak (2018) reported that the heart is covered with pericardium, a slippery, transparent membrane in chukar partridge. In the research material, the Pelican, the pericardium enveloped the outer surface of the heart.

Nickel (1977) reported that the heart was surrounded by sulcus coronarius in domestic birds, Baumel (1975) in poultry, Fidan and Çakmak (2018) in chukar partridge and Çakmak G and Karadag H (2008) in turkey

In the Dalmatian pelican, the sulcus coronarius was covered with a thick layer of fat, surrounding the heart.

CONCLUSION

As a result, this study is a valuable study in terms of providing a source for studies on Dalmatian pelican birds living with different species in nature.

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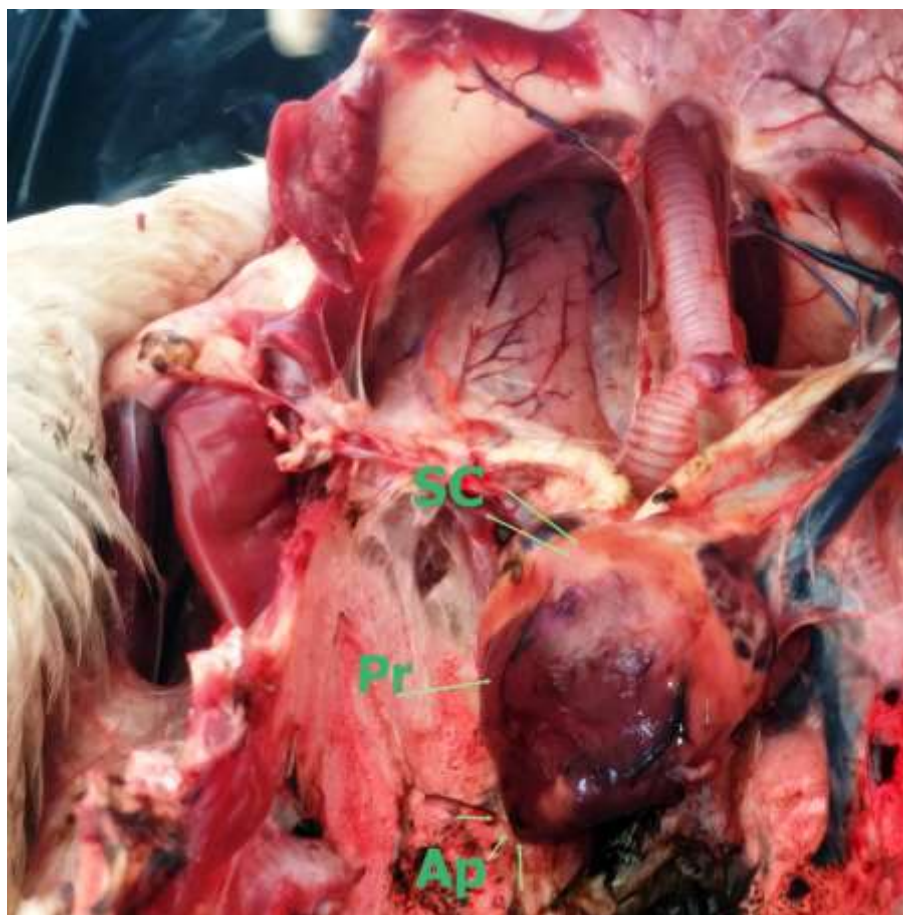
Figure 1. External view of the Dalmatian pelican heart. **Pr.**Pericardium, **Ap.** Apex cordis, **Sc.** Sulcus coronarius

EFFECT OF HERDSMEN-FARMERS CONFLICT ON LIVELIHOOD ASSETS OF FARMING COMMUNITIES IN BENUE STATE, NIGERIA

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Abstract
Conflict threatens the livelihood assets of farming communities especially the very poor farmers because it directly affects their primary livelihood activity. Thus, the aim of this paper is to assess the effects of farmers-herdsmen conflicts on livelihood assets of farming communities in Benue state, Nigeria. The study adopted a survey design and a sample of 150 respondents was purposively selected from three most affected farming communities in Benue state. Data were collected on livelihood activities and livelihood assets (physical, human, financial and social assets) from the field using structured questionnaire, while the analysis was done using descriptive statistics. The study revealed that the conflicts between farmers and herdsmen have forced farmers out of their farming communities with resultant short and long term effects on food production and supply. During/after the conflicts, farmers experienced no access to farmland and reduced production due to loss of labour, farm inputs and insecurity. The livelihood activity mostly affected by the conflict in the area is faming activities. The following livelihood assets were seriously affected: physical assets (Mean=2.7), financial assets (Mean=2.61), human assets (Mean=2.43), natural assets (X=2.2) and social assets (Mean=2.1). As a result of the loss of key livelihood assets, many households changed their primary livelihood activity. The study concludes that conflict between farmers and herdsmen has serious effect on livelihood assets of farming households in the area. The study recommended peaceful co-existence between farmers and herdsmen. Also, ranches should be established in order to encourage herdsmen to adopt modern ways of cattle rearing and breeding.

Key words: Conflict, Livelihood, Farming Communities, Herdsmen, Farmers

Aktif Spor Yapan Çocukların Spordan Zevk Alma Nedenlerinin İncelenmesi

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Özet

Bireyde doğumdan itibaren başlayan hareket etme isteği yıllar içerisinde uygun yönlendirmeler yapılmadığında çeşitli sorunları beraberinde getirebilir. Bu bağlamda gerek bireylerin fiziksel ihtiyaçlarını karşılama konusunda gerekse psikolojik ve sosyal gelişim ihtiyaçlarını karşılama konusunda hem bireysel hem de kolektif yapılabilen maruf bir konu olan spor karşımıza çıkmaktadır. Sporun, çocuklarda ve gençlerde istenmeyen davranışların azalması veya ortadan kalkması ile ilgili olan sayısız çalışmanın olduğu söylenebilir. Sporun bu etkisinin yanında birey tarafından neye göre tercih edildiği merak konusudur. friendship. Bazen mahalledeki sporcu bir büyüğe özenilirken bazen belki de yakından hiç göremeyeceğimiz, dünyanın bir ucundaki ünlü futbolcuya özenmeyle bir branş seçilebilmektedir. Bu sebeple spor branşını seçme durumunu etkileyen çok sayıda etmenin olabileceği düşünülmektedir. Fakat bir başarı durumunun gelişebilmesi için yapılan spor branşından zevk alınıyor olması gerekmektedir. Başarı için uzun antrenman dönemlerinde, sancılı geçirilen zamanlar olacaktır. Bu aşamada bireyin sporu yapmaya devam edebilmesi için gerçekten yaptığı spor branşından zevk alıyor olması gerekmektedir. Bu araştırmada aktif spor yapan bireylerin cinsiyet, spor yapma yılı ve spor yapma seviyelerine göre değerlendirerek spordan zevk alma nedenleri incelenmiştir. Araştırma 2019 yılında farklı branşlarda aktif olarak antrenman yapan, turnuva ve müsabakalara katılan bireyler üzerinde yapılmıştır. Örneklem grubunu yaşları 10-14 olan 208'i kadın, 226'sı erkek toplamda 434 sporcu oluşturmuştur. Gerekli literatür araştırması yapıldıktan sonra yazar tarafından düzenlenen kişisel bilgi formu ve Wiersma (2001) tarafından yapılan Türkçe uyarlamasını Çimen ve Gürbüz'ün (2010) yaptığı Spordan Zevk Alma Kaynakları Ölçeği (SZAKÖ) uygulanmıştır. Bulgular cinsiyet değişkeni ve öz kaynaklı yeterlik, yarışma heyecanı, efor harcama, dış kaynaklı yeterlik, akran bağlılığı ve olumlu aile desteği alt boyutlarına göre incelendiğinde kadın sporcularla erkek sporcular arasında bazı parametrelerde $p < 0,05$ düzeyinde anlamlı fark tespit edilmiştir. Spor yapma yılı, spor yapma seviyesi değişkenlerinde de $p < 0,05$ düzeyinde anlamlı farklar tespit edilmiştir. Eğitim seviyesi değişkeninde anlamlı bir fark bulunamamıştır.

Anahtar Sözcükler: Spor, spor yapma yılı, spordan zevk alma

Investigation of The Reasons Why Active Sport Doing Children Enjoying Doing Sports

Abstract

Movement desire begins with bear and goes increasingly through life, but if that desire doesn't oriented by professionals, varies of problems may come up. At that point sport becomes with it's significance through satisfying human social, physical and psychological needs either individually or collective. It is obvious from recent studies pointed out that sportive activities eliminates such aggressive or misbehave children behaviours. Beside those effects of sport it is not so clear why to choose to do which sport branch is tended to. It can be explain like sometimes a branch that brings lot of success around the world, sometimes only a suggestion of a physical education teacher from rural. Either sometimes branch is chosen like with caring for an adult at home bay, or admiring a famous footballer at the other side of world. Therefore it is thought there is a lot of reasons fort o choose kind of sport branch. But it is ought to be needed to enjoy from the sport branch for to success. There will be hardworks and hard times for success along long exercise hours. Hence sport branch should be joyfull to person. This study aimed to emerge active sport doing individuals reasons of enjoy from doing sports according to gender, years of doing sports and levels of doing sports. Active training sportmen who participated to different branches of competitions and tournaments of 2019 December joined to this study. Samples are ages between 10-14 and 208 female, 226 male totally 434 sportmen. After literature review, a personal information form prepared by writer and Wiersma (2001)'s Sources of Enjoyment in Youth Sport Questionnaire (SEYSQ) translated in Turkish by Çimen and Gürbüz used for data collect. Findings showed that according to gender, self-sufficiency, excitement of race, efforting, outsourced sufficiency, friendship and positive family support basic dimensions, there are significance difference between female sportmen and male sportmen at a meaning level of $p<,05$. Years of doing sports and levels of doing sports variants showed meaningful difference at a meaning level of $p<,05$ too. There isn't a meaningful difference at education levels.

Key Words: Sport, Years of Doing Sports, Enjoying from Sports

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

How we manage type 3 open fractures requiring emergency approach

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Abstract
Open fractures are complex and difficult to treat because they are characterized with extensive soft tissue damage by the high-energy trauma. Success is associated with early treatment, ensuring soft tissue coverage, and the provision of infection prophylaxis in this type of fractures. Type-3 open fractures are accompanied by soft tissue injuries larger than 10 cm according to Gustilo-Anderson's classification. In this study, we aimed to analyse our urgent treatment strategy in type-3 open fractures.
Patients with Type-3 open fractures; who were admitted to the emergency department and referred to our Orthopaedics and Traumatology Department of Necmettin Erbakan University Meram Medical Faculty for treatment and follow-up in the years from 2017 to 2020, were included in the study to analyze the distribution of age, gender, cause of injury, the location of the fracture, the type of the initial surgery performed, and microbiological culture findings.

99 patients with type-3 open fractures; who were treated in our clinic in the years between 2017 and 2020 were included in the study. Of the study patients, 82 (82.8%) were males and 17 (17.1%) were females. Nine (9.1%) patients were in the paediatric age group. The cause of the fracture was an out-of-vehicle traffic accident in 35 (35.3%) patients, gunshot wounds in 30 (30.3%) patients, falls from height in 15 (15.1%) patients, a motor-vehicle traffic accident in 12 (12.1%) patients, and miscellaneous in 7 (7.1%) patients. A total of 99 patients were included in the study; comprising 58 (54.2%) tibia fractures, 25 (23.3%) femur fractures, 13 (12.1%) forearm fractures, and 11 (10.2%) humerus fractures. In 8 (8.1%) patients, there were open fractures of two different bones simultaneously. Vascular problems; requiring vascular interventions including arterial repair directly or embolectomy, were observed in 6 patients (6.1%). The examination of these fractures for the type of the initial orthopaedic surgery revealed that an external fixator was applied to 90 (84.1%) bones, an intramedullary fixation was performed in 14 (13.1%) bones, and plate osteosynthesis was performed in 3 (2.8%) bones. When 45 (45.5%) patients with suspected infection in the postoperative period were examined for the causative agent; it was observed that no bacterial growth occurred in 9 (9.1%) patients, a single causative agent was detected in 21 (21.2%) patients, and the cause of infection was polymicrobial in 15 (15.1%) patients.

It was found that type-3 open fractures were approximately 5 times more common in men than women, while they were 10 times more common in adults than children. Non-vehicle traffic accidents were the most common cause of type-3 open fractures. They were 3.5 times more frequently observed in the lower limbs compared to the upper limbs. Tibia fractures accounted for more than half of the type-3 open fractures. The most common orthopaedic surgical technique after the first interventions in the emergency room was the external fixator procedure. Microbial colonization requiring specific antibiotherapy was detected in 1/3 of the patients.

Key words: open fracture, infection, trauma

Is there a relatIonshIp between tuberculum majus edema and vItamIn D levels?

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Abstract

Vitamin D deficiency is known to cause widespread muscle and bone pain. In addition, due to its active role in bone metabolism, bone marrow edema may occur due to the burden of the region in its deficiency. In this study, we aimed to investigate the role of vitamin D levels in the etiology of shoulder pain in patients with isolated tuberculum majus edema.

In our study, patients at N.E.U. Meram Medical Faculty Orthopedics who applied to outpatient clinic with isolated shoulder pain in 2016-2018 was evaluated with physical examination, plain radiography and shoulder MRI. Patients who have isolated tuberculum majus edema was detected and the vitamin D levels of 37 patients without additional pathology were examined, and the relevant database was created by asking the mechanism (spontaneous or traumatic) and professions that could be the cause of edema. Vitamin D replacement was performed in patients with vitamin D deficiency and insufficiency. Patients with vitamin D deficiency and insufficiency were followed up for 24 months. Constant scoring was performed twice, before and after treatment.

51.4 (19) of the patients were male and 48.6% (18) were female. Their mean age was 49.70 ± 13.01 (29-73). Spontaneous / degenerative edema occurred in 65.2% of the patients, and traumatic tubercle edema in 34.8%. Vitamin d deficiency was found in 29 patients (78.4%), vitamin d deficiency in 5 patients (13.5%), and vitamin d level was sufficient in 3 patients (8.1%). The mean pre-replacement constant scores of patients with vitamin D deficiency and insufficiency were 63.07

± 6.46 (53-70), and the average of the constant scores calculated after replacement was 90.02 ± 9.24 (76-100). It was determined that it showed a 43% increase compared to the constant scores before replacement.

In our study, it was found that 92% of patients with isolated tuberculum majus edema had low or insufficient vitamin D levels. It was found that patients who received vitamin D replacement had a 70% reduction in shoulder pain complaints, increased range of motion and return to social life, and the need for additional medical or surgical treatment was significantly reduced.

Key words: Vitamin D, tuberculum majus, bone marrow edema

PREACHING UNITY FOR FIGHTING AGAINST THE COVID-19: ANALYSIS OF THE MESSAGE CONTENTS OF Dr. TEDROS ADHANOM GHEBREYESUS

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Abstract
When humans are deeply concerned for severity of Covid-19 spread levels, all nations are alarmed to play a significant role for preventing the coronavirus. Thus, the Covid-19 was officially declared as a global pandemic by the World Health Organization on March 11, 2020. In fact, to manage the pandemic, it was addressed that all nations might unite for fighting against the virus of Covid-19. From that context, Dr. Tedros pleaded to the world leaders and politicians to put aside their differences so that they could focus on the fight against the pandemic. This study attempts to analyze the Dr. Tedros' message content on how the fight against the Covid-19 outbreak consists of unity of everyone. The purpose of this article is to analyze the Dr. Tedros' message content when he called upon all Nations to put together their efforts for helping one another. It equally proposes modeling the social process on how unity can play a constructive role to fighting against the Covid-19. The study aims to describe the Dr. Tedros's message content which is based on preaching unity for the world leaders and politicians about the pandemic concerns. The methodology approach of this research is opted for content analysis method which is used to identify patterns of data from a set of texts that can be written, oral or visual. The data are mainly complemented by text analysis of official documents of WHO. Therefore, the paper provides empirical insights about how unity is considered as one of the best way to fight against the Covid-19. It suggests that the world leaders and politicians can work together to fight against the Covid-19. The research limitation is based on some message contents addressed by Dr. Tedros, who is actually the General Manager of World Health Organization. The paper includes implication of social mechanisms related with preaching unity to all nations during the pandemic of Covid-19. Finally, it fulfils an analysis need on how Dr. Tedros' message is important for international solidarity.

Keywords: Covid-19, pandemic, unity, Dr. Tedros, message content

1.Introduction

The Coronavirus is considered as a new strain that was discovered in China in 2019. It was not previously identified by scientists. It was reported that an outbreak of a type of pneumonia of unknown origin in the city of Wuhan. Some source announced that the causative agent of the disease was a new variation of the coronavirus. The new virus is genetically related to the coronavirus, "which was responsible for the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003, and also started in China (Lee J W, McKibben WJ, 2004). A total of 8,437 cases of the disease were noted, of which 813 were fatal. Another similar type of coronavirus is Middle

East respiratory syndrome coronavirus (MERS-Cov) which broke out in 2012 in Saudi Arabia. The International Committee on Taxonomy of Viruses (ICTV) then described the virus as "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)". As of February 19, the number of people infected in China exceeded 74,000. So far, 2,004 people died, while 14,400 patients have recovered. The most known was "Spanish Flu" which was caused by an Influenza A (H1N1) virus in 1918 and Asian Flu which was also caused by an Influenza A (H2N2) in 1957. Additionally, the Hong Kong Flu which was caused by an Influenza A (H3N2) virus in 1968 and so forth. As it is emphasized in the Mateso's study : "It is evident that the Covid-19 is a new disease whose impacts are negative to human health (Mateso Bashingwa, 2020)".

From that context, the Covid-19 has just infected more than 2160 millions according to the recent report provided by the World Health Organization (WHO). The word "pandemic" comes from a Greek word "pandemos" which etymologically means a global epidemic. This term seems to be different from epidemic due to its connotative limitation to a smaller area of contamination. Therefore, a pandemic can be defined as the highest level of global health emergency that infects a larger number or a multiple regions of the world. It is obvious that declaring a pandemic threat on world level is not just a health issue but also a social problems between nation-states to others.

They are expressed "The only way out of this unfortunate and dreadful situation is through collaboration, based on respect and solidarity[1]" Dr. Lia Tadesse, Ethiopia's Minister of Health. All people must come together as nations of the world to confront the defining health crisis our era with concern for those who have been infected by the Covid-19. They have to fight the Covid-19 with determination to triumph over this common threat. To establish such requirement, unity for all nations can play a considerable role for making the ultimate sacrifice in the service of community. "The 2019 novel coronavirus disease (Covid-19) is currently the disorder with the greatest social impact (1,2) due to several factors, […][2]"

The World is confronting the severe problem which is caused by the Covid-19 on May 18th , 2020, Dr. Tedros Adhanom Ghebreyesus stated that "This a dangerous enemy, with a dangerous combination of features: this virus is efficient, fast, and fatal. It can operate in the dark, spread silently if we're not paying attention, then suddenly explode if we aren't ready and it moves like a bushfire[3]". The Covid-19 pandemic has brought out the best and the worst of humanity: fortitude and fear, solidarity and suspicion rapport and recrimination. From this situation, nations have come together as never before. The geographical divisions have been thrown into sharp relief. This is possible with cooperation. This statement emphasizes that it is "The pandemic is a reminder of the intimate and delicate relationship between people and planet. Any efforts to make our world safer

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[1] https://www.ethioembassy.org.uk/world-leaders-call-for-unity-to-combat-covid-19-at-the-first-ever-virtual-world-health-assembly/ [Accessed on 25/09/2020]
[2] Christian R. Mejia et Al. The Media and Their Informative Role in the Face of the Coronavirus Disease 2019 (Covid-19): Validation of Fear Perception and Magnitude of the Issue. Electronic Journal of General Medecine.2020.p.1.
[3] https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_3-en.pdf [Accessed on 26/09/2020]

are doomed to fail unless they address the critical interface between people and pathogens, and the existential threat of climate change that is making our earth less habitable[4]"

This Covid-19 pandemic has already impaired global healthcare systems as well as affected every aspect of human life. These social distancing measures have a substantive effect on education, health, business, tourism, and so on. "For reducing the spread of the disease infection, governments of numerous countries have emphasized taking several unprecedented preventive measures like strengthening health facilities, closure of educational institutions, offices, markets, restaurants, museums, movie theatres, etc., prohibition on social gatherings, border shutdown, and travel restrictions[5]".

2. Research questions

This study is conducted by two research questions:

1. How does the use of the Tedros' stylistic strategies reflect the view of the Covid-19 outbreak in the world?

2. To what extent the ideology of Tedros that is reflected through his message content?

3. Methodology of the study

In this article, critical discourse analysis CDA is used to assess the relative extent to which specified references, attitudes, or themes permeate a given message or document. A discourse is a group of statements that provides a language for representing knowledge about a particular historical; indeed it constructs the topic. That is, as a social practice, discourse constitutes situations, objects of knowledge, the social identities of, relationships between, people and groups" (Wodak & M. Meyer (Ed.) (1997). From that context, the critical discourse analysis (CDA) is also utilized as a method which brings together the theoretical understandings of critical discourse theory that intends to analyze social contexts. It enables understandings of how power, discourse, and ideology are realized. Critical Discourse Analysis (CDA) is discourse language as social practice determined by social structures" (Fairclough, 2001:14). According to (Hall, 201a) it is confirmed that defined and produced through language within a particular context and history. It reflects subject positioning and discursive practice to allow critical understanding the message of Dr. Tedros to fight against the Covid-19.

4. Discussion and analysis

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[4]https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_3-en.pdf [Accessed on 26/09/2020]

[5]Sushmita Dutta & Marzia Khatan Smitta. The Impact of COVID-19 on Tertiary Education in Bangladesh: Students' Perspectives, SCRIP, 2020 p.1.

4.1. Analysis of message content

Critical Discourse Analysis CDA is a theoretical framework which focuses on message that reveals the severity of the Covid-19 on the beginning the 2020. These critical and explanatory aspects throw a light upon describing and interpreting features used by Dr. Tedros in relation with the broader socio-political variables. According to Fairclough (1992) model describes 2 aspects of discourse practices: (1) socio-political and (2) cultural perspectives. Socio-political and cultural aspects are important because the construction discourses are established based upon a complete overview of circumstances. Analysis of Genre is used to a text which is related with the lexical aspects on messages with a broader socio-cultural context. "We should work across party lines, across religious lines. We shouldn't waste time pointing fingers". He also underscored the need for global solidarity at this difficult time. For now, the focus should be on fighting the virus. There are many unknowns, and we don't how it will behave in the future". It is recalled how the world countries could come together for eradicating this dangerous enemy.

Fairclough's (2001) discursive Notion of generic chains or regular ordering relationships between different genres so that one is framed by others. For Lecan's (2004) psychoanalytic concept of the signifying chain or links […] Particularly, useful for CDA, as far as interpreting the link between conscious rhetoric and unconscious logic is concerned […] came up with, which combine ideas from psychoanalysis and semiotics, namely: metonymic displacement.(e.g. Enemy = Covid-19) and metaphoric condensation (virus = enemy).

This involves a particular identification patterns in the Dr. Tedros' message. The use of the word "global unity" means entirety that refers to a continuous war against the Covid-19 in the worldwide. "How difficult is it for humans to unite to fight a common enemy that's killing people indiscriminately" and "Can't we understand that the divisions or the cracks between us actually are to the advantage of the virus[6]?" The above word has been used several times by the General-Manager of World Health Organization to indicate his stance on the fight against the Covid-19.

4.2. Context analysis.

Message of Dr. Tedros is analyzed through Critical Discourse Analysis CDA when it focuses on a particular socio-cultural context that has ideology influencing the audience recognition about impacts of the Covid-19. Critical Analysis is utilized as a theoretical framework to reveal ideology and discursive practices. CDA provides a complete a basis for analysis variables of Dr. Tedros as the General-Manager of World Health organization. Dr. Tedros' message is a central pillar for critical discourse analysis which is applied through Fairclough model. The message content is strongly considered as a real setting because it involves the thematic analysis based on unity.

The stylistic feature deals with the broader socio-political perspective of the speaker. From this regard, Dr. Tedros' message content within the theme of unity, he highlights new information about eradicating the Covid-19 pandemic as it is mentioned. "It is advised that to end the Covid-19

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6   https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-world-health-assembly/
[Accessed on 06/10/2020]

pandemic for everyone, everywhere, it is obvious that to work together as a global community. It is clear that a joint movement by taking action here to support our "Global Goal: Unite for Our Future" campaign to ensure that we can all beat Covid-19 together[7]". This statement is built on global community which intends to Global Goal to ensure that the Covid-19 is totally fought.

In addition, the Dr. Tedros message is also addressed to all Nations that have to come together as never before. The geopolitical divisions have been thrown into sharp relief that is why the message is clearly stated that this achievement could be possible with cooperation. It is underlined that "WHO Director-General Tedros Adhanom Ghebreyesus called for unity to fight the disease[8]" by adding that "Covid-19 is a test of global solidarity and global leadership[9]". The message content is analyzed as a way which creates an organization of informative and thematic structure that holds on cohesion. Indeed, it heightens impacts of the message and feelings of the speaker. The message gives a particular power to audience to have a deep attention.

After all, the message itself gives a logical sequence within the theme sentences and new information that make effective understanding about the pandemic of the Covid-19. "the greatest threat we face now" rather than the Covid-19 virus itself". Thus, they are served to create bridge between the speaker and audience. From this regard, the message content is developed through preaching global unity about fighting against the Coronavirus and audience gets new information from theme sentences.

4.2.1. Thematic progression

In the Dr. Tedros' message, thematic progression is essentially characterized by global unity which is fundamental in analyzing. Indeed, the Constant Theme Patterns are built on a chain related with appropriate words focusing on unity and solidarity "[…] national unity and global solidarity is undeniable," in order to beat the Covid-19 pandemic and ensure that essential health services for diseases like HIV continue, the global community cannot afford any divisions [10]. Fairclcough (2001:238), it is pointed out that when a discourse becomes commonsensical through sheer repetition and official endorsement, it becomes an ideology or a representation which produces and sustains relation of domination between different groups in societies through achieving a measure of hegemony (i.e. becoming the dominant representation)

Beyond that, thematic progression is also retained as a strategy which attempts to keep audience intact while encouraging the whole world gets united to fight the common enemy which is obviously defined as the Covid-19 as it is expressed: "We continue to be encouraged by the signs of

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[7]https://www.globalcitizen.org/en/content/dr-tedros-who-global-unity-speech-covid-19/accessed 05/10/2020
[8]https://www.arabnews.com/tags/tedros-adhanom-ghebreyesus [Accessed on 10/10/2020]
[9]   https://edition.cnn.com/2020/07/10/world/who-tedros-adhanom-unity-plea-intl-scli/index.html   [Accessed   on 5/10/2020]
[10]https://www.timesnownews.com/international/article/national-unity-global-solidarity-our-only-road-out-of-pandemic-who-chief-evokes-nelson-madiba-mandela/618008 [Accessed on 25/09/2020]

global solidarity to confront and overcome this common threat[11]". The Covid-19 is defined as a common threat that is why global solidarity is vividly encouraged.

Using thematic progression in the Dr. Tedros' message, it is portrayed that "The choice of theme and thematic progression is constrained by the audience […] thematic progression contributes to making meanings to meet the demands of the institution (Wawan Gunawan & Fataytul Aziza, 2017)". It is stated that global unity is a thematic progression that stands in the Tedros' message to strengthen solidarity. Therefore, the Constant Theme Patterns aim at maintaining audience to keep being united and joining efforts together to fight the Coronavirus.

4.2.2. Expressive value

In fact, discursive practices and socio-political perspectives help the speaker to deliver effectively his/her ideologies and could be accepted heartily. Therefore, Fairclough (1992)'s model is applied in this study to analyze Dr. Tedros' message content while addressing to the world about the Covid-19 outbreak. This implies that speaker himself is included in the criticized part when he is insulted as a Negro. This approach in the beginning was named as 'Critical Language Study' as the special focus was to raise consciousness of socially exploitative relation with special focus on language. Text analysis involves the analysis of lexical choices, cohesion, coherence and different stylistic features which focuses on the particular theme and broader socio-political perspective of the speaker.

This leads to the analysis above syntactic level. From that perspective, expressive and relational values are also linked to the message content analysis. In fact, expressive value indicates the expression of personal experience of the speaker. "Giving me names, black or negro," […] "I'm proud of being black, or proud of being negro[12]". This is emphasized that "I can tell you personal attacks that have been going on for more than two, three months. Abuses, or racist comments, giving me names, Black or Negro. I'm proud of being black, proud of being Negro … I don't care to be honest … even death threats. I don't give a damn[13]".

4.2.3. Relational value

This implies stylistic strategies and representative values in his message content. It is obvious that his message content deals with special socio-political perspectives. Here, Dr. Tedros seems to be the view of World people who would be informed about impacts of the Covid-19 crisis. He used the Word unity many times to indicate the stance on how the pandemic can be fought. Style of Dr. Tedros carries importance in the critical analysis of this discourse. From that context, expressive and relational values are closely linked in this message content analysis.

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[11]https://www.standard.co.uk/news/health/who-director-general-tedros-adhanom-a4402071.html [Accessed on 12/10/2020]

[12]https://www.bbc.com/news/world-asia-52230833 [Accessed on 14/10/2020]

[13]https://face2faceafrica.com/article/i-dont-give-a-damn-who-boss-speaks-out-over-racial-abuse-and-death-threats [Accessed on 12/10/2020]

Relational value throws a light between the speaker and audience. This creates a situation that Dr. Tedros invites all people in the world to be involved in fighting against the virus of Covid-19. "It is very tragic that we lost many, many lives. From the situation we have now…. we will continue to do everything to save lives. Of course, when you're confronted with a dangerous virus, a public enemy like this, we do regular assessments, strengths and weaknesses. We want to learn from our mistakes[14]". While evoking instance on the audience to contribute on solidarity and unity, the subject pronoun "we" has been used several times in the message to emphasize the ultimate involvement of every country in the world to fight against the Covid-19 outbreak.

4.2.4. Representational value

According to Fairclough (2001), problems of representation have to do with the ways in which lives of particular groups or communities are represented in sections of the press (2001:237). Through Tedros' message, it is known that the dynamic nature of positioning which is a question of self-representation. Dr. Tedros addressed his message as the main representative of World Health Organization.

Representational value is significantly portrayed as the worldview of the audience when it reflects the subject matter of the discussion which was particularly based on socio-political background when the participation of every nation plays a considerable role to fight against the Covid-19. It is our duty to seize this moment to come together in national unity and global solidarity to control Covid-19. He urged by adding that for all the differences, "We are one human race sharing the same planet and our security is interdependent[15]".

The arisen question is that the Dr. Tedros' message intends to break down the socio-political gaps between some countries (USA and China) to combat the pandemic. "No time to waste. Let's focus on saving lives. Collaboration across party lines important to ensure national unity to fight the virus more effectively. National unity is a foundation for global solidarity. When we do this, we quarantine political Covid. Stop politicizing Covid-19[16]" This socio-political context revolves around a major idea which was to politicize the virus It is added that "[…] If you don't want many body bags, then you refrain from politicizing it. […] No need to used COVID to score political points. No need. You have many other ways to prove yourselves[17]". When it's personal, even death threats, I didn't care. When as community, people start insult us, that's enough. In that perspective, Dr. Tedros criticized those leaders and politicians who did not take into consideration the severity of the Covid-19.

5. Conclusion

The limitation of this study is linked with data analysis which is based on interpretative paradigms. The message content is analyzed through textual and stylistic devices in order to achieve some

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[14]https://news.un.org/en/story/2020/04/1061392 / [Accessed on 12/09/2020]

[15]https://mb.com.ph/2020/08/07/who-seeks-global-unity-vs-covid-19/ [Accessed on 10/10/2020]

[16]https://face2faceafrica.com/article/i-dont-give-a-damn-who-boss-speaks-out-over-racial-abuse-and-death-threats [Accessed on 12/10/2020]

[17]https://face2faceafrica.com/article/i-dont-give-a-damn-who-boss-speaks-out-over-racial-abuse-and-death-threats [Accessed on 12/10/2020

specific purposes such as (1) Dr. Tedros' stylistic strategy reflecting the view of the Covid-19 (2) Dr. Tedros' ideology reflecting the way of fighting against the Covid-19. Though critical discourse analysis CDA approach which refers to linguistic analysis of connected writing and speech in social context, this article carries prerequisites whose message content may have to propagate the ideology in sophisticated way that is based upon preaching unity to fight against the Covid-19. The frequent repetition of global solidarity and unity emphasize the main theme that Dr. Tedros addressed to the worldwide. The choice of theme capitulates the socio-political background of the Covid-19 extent. Thus, this study indicates the representational and expressive values of the speaker. Dr. Tedros is impressive with the help of stylistic devices that identifies how much solidarity between Nations is important to eradicate the pandemic. finally, it is obvious that he is persuasive in preaching unity to join together effort in light of combatting the Covid-19.

6. Recommendations

Due to the Covid-19 outbreak from the beginning of the year 2020, some superpower countries started politicizing the virus by accusing others to be responsible for the virus propagation. From that perspective, the following prominent recommendations could be taken into consideration:

1. All Nations must obviously join together their efforts to fight against the Covid-19;

2. Unity and solidarity could be strengthened to make end this pandemic of Covid-19;

3. States-Nations must let aside their differences and concentrate on fighting the Covid-19.

7. Acknowledgement

The author expresses his gratitude to all medical staffs and other people who contribute in one or another to prevent the spread of Covid-19 during this difficult times. In addition, many thanks to all those who think and re still thinking on how they can save human lives in the worldwide. This is my deepest recognition for their humanitarian tasks.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Web 2.0-based Learning and the Challenges of Culture Shock among International Students

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Abstract

With the emergence of new communication technologies, learning has been transformed digitally through web 2.0 types of machinery, in which digital devices are being used to blend the learning system. Some students of tertiary institutions, especially the international students who migrate to study out of their community or country, have different cultures of learning, thereby lacking skills and awareness on how to use the new learning system. This study, therefore, tends to investigate international students, specifically Nigerians in the Eastern Mediterranean University (EMU), North Cyprus, regarding the use of web 2.0-based learning facilities and how they manage culture shock. The study used an ethnographic research approach to investigate the challenges facing Nigerian students, out of which fifteen were selected via a snowball sampling technique as participants, and a semi-structured interview was used as a data collection instrument. The study reveals that even though some Nigerian students face difficulties in managing web2.0-based learning facilities like student portal and Moodle, their computer literacy helped them from the initial stage. The findings also indicate that some participants suggest adequate orientation to be organized for international students on the use of learning facilities in the institutions. The researcher suggested that since research into this sector, mostly the African perspective, is rear, there is the need for more effort in studying the culture of digital learning from Africans' views especially those looking out of their home-based learning environment. This study, therefore, can be improved by increasing the number of participants.

Keyword: Web 2.0-based learning, Culture shock, International students, Digital learning

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

NEWSPAPERS FRAMING OF COVID-19 PANDEMIC IN NIGERIA

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Abstract

The study was designed to investigate the coverage of COVID-19 pandemic by Nigerian newspapers, with a view to identifying the frames in the stories published. A total of 150 issues of The Nation and Daily Trust newspapers published between 1st March to 31st July, 2020 were analyzed across major genres. The research method was content analysis. The composite week sampling technique was used to select the issues studied. Inter-coder reliability was tested using Scot's pi- index which showed an overall high (0.77 %) agreement. Findings indicate that The Nation newspapers published more than the Daily Trust newspapers. Straight news was predominant. It was found that the newspapers used human interest, policy and economic frames to report COVID-19 pandemic in Nigeria. It was also found that human interest frames were used more by the newspapers. The spread of COVID-19 pandemic was widely reported. The findings showed that the newspapers' coverage of COVID-19 pandemic helped in awareness of the disease. The findings also showed that the newspapers dwelt more on transmission of the disease and this failed to help prevention and control. The study concluded that the portrayal of the disease as affecting mostly a section of the society, especially the 'elite and rich' in society did not help in prevention and control. Nigerian newspapers should do more in terms of investigating and interpreting a disease instead of straight news reporting on transmission that lacks depth. It also concluded that newspaper reports of transmission among the lowly class in society deemphasized heightened transmission. From these findings, it is clear that Nigerian newspapers reported COVID-19 pandemic to appeal to emotions and not in a manner to prevent re-occurrence. The study therefore, recommended proactive newspaper contents on prevention and control of a disease. In addition, it recommended that the government should do more in disease prevention.

Keywords: coronavirus, framing, newspapers, pandemic, perception

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

The Asymmetric influence of Financial Development, Energy Consumption, and Trade Openness on Economic Growth in D-8 Countries: Evidence from Panel NARDL Approach

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Abstract
The Developing 8 (D-8) is a coalition of mainly Muslim developing countries that are all members of the Islamic Conference Organization (OIC), which formed an economic alliance. It comprises Egypt, Bangladesh, Iran, Indonesia, Malaysia, Pakistan, Nigeria and Turkey. The group was founded on June 15, 1997, following a declaration in Istanbul Turkey. The group is developed to stop increasing tariffs on essential goods among member states, and the process is overseen by a supervisory committee. The aim of the group is to minimize barriers to free trade between member states as well as promote inter-state cooperation. However, there is no significant evidence in current literature on the trend of trade openness, energy consumption, and the effect of financial development on D-8 countries ' economic growth. With this study, by applying Panel Non-linear Autoregressive Distributed Lagged (PNARDL) from 1970 to 2019, we attempted to bridge the gap by sussing out the answer to the question of if the connection among energy consumption, trade openness, financial development and economic growth is symmetrical or asymmetrical. Non-linear estimation indicates long-term asymmetric connections among energy consumption, trade openness as well as the financial development influence in D-8 countries economic growth. Moreover, the asymmetric dynamic, similarly reveals in the short run. In addition, we examine the directional causality under the error correction model with the specification Fully Modified Ordinary Least Square (FMOLS). Results indicated the bi-directional causality between the variables over long run.

Keywords: Asymmetric, D-8 Countries, Economic Growth, FMOLS, PNARDL

EXCHANGE RATE UNCERTAINTY AND ECONOMIC GROWTH: THE INTERACTIVE ROLE OF FINANCIAL DEVELOPMENT IN NIGERIA

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Abstract
This article gives empirical evidence that the volatility in the real exchange rate can significantly affect the sustainable productivity growth, which confirms the hypothesis that the effect critically depends on the degree of economy's financial development. Following the relatively underdeveloped financial system in Nigeria, the volatility in the Nigerian exchange rate reduces the productivity growth of the economy. In this article, we consider the interacting effect of exchange rate fluctuation and the level of financial development instead of analyzing the exchange rate fluctuation in isolation. The empirical estimation is based on the Nigerian data set covering the years 1980-2019; through the application of threshold autoregressive non-linear co-integration and the non-linear ARDL estimator. We further deploy a test of causality using the frequency domain that enable us to differentiate a temporal as well as a permanent causality. The findings appear that the real exchange rate fluctuation amplifies the negative market effects of financial development constraints. It also records that the uncertainty in the foreign capital flows adversely affects the Nigerian output growth. The paper recommends that the Nigerian policy makers should in their attempt to diversify and improve the future growth of the economy, promote adequate financial sector development since financial shocks are amplified with poorly implemented credit markets.

Key Words_ Exchange rate volatility, threshold autoregressive, frequency domain, NARDL

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Attributes of Public Infrastructure Preference in Bauchi Metropolis, Nigeria

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Abstract

The aim of this study is to assess the public infrastructure provision mostly preferred by the residents in Bauchi Metropolis, Nigeria, with a view to proposing areas of improvement. The study adopted the use of quantitative approach and data were collected through questionnaire survey from 382 house hold heads proportionate selected from target population in Bauchi metropolis. The data collected was subjected to descriptive with mean ranking, frequency distribution. The study revealed that preference with infrastructure provision of security facilities, water facilities, education facilities, health facilities and electricity facilities most preferred by the residents. The public infrastructural facilities provision in the area should be based on the resident's preference and need.

Key Words: Preference, Infrastructure, Provision, Facilities, Need, Attribute

Introduction

Residential users self-selection, which is the tendency of people to choose location and willingness to stay based on the availability of infrastructural provision, needs and preferences because people choose to live in a neighbourhood that suits their preferred infrastructural facilities (Litman, 2005). In the words of Okechuku (2011), it is not a subject of expression or polemics that basic infrastructural facilities provision in Nigeria is in a semi-comatose state from colonial times up till the present day. Issues of residents' preference with regard to infrastructural facilities provision have remained on lips of consecutive administrations with no visible indications of accomplishments.

Literature Review

The issue of neighborhood preferences has been fundamental to researchers for a few years back. One of the destinations of neighborhood preference considers is to comprehend occupants' need for having septic neighborhood with specific attributes.For instance, past research has uncovered that individuals may live in neighborhoods populated by individuals of their own race (Clark, 1992) or ethnic foundation (Teixeira, 2007). Sirgyet al. (2005) proposed that homebuyers are probably going to consider both practical and representative perspectives in their neighborhood decision. Howleyet al. (2009) consider uncovered that occupants incline toward living in low-density areas over high-density areas.Such investigations help our understanding of occupants' preferences and their perspective.Except for a little examinations (Oppewalet al., 2005; Khozaeiet al., 2011), neighborhood preferences are generally disregarded by researchers. This absence of thought may be

because of the supposition that residents who leave their parents' home and move to new living arrangement have set themselves up rationally for another life and in this way are more averse to expect housing practically identical to their very own homes.Regardless of whether these assumptions are right or not, clearly researchers have little concern about neighborhood preferences, despite the fact that most of occupants have little chance to practice their very own decision of living arrangement since housing is for the most part controlled by elements, for example, income.

Attributes of Neighbourhoods' Preference

A few attributes of neighborhoods' preference were distinguished in (Teixeira, 2007).These incorporate Mobility, Community facilities, Community social capital,Location attributes,Points of interest and Socioeconomic environment. The public traffic network refers to the quality of public transport system connected to the neighbourhood, such as the bus lines and metro system.Private traffic network (PIT) is additionally part of mobility. The private traffic network implies the nature of the private transport arrangement of the area, for example, the accommodation of private vehicle leaving and being near road exits.

Proximity to workplace (PTW) is additionally part of mobility. Proximity to workplace refers to the closeness to work of occupants. Individuals append an incentive to the level of accessibility to work in their environment, yet they acknowledge to a limited degree the inconveniences of driving in return for a superior living condition and less expensive housing at the home area (Mills, 1994). This shows the distance to work ought to be weighted by a specific distance- decay work and ought to rely upon the concentration of accessible work (Rietveld &Wagtendonk, 2004).

The Community facilities involve Education facility (EDF). An abnormal state of education facility refers to high quality of kindergartens, primary schools, secondary schools and libraries close to the area (Teixeira, 2007).Medical and wellbeing facility (MHF).An abnormal state of medical and health facility identifies with the area cleanliness and the amount and nature of hospitals facilities or clinics close to the area (Mills, 1994).Retail service (RES). The retail administration identifies with the nearness of a satisfactory number of shops, stores, markets, and general stores (Mills, 1994).Sports Facility (SPF).Sports facility refers to the nearness of field and exercise rooms close to the area. Green space and view (GSV). Green space and view refers to the closeness to gardens, open territories, or lake and general unhampered view to environment (Bender et al., 2000).

Location Attributes

The Location attributes comprises of (built density, structural density, transport networks, open space and land use) (Li, 2006).

Waddell (2006) sees that dwelling density has a negative effect on residential utility for all family households in the Puget Sound Region. Dwelling unit density as logarithmic articulation, notwithstanding, has a significant and positive influence for all family unit types tried. Comparative outcomes are discovered when using population density as a variable as opposed to dwelling density. Population density is sure for youthful family units; they prefer toward zones with a high residential population density. Structures and residences give space to apportion population and along these lines can be required to be an intermediary for population density. Network of streets and open transportation are the connections that define an location's accessibility. Transport systems are also a source of emissions, i.e., noise and bad air quality along fundamental streets. Bürgle (2006) found that the nearness to significant streets or railroads negatively affects residential utility in the Zurich zone. Vyvereet al. (1998) likewise watched this in their expressed preference study in

Louvain-la-Neuve (Belgium). Strongly enough, Waddell (2006) archived positive influence in Seattle and De Palma et al. (2005) in Paris, announcing an preference for arterial and highway proximity. De Palm et al. (2005) researched a totaled zoned dimension, and neither study included accessibility calculation.

A few authors gave an account of the utilization of open space and green zone as factors in residential location choice despite the fact that it is indistinct whether they mean recreational area or un-built areas. Habib and Miller (2009) found that green territory, estimated as a percentage of a neighourhood, is sure for family units in Toronto. Chen et al. (2008) reported comparable outcomes in Seattle and (for open space estimated as an absolute value within a zone) Zondag and Pieters (2005) in the Netherlands, with the two examinations connecting the variable with different family unit types.

Land use

Land-use blend has been investigated in deferent residential location models; in any case, the careful specification is not detailed in most studies. A common observation is the negative effect of industrial land use almost a residential location (Habib and Miller 2009; Weisbrod et al., 1980). Mixed land-use then separate just among residential and commercial (office and retail) and does exclude industrial land use. Waddell (2006) includes an indicator for mixed land use in his work on Seattle. His models show a positive effect for young households. Guo and Bhat (2007) also found a positive approximate for households without a car. Additionally, they observe a negative preference for the percentage of residential land use in proximity to the residential location for some household types, which indicates a preference for mixed land- use.

One strong common denominator for all several study areas stood out: residents desire proximity to educational facilities. Pinjari et al. (2009) mentioned density of schools in a zone as universally positive, although not highly significant. Axhausen et al. (2004) and Vyvere et al. (1998) report a similar impact, reporting a negative reaction to longer distance from schools. None of the studies reviewed include other educational facilities, such as tuition centres, or a differentiation of catchment areas per school type.

Influence of proximity to retail facilities has been investigated only within stated preference survey in the literature that has been reviewed. All studies found these attribute to have a positive impact on residential utility. Vyvere et al. (1998) revealed that the distance to grocery shops is positive when less than 500 meters and distance to a shopping centre is appreciated when it is less than 5 kilometres. Kim et al. (2005) revealed the travel cost factor (which one expect to be correlated to distance) increases the probability of moving and reduces the utility of a residential location utility.

Pinjari et al. (2009, 2011) observed on density of sport and recreational facilities variables for residential location choice and report that the number of physical recreation centres significant enhances location utility. The number of natural recreational centres has only a minor influence for households with bicycles. No other study so far reviewed included measurements on sport and recreational facilities, but based on Pinjari et al study and the researcher's own observations, one expect proximity to sport and recreation facilities to be generally positive, as long as noise is not a problem.

Urban characteristics and centre

Several studies include explicit variables relating urban characteristics in the residential location choice. Andrew and Meen (2006) revealed a relationship between life cycles in their study on

London and show that households tend to move toward the city core when they are young and move away from the city later on. De Palma et al. (2005 and 2007) reveal a significant negative value for a variable representing the centre of Paris.

Kim et al. (2005) relates a variable for city settlement in their stated preference survey of Oxfordshire. Their residential model reports a clear tendency to move out of the city as well. Belart (2011) and Bürgle (2006) define the central business district in Zurich as a spatial reference point and observe a tendency for all households to move away from this spatial point. Axhausen et al. (2004) include the distance to Mittelzentrum and Oberzentrum. Their model indicates the distance to a mayor centre (Oberzentrum) to be valued by local households. Proximity to smaller centre structures (Mittelzentrum) has a positive effect on residential utility Axhausen et al. (2004), jumped to conclusion that dense in urban areas are generally not accepted, while local centre structures are valued inside residential location choices.

Zondag and Pieters (2005) performed a second study with a more separate approach, distinguishing four urban characteristics (urban centres, urban neighbourhoods, local village centres, and local village green neighbourhoods) and investigate the impact on the residential location choice for deferent household types. Although some of their models reveal significant urban characteristics, it is not feasible to distinguish general tendencies, which might rely on the household classifications. Other studies lead us to suppose that urban characteristics have an impact on residential location, closely related to life cycles of households.

Households tend to move away from the city core throughout this later phase. However, all these models lack urban characteristic variables. The level and dimensions of the city core are not clearly define, nor is the location of a single spatial reference point pinpointed. The definition of a point or zone as urban core thus seems fewer convincing as they are not reproducible or define; this again makes studies complicated to compare. Instead, one believes that models should explore capturing these characteristics using other spatial variables, e.g., built density, density of services, and public transport density.

One attribute used in mainly residential choice models is population density. De Palma et al. (2005, 2007) use three deferent formulations in their model specification: absolute density, log of density, and vary of population density. Two studies produce the same outcome: Other studies also establish population density has a negative impact on residential choice (Kim et al., 2005; Lee & Waddell, 2010a; Weisbrod et al., 1980). Similarly, studies include variables explaining the proximity of similar households. This similarity can, for instance, be expressed by the percentage of households with similar ethnic backgrounds, the same household composition, or the same income level.

Several studies have observed segregation effect when defining ethnic groups or household place of origin as variables in residential location choice models. De Palma et al. (2005, 2007) differentiate between foreign-headed and French-headed households in the Paris region and established that households with a foreign head tend to group while households with a French head observe the vicinity of foreign households negatively, Waddell (2006) found the same effect for minority households and white households.

Waddell (2006) includes interaction terms for low-, middle-, and high income distribution according to household size and age. His models indicate a positive influence for all income groups, but are of significance only for some low- and high-income household types. Further studies by Guo and Bhat (2007) and Pinjari et al. (2009, 2011) include the deference between individual household income and average zones income and report that this deference has a highly significant

negative value. All these reports indicate that households have a tendency to relocate within household groups with similar incomes.

Spatially aggregated housing costs are closely related to sales prices or rental costs of individual units. Studies found that these housing costs have a significant negative influence on location utility (Axhausen et al. 2004; Pinjari et al. 2009, 2011; Zondag&Pieters, 2005). Srour et al. (2002) include the average lot value in a zone (land price) as an explaining variable and found a negative impact on the residential utility of a location. Guo and Bhat (2007) include the ratio of income to average housing price in a zone around their model, instead of the exact formulation, which is negative. As these studies use a zone instead of an individual dwelling unit as choice alternative, this is not amazing. The average price of residential dwelling around a zone is not expected to have explanatory power unless it is used in relation to the individual costs of a residential unit.

Kim et al. (2005) and Zhou and Kockelman (2008) finds school quality to have a positive influence; as it is a non-interaction variable, this holds for all households. Chen et al. (2008) include school quality as interaction variable for households with children and without children and find it to be slightly stronger for households with children, but positive and significant for both. Andrew and Meen (2006) include the GCSE levels and A-level scores (percentage of children obtaining 5+ GCSE grades; percentage of children obtaining 3+ A/AS levels) in their model and finds a positive effect of the first variable and a negative impact for the latter.

It is suppose that school quality is most significant for households with children or who plan to have children, even if some studies founds the variable positive for almost all households. Further research is required on the expected correlation with other socio demographic variables and how/if school quality can be measured in a land-use simulation.

Access and accessibility

Access to work, or commuting time, is often included when the workplace of the decision maker is known and the commuting time can be computed for all alternatives. Generally, it is obtained from a transport model and needs to be calculated for every choice set alternative.

Commuting time is usually a negative influence on the residential utility of a location (Axhausen et al., 2004; Guo&Bhat, 2007; Habib & Miller, 2009; Lee & Waddell, 2010a; Zhou &Kockelman, 2008; Zolfaghari et al., 2012). If commuting time is not available, studies use commuting distance as network-based distance or Euclidean distance instead (Belart, 2011; Bürgle, 2006; Chen et al., 2008; Srour et al., 2002), which has also always been negative but has a lower significance. Few studies distinguish between commuting time by car or public transportation, or factor in commuting costs (Kim et al., 2005; Pinjari et al., 2009, 2011), although all have a negative effect on the residential utility when significant.

Public transit commuting times are more imperative than commute times by private transport (de Palma et al. 2007). Belart (2011) and Pinjari et al. (2009) include average commuting time/commuting distance of all workers in a household, which further enhances model performance. A weighted approach based on the percentage of employees in a household has not seemed to enhance the model (Belart 2011). To capture the reduced effect of long-distance variations, Bürgle (2006) uses a formulation around an exponential function that is also implemented by Belart (2011). Guo and Bhat (2007) and Zolfaghari et al. (2012) include employment accessibility in their location choice models. A low accessibility to employment is a deterrent for by households in San Francisco and London. The latter study also shows that single households are more likely to reside near

employment centres; this preference is in line with the preference for a higher population density and ultimately reflects a preference for urban areas.

Srour et al. (2002) calculate deferent types of accessibility measures. They concluded that the cumulative opportunity accessibility index in which accessibility is determined by opportunities available within 30 minutes of travel time provides the best results for location choice, based on statistical significance and easy behavioural interpretation in their study, they finds a preference for accessibility to employment. Belart (2011) differentiate between accessibility by transit and car. Employment accessibility by the transit network has a positive significant impact for the location choice of households having no car. Employment accessibility by private transport, however, has a negative influence on residential utility for households owning a car. The latter can indicate negative impact associated with accessibility by car, such as noise and particle emissions. In the same region, Bürgle (2006) notes that households without a car prefer to live in high population accessibility locations.

Zondag and Pieters (2005) calculate a log-sum measure for all travel purposes and a log-sum per travel purpose (work, education, other). In their move-stay model, they observed that fewer households are willing to move away from easily accessible locations than from less accessible locations. In their location choice model, households with medium to high income do not see accessibility for all travel purposes as an asset, on the other hand, employed single households and non-single households older than 65 view accessibility for purposes other than work and education positively.

Methodology

Study population is the target respondents to study that meets requirement to provide information (data) for the research. The target audience for this study are household heads in the study area. This refers to household heads that may answer the questionnaire of the study.The sample frame is the total number of items of the study population. As Bauchi metropolis comprised of eight (8) administrative wards (Table 1), the sample frame of this study is the total household heads in the eight (8) wards (75,177) as stated by Bauchi Local Government (2016).

Table 1: Sample Frame & sample size

S/N	Wards	Households (sample frame)	Percentage	Sample size
1	Dan Amar A	8,758	11%	45
2	Dan Amar B	12,931	17%	66
3	Daniya	10,365	13%	53
4	Dan Kade	6852	9%	35
5	Dawaki	13316	17%	67
6	Hardo	3674	4%	19
7	Makama A	9496	12%	48
8	Makama B	9785	13%	49
	TOTAL	**75,177**	**100%**	**382**

Source: Bauchi Local Government, 2016

Therefore, target population for the purpose of this research are household heads within the study area. To determine the sample size for this research, Krejcie and Morgan's (1970) table of determining sample size was adopted. Since the population size of this study area is 75,177, as

shown in Table 1 above, 382 sample sizes were adopted for questionnaire administration purpose. This is to enable collection of adequate data for the study.

The questionnaires were designed to address the study objectives. The way in which questions presented in the questionnaire affect the quality of responses and therefore it is important not only that the right question are asked, but also the questions are understood and asked in right way (Appenheimer, 1996). A poor questionnaire will result in error and biases and will tend to increase the amount of non-response in a survey (Fink, 2012).

The questionnaire was designed by considerations of appeal to respondents, ease of reading, completing and coding. The design incorporated the use of only close-ended questions. Close-ended question had more than one response options and Likert scale will be used for the variables items to ease the means of assessing the respondents (Kothari, 2004).

The data obtained using questionnaire survey was thoroughly screened, analysed and sorted out for analysis depicting the information responses from the respondent, as the study contained descriptive research questions, mean ranking.

Findings

Also descriptive statistics based on mean ranking was carried out to explore the level of residents' preference with public infrastructural facilities provision in Bauchi metropolis, Nigeria. The results in table below showed the ranking, mean and standard deviation and remark for each Item.

Table 1: Residents' Preference with Public Infrastructure Provision in the study area

Infrastructures	Mean	Std. Deviation	Rank	Remark
Security facilities	4.35	0.94	1st	Very high
Water facilities	4.35	1.02	2nd	Very high
Education facilities	4.33	0.94	3rd	Very high
Health facilities	4.31	1.03	4th	Very high
Electricity facilities	4.31	1.13	5th	Very high
Road facilities	4.29	0.96	6th	Very high
Fire service facilities	4.17	1.00	7th	High
Drainage facilities	4.15	1.04	8th	High
Market facilities	4.10	1.08	9th	High
Solid waste disposal	4.09	1.09	10th	High
Communication facilities	4.08	1.05	11th	High
Landscaping facilities	3.95	1.00	12th	High
Recreational facilities	3.89	1.05	13th	High

Source: Field Survey, 2018

A mean ranking was conducted on the general preference derived from the public infrastructure provision by the respondents in the study area. It was observed that security facilities with mean value of 4.35 was ranked 1st as the most crucial among the preference, followed by water facilities with 4.35 mean value ranked 2nd, education facilities with mean value of 4.33 ranked 3rd, health facilities with value mean of 4.31 ranked the 4th, electricity facilities with mean value of 4.31 ranked the 5th, road facilities ranked 6th with 4.29 mean value and were very high in residents' preference level, fire service facilities ranked the 7th with mean value of 4.17, drainage facilities with mean value 4.15 ranked the 8th, market facilities with mean value of 4.10 ranked the 9th, solid waste disposal with mean value of 4.09 ranked the 10th, communication facilities with mean value

of 4.08 ranked the 11th, the least mean value of residents' preference with public infrastructural provision was environmental landscaping facilities and environmental recreational facilities with 3.95, 3.38 mean values and were high residents' preference level respectively. These results were indicating that the residents preferred the provision of almost infrastructural facilities in the study area.

The residents' preference to infrastructural facility and service provision level was further analyzed and preferred to facilities such as security facility; water supply facility, education facility and health facility were with the highest ranking of 1st, 2nd, 3rd and 4th respectively. The residents' preference to provision of communication facility, recreational facility, and landscaping facility provision were low. This is as a result of the design of the city as these facilities were not given appropriate attention.

However, findings in post occupancy evaluation of residents' housing accommodation by Oladiran (2013) agreed with findings of this research on residents' preference. The study assessed the residents' housing' accommodation facilities in the city of Lagos, Nigeria. These include electricity supply, water provisions, health facility, education facility, fire service facility, security facility, and size of the drainage facility. The study reported that the residents were preferred the infrastructural facilities provision of security facility; water supply facility, education facility and health facility, which represent the opinion of majority of the respondents in Bauchi metropolis.

Conclusion

The aim of the study is to assess the public infrastructure provision mostly preferred by the residents in Bauchi Metropolis, Nigeria with a view to recommend possible areas of improvement.

The findings indicated that preference with infrastructure provision of security facilities, water facilities, education facilities, health facilities and electricity facilities most preferred. The public infrastructural facilities provision in the area should be based on the resident's preference and need. This will lead to the optimal utilization of facilities provided and resident's willingness to stay.

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دور إدارة الموارد البشرية في وظيفة التوظيف

: دراسة استطلاعية تحليلية بمصرف الجمهورية فرع القواسم

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Abstract

The research paper focuses on, to what extent the role of human resource management in Aljomhora Bank – Alkwassem Branch applying the scientific methods of employment job (recruitment, selection and designation), which considered to be the most important for human resource management. In addition, the paper investigated on the entire performance of the HRM and the specific job of employer department and the compensation of this cultural gab. The statistical results through questionnaires showed strong support to the research hypotheses that showed, there are limitations in the scientific methods applications of recruitment, selection and designation. The paper concluded a number of scientific results and recommendations.

المستخلص

تقيم الورقة البحثية على مدى حرص دور إدارة الموارد البشرية داخل مصرف الجمهورية - فرع القواسم،في تطبيقها للأساليب العلمية لوظيفة التوظيف (الاستقطاب-والاختيار-والتعيين) ،والتي تعتبر من اهم ركائز الوظائف لإدارة الموارد البشرية . وتسلط الورقة الضوء على عمل إدارة الموارد البشرية بصفه عامة ، والعمل التفصيلي لإدارة التوظيف بصفه خاصة وبالتالي تعويض هذه الفجوة الثقافية . ثم تشير نتائج التحليل الإحصائي المتضمنة استمارة الاستبيان، إلى دعم قوي لفرضيات البحث والمتمثلة في قصور تطبيق الأساليب العلمية لوظائف الاستقطاب والاختيار والتعيين. ثم انتهيت الورقة بمجمل من النتائج والتوصيات العلمية

مقدمة عن إدارة الموارد البشرية:

لقد تعددت تسميات لإدارة الموارد البشرية منها أدارة الأفراد , والعلاقات العمالية أو الصناعية إلا أنها تصب في معنى واحد هو مجمل العلاقات بين الإدارة والقوى العاملة . أن المفهوم الحديث لإدارة الموارد البشرية قد استقر بعد مروره بعدة تطورات تاريخية ما قبل الثورة الصناعية وأثناء الثورة الصناعية إلى أن بدا يأخذ في الاهتمام بهذا العلم وتنظيم العلاقة بين الإدارة والعمال في مرحلة القرن العشرين وظهور تعريفات واضحة لهده الإدارة منها **تعريف(فرنش)**،حيث يعرف إدارة الموارد البشرية(أنها عملية اختيار واستخدام وتنمية وتعويض الموارد البشرية في المنظمة).(شبكة المعلومات الدولية، جامعة بابل أستاذ المادة ثناء عبد الكريم عبد الرحيم 2018/10/13 19:24:36). أن التطورات السريعة لشركات العالم اليوم في مجال الصناعات والخدمات والتكنولوجيا، أدت إلى تغييرات ملموسة في تصميمات الهيكل التنظيمي وهذا ما يتطلب من احتياجات من الموارد البشرية ذات صفات ومواصفات وظيفية عالية، وعليه بدء الاهتمام بالموارد البشرية نظرا للأهمية النسبية مقارنة بالموارد الأخرى , وذلك بسبب دورها الفعال في كافة العمليات الأنتاجية والإدارية والمالية وغيرها.(جودة،2010: 19). وعلية فأن التطرق لدور وظيفة التوظيف وهى إحدى وظائف إدارة الموارد البشرية لما لها من دور بارز في تدبير الحصول على الإعداد والنوعيات من العاملين لسد تحديد احتياجات المنظمة من القوى العاملة.(سلطأن،117:1993). في ضوء عملية الاختيار الصحيح والدقيق لهؤلاء الأفراد بحيث تتضمن سياسات الاختيار لدى إدارة الموارد البشرية وهى وضع الشخص المناسب في المكأن المناسب .(سعيد،1997:151)وهى تستند إلى المبدأ الموضوعي في ضوء الكفاءة والجدارة وهو أمر له الأثر البالغ في رفع الكفاءة الأنتاجية.(هاشم،1979: 265)
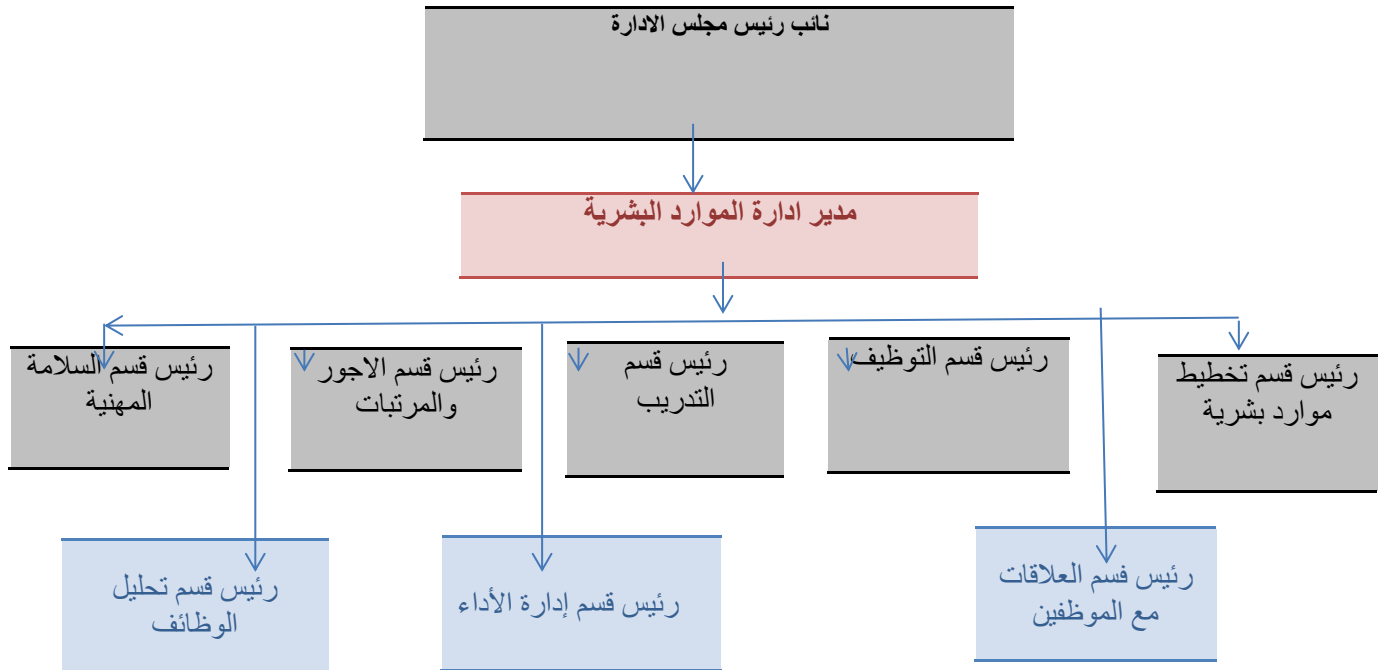
الشكل رقم(1) يوضح الهيكل التنظيمي لإدارة الموارد البشرية

(Fisher CynthinaD,LyleF.ScoenFeldt،1999: 41)

المهام الرئيسة لوظيفة التوظيف لإدارة الموارد البشرية :
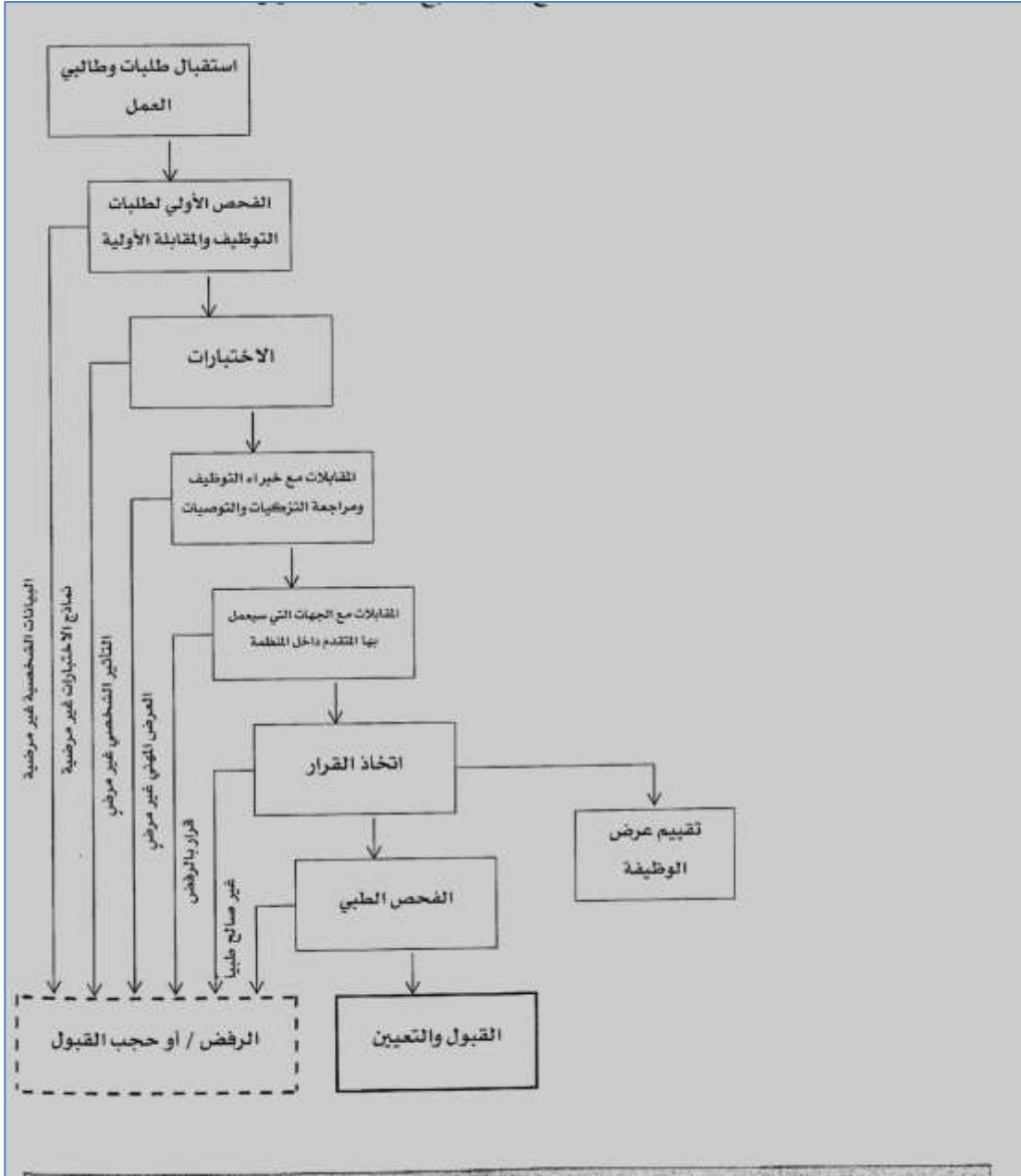
الشكل رقم (2) يوضح الأعمال النهائية لعملية الاستقطاب والأعمال التفصيلية لعمليتي الاختيار والتعيين. (القحطأنى،2008 :115)

1_ وظيفة الاستقطاب :

تعتبر عملية الاستقطاب احد ركائز القوى البشرية للمنظمات الحديثة, وأن تحقيق أهدافها الإستراتيجية يرتبط بصورة مباشرة بمدى قدرة إدارة الموارد البشرية على تزويد المنظمات بالأفراد الأكفاء والقادرين على وضع الاستراتيجيات التنظيمية . وعلية فأن جهود عملية الاستقطاب تتمحور , في ضمأن تزويد المنظمة بالعدد المناسب من ذوى الكفاءات المرتفعة, لاختيار أفضلهم لشغل الوظائف الشاغرة . (زايد،2003: 238). وتعتمد وظيفة الاستقطاب على سياسة الاستقطاب الداخلي في استقطاب المرشحين من داخل

المنظمة مثل (الترقية الوظيفية ، النقل الوظيفي،الإعلان الداخلي... الخ)،والاستقطاب والخارجي من توفير وترشيح العمالة للتوظيف من خارج المنظمة مثل (الإعلان مثل-التلفاز والإذاعة ,والصحف والمجالات , والإنترنت – وكالات التوظيف – النقابات العمالية ..الخ) وبالتالي العمل على توفير اكبر عدد ممكن من أفراد القوى العاملة الدين لديهم رغبة في التوظيف مع الاحتفاظ بمزايا وعيوب مصادر الاستقطاب.(سلمى،1997: 183).

2_ وظيفة الاختيار :

وعند هذه المهمة الوظيفية يستطيع القائمين على أعمالها تحقيق التوافق بين متطلبات وواجبات الوظيفة وبين مؤهلات وخصائص الفرد المتقدم لشغل الوظيفة وذلك بتطبيق الإجراءات العلمية لاجتياز هده المرحلة الوظيفية كما تبين من الشكل (2). وتتلخص هذه الإجراءات في توفير نماذج طلب التوظيف تحتوى عل كل معلومات طالب الوظيفة , أو تحميل السيرة الذاتية لطالب الوظيفة،تم تأتى إجراء المقابلات المبدئية والهدف منها رفض بعض المتقدمين الذين تتوفر فيهم الشروط الأساسية المطلوبة للوظيفة وتتم هذه المقابلات بصورة سريعة وأحيانا بشكل جماعي، بغية الإلمــام الـسريع بمظهـر المتقـدم، وعناصـر شخـصيته، ومؤهلاتـه، وخبراتـه، ومبررات رغبتـه في الالتحـاق بالعمـل. بعد ذلك تطبق مجموعة اختبارات علمية (اختبارات القدرات، ذكاء، قيم واتجاهات ،أنجاز، وسرعة البديهة والاستجابة.... الخ) وذلك للوصول إلى الاختيار الصحيح للأفراد، تم تأتى وظيفة المقابلات وذلك لتقييم المتقدمين لشغل الوظائف وهى من أكثر الأساليب واسعة الانتشار في مجال الاختيار وذلك لما تتميز به من مرونة وإمكانيات تطبيقها مع كل الوظائف الشاغرة للمستويات الإدارية وهى تعتبر أداة فعالة لتبادل المعلومات في الاتجاهين من المقابل وطالب الوظيفة من خلال إجراء محادثة وجها لوجه ويختلف تطبيق نوع المقابلة على حسب نوع الوظيفة .(شبكة المعلومات الدولية ، الأكاديمية العربية البريطانية للتعليم العالي)، مع الاعتماد على المصادر المرجعية والتوصيات الشخصية في الحصول على المعلومات المتعلقة بقدرات المتقدم من الجهات أو الأشخاص ذوى الصلة بالفرد من خلال فترة العمل المنجزة سابقا ثم تأتى أخر مراحل عملية الاختيار وهى الفحص الطبي لتأكد من لياقته الصحية للعمل الذي سيعين فيه ولا يتم ذلك إلا من خلال إجراء الفحوصات من عيادات أو مستشفيات معتمده. (الخليل،2018: 71)

3_ وظيفة التعيين :

وهى أخر مراحل عملية التوظيف ونتاج عمليتي الاستقطاب والاختيار، لضم المتقدم الذي تم اختياره إلى أعضاء المنظمة. حيث يعتبر بمثابة عقد شراكة بين الموظف والإدارة بحيث أن هذا الموظف هو المنوط بأداء عمل عالي جدا لتحقيق الأهداف التي تم اختباره من اجلها. وتعتبر من أساسيات التعين هو وضع الشخص المنتسب في المكان المناسب، وأن يكون هناك تناسب بين مؤهلات الفرد ومواصفات شاغل الوظيفة(شبكة المعلومات الدولية .منظمة صناع المال). إلى جانب ذلك هناك مجموعة من الإجراءات العملية خلال هذه الوظيفة, والتي تشمل تقديم عرض العمل وتوقيع العقد مع التوقيع على مباشرة العمل وبعد ذلك يأتي تقييم الموظف خلال فترة التجربة الوظيفية والتي تتراوح من سنه إلى سنتين إلى أن يصدر تقرير توصية من الرئيس المباشر بتثبيت الموظف أو انتهاء عقده.(شبكة المعلومات الدولية .الموسوعة الجزائرية للدراسات السياسية والإستراتيجية).

مشكلة البحث :
تتركز إجراءات التوظيف الجيد على تطبيق الوظائف الأساسية لإدارة الموارد البشرية من استقطاب العدد الأكبر من العناصر البشرية المؤهلة لشغل الوظائف ثم تأتي عمليتي الترشيح لهذه الوظائف بعد اجتيازهم لعديد من الاختبارات قبل وبعد التوظيف . ولولا وجود هذه الوظائف داخل عمل إدارة الموارد البشرية لما تحققت الأهداف التي تسعى إليها معظم المنظمات متضمنة تطور هذه العناصر البشرية. وقد ورد من" شبكة البارومتر البحثية نتائج حديثة 2020 متعلقة بزيادة الفساد في البلدان العربية عن طريق استطلاع ودراسة واسعة أظهرت أن 93% من الليبيين الذين شملهم الاستطلاع قالوا أن الحصول على وظيفة يتم في ليبيا عن طريق الواسطة" (شبكة المعلومات الدولية, شبكة الباروميتر العربي, 2006) . وعليه فأن المشكلة الأساسية لدور عملية التوظيف داخل إدارة الموارد البشرية،هو طرح مجموعة أسئلة تتمحور في هذا الموضوع مطبقة على دراسة بحثية بمصرف الجمهورية فرع القواسم.
السؤال الأول :- ما دور عملية الاستقطاب لدى إدارة الموارد البشرية ؟
السؤال الثاني :- ما دور عمليتي الاختيار والتعيين داخل إدارة الموارد البشرية ؟

فرضيات البحث : تم وضع مجموعة من الفرائض التي تم بناء عليها مقترح هذا الموضوع وهى أن :
الفرضية الأولى :- هنالك قصور في أداء إدارة الموارد البشرية بما يخص وظيفة الاستقطاب

الفرضية الثانية :- لا تعتمد وظيفة الاختيار لعملية التوظيف على تطبيق كل الإجراءات العلمية والعملية لاجتياز هده المرحلة

الفرضية الثالثة :- ضعف وقصور واهتمام بمراحل وظيفة التعيين من حيث تقديم عرض العمل والتقييم لأداء الموظف خلال فترة التجربة

أهمية البحث :- تأتى أهمية البحث من أهمية وجود إدارة موارد بشرية فعالة في اى مؤسسة مالية كي تتضمن تحقيق وجود الشخص المناسب الكفؤ في المكان المناسب وبالتالي تحقيق الأهداف التي تسعى إليها المؤسسة . فلولا توفير الاحتياجات من الموارد البشرية ذو كفاءة وفعالية في المؤسسات لما تحققت الأهداف الإستراتيجية المخطط لها لنمو والتطور ،بالإضافة إلى أن الدراسة البحثية ركزت على أهمية التوظيف في إدارة الموارد البشرية وأن هذا الموضوع مازال قيد التطوير ولم يأخذ حقه في البحث والدراسة، لذلك فأن الحاجة الماسة لمثل هذا الموضع للكشف عن الإجراءات العلمية المتطورة والحديثة في مجال التوظيف.

أهداف البحث :- يهدف البحث التعرف على مفهوم ادارة الموارد البشرية وعملها الاستراتيجي الحديث وأهدافها الرئيسية. كذلك يوضح مهام التوظيف الرئيسية بالتفصيل في كيفية توفير الاحتياجات من الموارد البشرية بطريقة علمية سليمة تضمن صلاحية المرشح لشغل الوظيفة الشاغرة، وحتى تكون مهاراته قابلية التناسق مع المسار الوظيفي. ثم في نهاية البحث تم وضع مجموعة من التوصيات يمكن الاستفادة منها من قبل دوى العلاقة بموضوع البحث.

مجتمع الدراسة :- ضم مجتمع البحث مصرف الجمهورية فرع القواسم حيث تم توزيع (30) استمارة شملت جميع موظفين المصرف بما فيهم رؤساء الأقسام . وقد تم استخدام الأسلوب المباشر في توزيع واستلام الاستمارات التي تم إعادتها بشكل كامل باستثناء 5 موظفين لا يتواجدون بالمصرف .

وسائل جمع البيانات والمعلومات :

اعتمد منهج البحث على الوسائل التالية في جمع البيانات والمعلومات

الاعتماد على الكتب والدوريات المتوفرة للجانب النظري للبحث

الاعتماد على توزيع استمارة استبأنة وذلك بوضع عبارات تمثل معايير لوظائف التوظيف الرئيسية والمتمثلة في الاستقطاب والاختيار والتعيين. كما تم الاعتماد على استخدام مقياس ليكرث الخماسي لتقييم إجابات مجتمع الدراسة ومعامل كرونباخ لاختبار مدى مصداقية الاستبيان . وكذلك تم تحليل ومناقشة عبارات الدراسة واختبار الفرضيات بحساب المتوسط الحسابي والانحراف المعياري من خلال برنامج.

الدراسة الميدانية:

لتحقيق أهداف الدراسة اعتمد الباحث على استمارة الاستبيان للحصول على البيانات التي تساعده على اختبار أداة الدراسة المتعلقة بموضوع الدراسة، حيث قام الباحث بتصميم استمارة استبيان تم تقسيمها إلى قسمين، حيث تضمن القسم الأول البيانات الشخصية (العمر،المؤهل العلمي، الجنس، الحالة الاجتماعية، الخبرة الوظيفية)، القسم الثاني يتضمن أسئلة جزئت إلى ثلاثة محاور على دور عملية من الاستقطاب والاختيار والتعيين في الموارد البشرية، وتضمن كل محور (7) عبارات .في هذا البحث استخدم الباحث مقياس ليكرث الخماسي وذلك لتقييم إجابات أفراد المجتمع , ويأخذ مقياس ليكرث القيم من (1 إلى 5) كما هو في الجدول التالي:

جدول رقم (1) مقياس ليكرث الخماسي لغرض تقييم إجابات أفراد العينة

أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
5	4	3	2	1

مجتمع وعينة الدراسة:

لاختبار فرضيات البحث وتحقيق أهدافه، تم اختيار مصرف الجمهورية فرع القواسم كمجتمع للدراسة في هذا البحث, وتم اختيار مجتمع الدراسة بالكامل متضمن التحليل الإحصائي والذي يبلغ عدد الموظفين فيه 30 موظف, ويوضح الجدول التالي عدد الاستمارات التي تم توزيعها وكذلك التي تم استردادها والتي هي صالحة للتحليل.

جدول رقم (2) عدد الاستبيانات الموزعة والمستردة

عدد الاستمارات الصالحة للتحليل	عدد الاستبيانات الموزعة	اسم المصرف	ر.م
25	30	مصرف	1
25	**30**	**المجموع**	

ثبات الاستبانة:

لقد تم احتساب معامل ألفا كرونباخ وذلك لاختبار مدى لاختبار مدى مصداقية هذا الاستبيان وللتحقق من صدق استمارة الاستبيان، حيث أن مقياس ألفا كرونباخ من الاختبار الإحصائية المهمة، فبعد أن خضعت صحيفة الاستبيان لتطبيق معامل الثبات وبلغت قيمته (89.3%), ولقد كانت قيمته عالية يمكن الاعتماد عليها, واستخدامها في الدراسة والجدول رقم (3) يوضح ذلك .

جدول رقم (3) معامل الفا كرونباخ لثبات مجالات الاستبانة

معامل الثبات	المجال
0.981	الاستقطاب
0.970	الاختيار
0.730	التعيين
0.893	جميع مجالات الاستبأنة

المصدر : نتائج التحليل الإحصائي لبرنامج spss

خصائص أفراد عينة البحث:
جدول رقم (4): خصائص أفراد عينة البحث

النسبة المئوية %	العدد	العمر
%0	0	اقل من 20
%16	4	من 20-30
%20	5	من 30-40
%64	16	من 40-50
%0	0	اكبر من 50
%100	**25**	**المجموع**
النسبة المئوية	العدد	المؤهل العلمي
%0	0	ابتدائي
%0	0	إعدادي
%0	0	ثانوي
%84	21	جامعي
%16	4	دراسات عليا
%100	**25**	**المجموع**
		الجنس
%100	25	**ذكر**

	النسبة المئوية	العدد	
	%0	0	أنثى
	%100	25	المجموع
الحالة الاجتماعية	النسبة المئوية	العدد	
أعزب	%16	4	
متزوج	%84	21	
المجموع	%100	25	
الخبرة	النسبة المئوية	العدد	
اقل من 5 سنوات	%28	7	
من 5 إلى 10 سنوات	%24	6	
من 11 سنة فأكثر	%48	12	
المجموع	%100	25	

يبين الجدول السابق رقم (4) أن حوالي 64% من مجموع أفراد المجتمع تتراوح أعمارهم ما بين (40-50) سنة وهي النسبة الأكبر, وهذا مؤشر على حكمة هؤلاء الأفراد وخبرتهم العالية،واذا ما لاحظنا المؤهل العلمي فنجد أنه هناك حوالي 84% من لديهم المؤهل العلمي الجامعي، وهذا مدلول إيجابي على أن نتائج هذا البحث قريبة من الواقع.

كما نلاحظ أن جميع أفراد العينة ذكوراً منهم 84% متزوجين وذوي خبرة وظيفية من 11 سنة فأكثر بنسبة 48% مما يدل على أنهم على معرفة جيدة وفهم جيد لأسئلة الاستبأنة والإجابة عليها ويضفي على النتائج نوع من المصداقية والثقة.

صدق التكوين أو البنية:

لقد تم استخدام مدى ارتباط فقرات محاور الاستمارة وكأنت النتائج جميعها موجبة وقوية الأمر الذي يؤكد انسجام واتساق وترابط فقرات محاور الاستبيان مع بعضها البعض.

جدول رقم (4) معامل ارتباط بيرسون لفقرات محاور الاستبيان

	التعيين	الاختيار	الاستقطاب	
الاستقطاب	0.943**	0.947**	1	
الاختيار	0.963**	1	0.947**	
التعيين	1	0.963**	0.943**	

المصدر : نتائج التحليل الإحصائي لبرنامج spss

تحليل ومناقشة عبارات الدراسة واختبار الفرضيات:

للإجابة على سؤال البحث تم استخدام الإحصاء الوصفي, ولقد تم ذلك بحساب كل من المتوسط الحسابي, الانحراف المعياري من خلال برنامج Spss, وكانت النتائج كما بالجدول التالي:

جدول رقم (5) المتوسط الحسابي والانحراف المعياري لدور عملية الاستقطاب في الموارد البشرية

الترتيب	الوزن النسبي	الانحراف المعياري	المتوسط الحسابي	البيان	ر.م
2	81.6	0.81240	4.0800	من الوسائل التي تتبعها دارة المصرف بالحصول على القوى العاملة من الداخل كالإعلان الداخلي -النقل الوظيفي -الترقية وطريقة الزملاء بالمصارف	1

5	64	1.65831	3.2000	وصف الوظيفة في الإعلام بصورة مناسبة للتعرف على واجباتها	2
6	58.4	1.22202	2.9200	من الوسائل التي تتبعها إدارة المصرف للحصول على القوى العاملة من الخارج من خريجي الجامعات- مكاتب وشركات التوظيف الخاصة والموقع الالكتروني للمصرف	3
4	72	1.01083	3.6000	وجود لجأن لمراجعة الخطة الإستراتيجية للموارد البشرية: العدد المطلوب والنوعية ومكان ووقت التعيين.	4
3	78.4	0.95394	3.9200	هناك بدائل لعملية الاستقطاب تلجئ إليها إدارة الموارد البشرية كالعمل الإضافي والعمالة المؤقتة وتأجير العمالة إلى آخره.	5
2	49.6	1.00499	2.4800	إجراء تحليل وظيفي والاطلاع على محتوياته من وصف الوظيفة ومواصفات شاغل الوظيفة	6
1	82.6	0.971125	4.1200	استلام طلبات المقدمين على الوظائف سواء باليد أو من حلال البريد العادي أو الإلكتروني	7

المصدر : نتائج التحليل الإحصائي لبرنامج spss

بمطالعة بيانات الجدول رقم (5) أعلاه يتضح أن المتوسطات الحسابية للفقرات تراوحت بين (4.1200، 2.4800) وبانحراف معياري يتراوح بين (1.6583, 0.81240)، وبوزن نسبي يتراوح بين (82.6، 58.4) وبمتوسط عام قيمته 3.5200،ونجد أن المتوسطات الحسابية لجميع الفقرات كانت متجهة جهة الموافقة, مما يعني أنه من وجهة نظر أفراد المجتمع داخل المصرف، أن إدارة المصرف يتبع مجموعة من الوسائل العلمية لاستقطاب القوى العاملة وبدرجات متفاوتة ومتدنية في جودة تطبيقها وهذا ما تبينه اختبار(t)، والدلالة الإحصائية (sig)

وللتأكد من الدلالة الإحصائية واختبار الفرضية الأولى للبحث تم احتساب اختبار (t)، ونجد من خلال البيانات في الجدول التالي أن قيمة (t) المحسوبة البالغة 2.060 ذات مستوى الدلالة الإحصائية كانت (0.050) والتي بدورها تساوي قيمة مستوى المعنوية (0.05)، وبالتالي تعتبر هذه الفقرة دالة إحصائياً عند مستوى دلالة 0.05≥α، وبالتالي نقبل الفرضية القائلة بأنه هناك قصور في تطبيق الأساليب العلمية لعملية الاستقطاب.

جدول رقم (6) نتائج اختبار الفرضية الأولى

المتغير	المتوسط الحسابي	قيمة t المحسوبة	Sig. الدلالة الاحصائية
دور عملية الاستقطاب في الموارد البشرية	3.5200	2.060	0.05

جدول رقم (7) المتوسط الحسابي والانحراف المعياري لدور عملية الاختيار في الموارد البشرية

رم	البيان	المتوسط الحسابي	الانحراف المعياري	الوزن النسبي	الترتيب
1	الحصول على الوظيفة عن طريق أساليب الاختيار.	3.4000	1.11803	68	5
2	وجود لجأن مختصة بإدارة الموارد البشرية للمفاضلة بين	3.8800	1.16619	77.6	3

			المرشحين.	
2	78.4	1.15181	فحص طلبات التوظيف ومطابقتها للشروط الوظيفية قبل استلامها.	3
1	84	0.91287	الفحص والتدقيق بالأوراق الثبوتية والتأكد من سلامتها.	4
4	71.2	1.08321	تفريغ المعلومات (طلب الوظيفة) بقاعدة البيانات والتأكد من سلامتها.	5
6	64.8	1.61452	يجتاز المتقدمين لشغل الوظائف مجموعة من الاختبارات كاختبارات القدرات والمهنيةـ اختبارات ذكاء واختبارات المعرفة	6
3	77.6	1.2990	احد الصور التي تعتمد عليها الاختبارات في إدارة المصرف , تحريرية وعملية	7

أظهرت بيانات الجدول السابق الذي يتعلق بنتائج التحليل عن دور عملية الاختيار في الموارد البشرية أنه جميع الفقرات المتعلقة بالاختيار كانت متوسطاتها تتراوح بين درجة متوسطة ودرجة عالية حيث كانت مابين 42000 كحد أعلى، 3.2400 كحد أدنى، ويؤكد ذلك المتوسط العام الذي بلغ 3.4800،مما يعني أنه من وجهة نظر أفراد المجتمع داخل المصرف, أن إدارة المصرف يتبع مجموعة من الوسائل العلمية لاختيار القوى العاملة وبدرجات متفاوتة ومتدنية في جودة تطبيقها وهذا ما تبينه اختبار(t)، والدلالة الإحصائية (sig)

ولاختبار الفرضية الثانية للدراسة تم استخدام اختبار (t) للتحقق من الدلالة الإحصائية وحسب بيانات الجدول التالي نجد أن مستوى الدلالة sig بلغت (0.008) والتي هي أقل من مستوى المعنوية 0.05، وبالتالي نقبل القائلة بأن هناك قصوراً في تطبيق الأساليب العلمية لعملية الاختيار.

جدول رقم (8) نتائج اختبار الفرضية الثانية

الدلالة الإحصائية .Sig	قيمة tالمحسوبة	المتوسط الحسابي	المتغير
0.008	2.898	3.7000	دور عملية الاختيار في الموارد البشرية

دور عملية التعيين في الموارد البشرية:

والجدول التالي يوضح دور التعيين في الموارد البشرية:

جدول رقم (9) المتوسط الحسابي و الانحراف المعياري لدور عملية التعيين في الموارد البشرية

الترتيب	الوزن النسبي	الانحراف المعياري	المتوسط الحسابي	البيان	ر.م
7	59.2	1.09848	2.9600	إجراء فحص طبي إثناء عملية التوظيف.	1
3	79.2	1.39881	3.9600	تقديم عرض العمل وتوقيع عقد تجريبي مع المرشح قبل عملية التعيين.	2
1	87.2	0.95219	3.3600	إرشاد العاملين الجدد مع عملية التقييم أثناء فترة التجربة.	3
6	69.2	1.38804	3.4800	الاهتمام بالنشاطات الهادفة التي تعمل على استقرار الموظف وانسجامه مع قيم العمل ومع زملائه.	4

5	2	80	1.08012	4.000	الاهتمام بالتنوع الثقافي للموظفين والتأثير على سلوك الموظف وذلك بالتركيز على القيم والمعتقدات التي ترغب الإدارة في ترسيخها في أذهانهم.
6	5	70.4	1.00499	3.5200	اهتمام إدارة الموارد البشرية بترسيخ القيم والمعتقدات في أذهان موظفيها كالاهتمام بالعملاء والعمل الجماعي واحترام الوقت.
7	4	77.6	1.12990	3.8800	إجراء فحص طبي أثناء عملية التوظيف.

تشير بيانات الجدول السابق إلى المتوسطات جميعها كانت تتجه جهة الموافقة على أن للتعيين دور في الموارد البشرية حيث تراوحت هذه المتوسطات بين (4.3600, 2.9600), وبوزن نسبي يتراوح هو الاخر ما بين (87.2, 59.2) وبمتوسط عام قيمته 3.6700. مما يعني أنه من وجهة نظر أفراد المجتمع داخل المصرف، أن إدارة المصرف يتبع مجموعة من الوسائل العلمية لوظيفة تعيين القوى العاملة وبدرجات متفاوتة ومتدنية في جودة تطبيقها وهذا ما تبينه اختبار(t)، والدلالة الإحصائية (sig)

ولاختبار الفرضية الثالثة ما إذا كأن هناك قصوراً في تطبيق الأساليب العلمية لعملية التعيين, فنجد أن قيمة (t) المحسوبة كانت قيمتها 2.923 ذات دلالة إحصائية مقدارها (0.007)، والتي بدورها أقل من مستوى المعنوية (0.05) مما يؤكد أنه نقبل الفرضية القائلة بأنه هناك قصوراً في تطبيق الأساليب العلمية لعملية التعيين.

والجدول التالي يوضح هذا القصور.

جدول رقم (10) نتائج اختبار الفرضية الثالثة

المتغير	المتوسط الحسابي	قيمة المحسوبة	الدلالة الاحصائية .Sig
دور عملية التعيين في الموارد البشرية	3.7600	2.923	0.007

وتظهر كل التحاليل الإحصائية إلى مجموعة من النتائج والتوصيات والتي بإمكان إدارة المصرف الاسترشاد بها في المستقبل لإظهار إتباع إدارة المصرف كل الإجراءات الصحيحة في ممارسة وظيفة التوظيف .

النتائج

هناك نتائج جيدة تشير في توفر الخبرة الجيدة والمؤهل العلمي لدى موظفين مصرف الجمهورية فرع القواسم, وهذا يبين في وجود إدارة موارد بشرية تعمل لدى المصرف. أيضا وجود انسجام وترابط في تدرج وتطبيق وظيفة التوظيف داخل إدارة الموارد البشرية التابعة للمصرف . وكذلك هناك قصور في أداء إدارة الموارد البشرية بدرجات متفاوتة الخاصة بمصرف الجمهورية فرع القواسم في تطبيق الأساليب العلمية لوظائف التوظيف (الاستقطاب –الاختيار-التعيين) ،وعليه تبين أداء عمل وظيفة الاستقطاب لدى ادارة الموارد البشرية التابعة لمصرف الجمهورية فرع القواسم , كأن أفضل من أداء باقي وظائف التوظيف وهم الاختيار والتعيين.

التوصيات

يوصى باهتمام أكثر لدى إدارة الموارد البشرية في توظيف موظفين بها ذات خبرة وأخلاق عالية ،لظهورها بالمستوى المطلوب من الأداء . وكذلك أيضا الحرص في تطوير هذه الإدارة بكل مستوياتها الإدارية وخاصة الفنية منها، وذلك بحرصها على استخدام التكنولوجيا في تطبيقها لكل الإجراءات الوظيفية. أما ما يخص عملها الدقيق في هذه الورقة هو حرصها على الاهتمام الأكثر في تطبيق كل المعايير العلمية فيما يخص وظيفة الاستقطاب من توفر لجنة تهتم بالخطة الإستراتيجية للقوى العاملة من توفر العدد المطلوب والنوعية، وكذلك وضع وصف وتوصيف لكل الوظائف المعلنة وإتباع كل الإجراءات الصحيحة وخاصة فيما يخص الاستقطاب من الخارج . وكذلك يوصى باهتمام أكثر في تطبيق المعايير فيما يخص وظيفتين الاختيار والتعيين والمتمثلة في

ضرورة الاجتياز لكل المتقدمين للوظائف الاختبارات العلمية كالقدرات والذكاء والمعرفة،والمحافظة على بيانات المتقدمين للوظائف في وجود قاعدة بيانات وظيفية. وكذلك أيضا الاهتمام والتأكيد من تطبيق إجراءات الفحص الطبي، والاهتمام أكثر لدى إدارة الموارد البشرية بالنشاطات الهادفة التي تعمل على استقرار الموظف وترسيخ القيم والمعتقدات في أذهان موظفيها كالعمل الجماعي واحترام الوقت

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

The Impact of Military Conflict and COVID – 19 on The Libyan Travel and Tourism companies: Applied study on Travel and Tourism companies Located in Tripoli - Libya

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Abstract

The tourism sector is one of the most significant sectors in most countries worldwide. The Libya economy depends heavily on oil as considered the most important commodity in many countries, it impacts the politics and the economy of such countries. As a result, the income generated from the oil sector should be invested in other sectors such as tourism. Thus, the political upheaval that swept through the Middle East and the North African region in 2010 and 2011and recently followed by Covid- 19 brought about great political, economic and health turbulence, followed by a severe decline in the number of international tourist arrivals.

The 2011 Libyan civil war and Covid-19 have halted tourism activities and blocked off the development of Libya's tourism sector. Economic, political and security problems in post-civil war, Libya have created a high degree of turbulence and uncertainty among Libyan tourism companies, as their operations are dependent on national security, political stability and the confidence of international tourists and agents to travel to Libya. The Covid-19 pandemic made the situation worse, a big number of travel and tourism companies closed their doors.

The purpose of this study is to investigate how travel and tourism companies in Libya respond to Covid-19 and during war and post-war conditions. In addition, the study showed how tourism companies developed specific capabilities to remain in the market place. The data were collected through semi-structured interviews with five travel and tourism companies' officials. The collected data were analyzed and a number of recommendations presented.

Keywords: Covid-19, Travel and Tourism companies, Military conflict

Introduction

Libya possesses a great variety of natural, historical and cultural attractions, including archaeological sites. Five of these sites are included in the UNESCO (2015) list of World Heritage Sites. These are: Cyrene, Leptis Magna, Rock-Art Sites of Tadrart Acacus, Sabratha and the Old Town of Ghadamès. In addition, Libya has a coastline of about 2000 km. As such, this makes Libya's beaches among the longest North Africa's beaches along the Mediterranean Sea. Moreover, they are attractive sandy beaches for tourists. Also, Libya is a home to many World War II sites, from cemeteries to headstones commemorating British and Allied servicemen (Ham,2007). Figure (1).illustrates the numbers of international tourists visiting Libya during the period 2000 - 2010. In 2006 international visitor numbers reached 125480. Since 2006 the number of international tourist started to decline (Libyan Tourism Ministry, 2015).
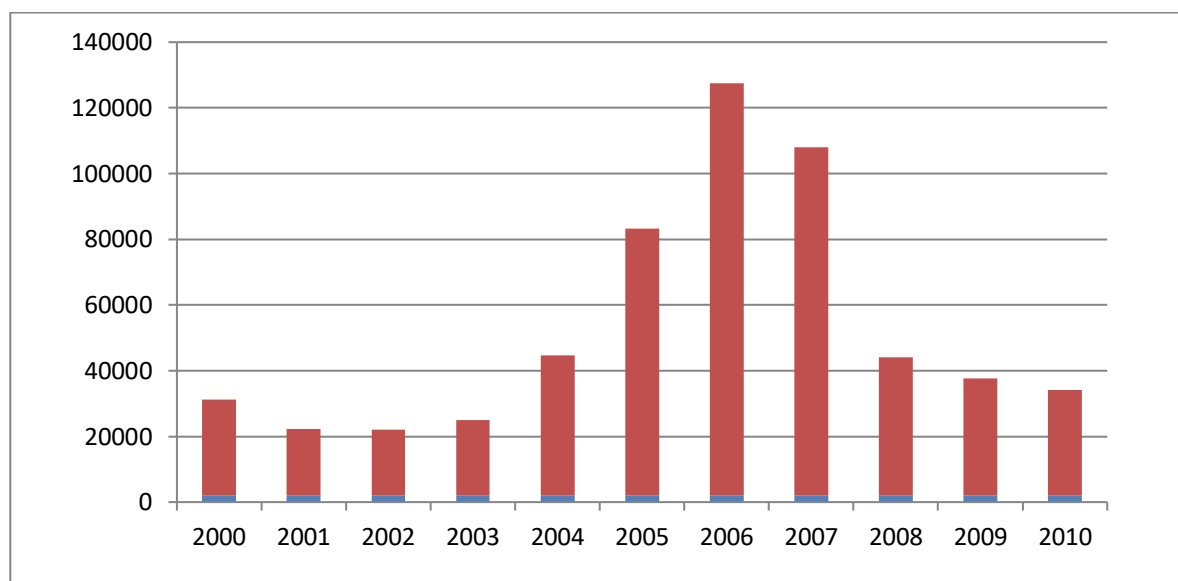
Source: Ministry of Tourism, 2020

**Figure (1): The number of international arrivals
to Libya during the period from 2000 - 2010**

The tourism sector is considered as one of the most economically vital sectors for some economies (Pforr, 2009). Regardless of the nature of crises and disasters, they are all similarly unpredictable. Thus, when a disaster or crisis happens, important aspects of international tourism demand will certainly be affected adversely, including reductions in international visitor arrivals, employment, private sector earnings, government earnings and ultimately, the cessation of further investment (Huang et al., 2008).Some crisis events that may not have been directly related to tourism have proven to have a significant impact on tourism sectors, as in the 2001 World Trade Centre terrorist attack, the 1997 Asian financial crisis, the 2002-3 SARS epidemic and the 2004 Indian Ocean tsunami (Paraskevas & Altinay, 2013). In recent years, literature has investigated how tourism sectors have experienced disasters and crises, from terrorist attacks, war and political instability, health concerns, crime issues, flood and earthquakes etc. In addition, scholars have noted an increasing number of crises and disasters that affect the tourism sector, ranging from natural to human influenced incidents.

Tourism has grown to an activity of worldwide importance and significance. For several countries, tourism is the largest commodity in international trade, while in many others it ranks among the important industries. The tourism benefits for the economy are difficult to measure and can be adopted by both developed and under developed countries. Tourism is one of the main providers of employment. It plays an important role in providing jobs for places where there are less job opportunities (Sinclair & Stabler, 1991).

In addition, tourism may prove to be a valuable source of foreign exchange within a country. It may have a significant effect on the distribution of income between different regions by injecting spending power to underdeveloped areas. Tourism has the potential to contribute to the

development of community's well-being (Haley & Haley,1997). To some countries, tourism has greater scope for economic, social, culture and regional development due to their geographical situation. In fact, tourism may help concerned host countries in various ways to improve their socio-economic standards (Goeldner et al, 2000). As, Abuharris (2014) mentioned, The development of tourism products should be combined with a sustainable focus, which helps to fit in with the local environment and ensure its preservation. The successful formulation and implementation of a tourism development policy is predicated upon the mobilization of human, capital, physical and other resources. These resources spearhead any tourism policy to ensure the identification of the tourism product, organize its marketing and overall control of the sector and its integration into the national economy.

The paper will discuss important issues regarding environmental turbulence and how it affects the travel and tourism organizations. The date collected through face to face interview with senior personnel from the targeted travel and tourism companies will be analyzed and crisis plan for improving the level of performance in within the travel and tourism companies in Libya will be formulated as a result of the analysis findings.

Innovation to Survive

Innovation, both technical and process innovations has become critical to the success and survival of organizations within today's world (Ford & Sullivan, 2008; Mumford, Bedell-Avers, & Hunter, 2008).
There is not much debate about the factors that have conspired to make innovation
critical to organizational success and survival (Dess & Picken, 2000; Tushman & O'Reilly, 1997). First, the rate of technological change has not only accelerated, it has become more diverse, impacting both the ways in which work is conducted and the services provided. Second, competition has become globalized and more intense. One key effect of more intense competition is that even relatively small advantages arising from innovative efforts can prove of great value to an organization. Third markets have become more segmented with different market segments searching for products and services responsive to their unique needs – unique needs which can be addressed only through innovation.
The expectations of people, the demands of markets, intense competition, and the pace of
technological change have conspired to place a new premium on innovation. Those who run today's organizations are not unaware of these facts – facts which point to a straight forward conclusion. Ongoing organizational success, and survival, ultimately, depends on innovation. As a result for the travel and tourism to survive they should focus on innovation through empowering their employees and motivate them to generate new ideas. There are various sources which could be employed to generate new ideas and opportunities for travel and tourism companies to remain in the market. A number of Libyan travel and tourism companies used innovation as an effective weapon to survive the critical situation.

Data analysis and findings

Travel and tourism company's views on environmental turbulence

The study presents the case studies' findings of five travel and tourism companies which have experienced environmental turbulence caused by the Libyan civil war and Covid - 19. The interviews and documentary data of each case study were examined to describe, how each tourism company responded to environmental turbulence.

Company-A is a travel and tourism and company, headquartered in Tripoli, the capital city of Libya. The company was founded in 2004. The company's' initial capital was 2000,000 Libyan Dinars. From 2004 till January 2011, the main focus of the company's operations was on Sahara adventure and heritage sites tours. The company focused on providing tourism and travel services to tourists, especially those from Italy, the U.K, France and Germany.

The company took action in a high-risk period at the beginning of the Libyan civil war. Specifically, on the 20th of February 2011, the Chief Executive Officer (CEO) held a formal meeting with staff of the company to discuss and assess circumstances surrounding the company and then suggest risk-containment mechanisms by which to respond to the risks during the war period.

The crisis committee immediately created and implemented two steps: 1) protecting the company's assets from thieves and vandals by assigning seven employees to participate in guard and security duties. The company recruited two rebels through the help of a third party from the local council of Tripoli and 2) reducing costs via the shutdown of the company's operations. As a result, the company downsizing 21 employees, because the company could not generate enough funds to pay them. Moreover, When Covid- 19 pandemic stared to spread throughout the country, the company made a decision to make employees redundancy. As a result, only three employees remained and programmed were suspended and the only activity left is issuing flight tickets mainly to Turkey.

The company started to focus on innovation. The evidence from two interview transcripts revealed that most of the company's ability to pursue and create new opportunities and change its focus was based on generating new ideas. Through gathering data and information from various sources as interpersonal connections with some relatives, business counterparts and government officials in the local business community in Tripoli city, the company's executives gained access to market information about potential opportunities relating to providing tourism services to domestic tourists and providing accommodation and camping services to excavating scientists from the UK. In addition, a group of Libyan youths who are seeking a unique adventure tourism experience in the Acacus region and Waw An-Namus Mountains in the Great Sahara Sea. Most of them were university students. This gave the company an opportunity to re-build its camp near Sabha region. Since Covid- 19 pandemic stared to spread throughout the country, the company made a decision to make employees redundancy. As a result, only three employees remained and all programs were suspended. The only activity left is issuing flight tickets mainly to Turkey.

Cmpany-B is a locally-owned tourism and travel company, founded in 1996 in cooperation within CEO's family and their relatives. The company employed 10 staff members and its main headquarters is located in Tripoli. The company's initial capital was 25,000 Libyan Dinars.

In the pre-civil-war period, the company operated in the pilgrimage tourism field. The company specialized in providing Hajj and Umrah (i.e. religious pilgrimage) services to Libyan people who were interested in visiting the holy places in Saudi Arabia. During the civil war period, the company

responded to insecure conditions at the beginning of Libyan civil war by taking and implementing two major strategies. The first plan focused on creating and implementing new procedures to reduce all of the company's costs as far as possible. The second step was represented in the decision to shut down all company's operations until the Libyan civil-war stopped.

The annual report in 2011 showed that the employees were paid their salaries during their participation in the protection of the company's assets during the civil war. The CEO of the company adopted new cutback procedures to deal with the deterioration of the tourism business. The new procedures involved completely reducing all kinds of costs, especially administrative costs like copying or direct costs like labour, which was reflected in the shutdown of the company's operations.

In the post-civil war period, the company started to generate new ideas through information gathered to survive the situation. The deputy CEO has successfully obtained valuable market information through his personal relationships based on which new business opportunity was identified. In particular, the Deputy CEO has relationships with some hotel employees who told him that there are foreign journalists and war-correspondents who needed transport services to cover the latest news and events and deliver reports instantly from event places. Hence, the opportunity was to provide transport services from Sirte and Bani-Walid cities to Tripoli City and from Tripoli city to Nafusa Mountains and then to Zuwara city. Moreover, the company started to diversify its tourism activities. In order to survive under the conditions of instability, the CEO discovered other opportunities in the travel area. Through his information sources, he recognised the opportunity to provide ticket-booking services of domestic flights, especially between Benghazi and Tripoli. After the company got permission from a tourism and travel company in Tripoli to sell domestic airline tickets. Since Covid- 19 pandemic started to spread throughout the country, the company made a decision to make employees redundancy. As a result, only one employee remained and all programs were suspended. The only activity left is issuing domestic flight tickets.

Company-C is a locally-owned tourism and travel company and was founded in 1998. The company is located in Tripoli and employed around 16 employees. The company's initial capital was 80,000 Libyan Dinars.
In the pre-civil-war period, the company operated camel riding and 4WD trips in Libyan Sahara. During the civil war, the company did not operate at all.

The CEO and his management team made a decision to move all of the company's movable assets - cars, inventory, office equipment and computers, desks, chairs and electric generators - from El-Alwinat City to the company's headquarters in Tripoli city. Shortly afterwards, the CEO and his management team decided to assign seven employees as security guards to protect and look after the company's assets and properties. Finally, the CEO and his management team decided to reduce or downsize employees working in the second site locating in El-Alwinat with the intention of reducing costs. Thus, they shut down all of the company's operations. The decision was made to move the company's movable assets to Tripoli, due to the lack of a secured warehouse or a safe place to keep the company's assets in El-Alwinat City, especially the cars. In addition, the CEO decided to downsize the company's number of employees, followed by a shutdown of all operations

in order to reduce costs and in response to the challenges due to the civil-war. The company relied on its employees in the process of protecting assets and resources and properties in Tripoli City.

After the end of the Libyan civil war, in particular after October 2011, the CEO and marketing manager reached a decision relating to targeting any investment opportunity associated with a domestic transport market in Tripoli. The innovation of new opportunities were required to survive. After gathering data and information from the market place, they recognised that providing transport services to small hotels' clients and college/ university students is the best available opportunity for them. When Covid- 19 pandemic started, and most activities were paralyzed the CEO made a decision to close the company.

Company-D is a locally-owned tour operator, located in Tripoli, founded in 2000 and started with an initial investment of 80,000 LYD. The company has 13 employees. The company mainly operated as an intermediary between the tourists, especially those from Europe, and some tourism service providers located in Tripoli by jointly organising holiday programs. However, the company had the largest share in terms of making all the necessary transport arrangements to transport tourists from Tripoli to popular archaeological sites in West Libya such as Kabaw, Nalut and Gharyan.

In the civil war period, the company faced difficulty in running its business after an attack from unknown militant group. Thus, the CEO decided to sell all of the company's movable assets. At the beginning of 2013 the CEO and his deputy created the idea that the investment in wedding/ marriage services could be an attractive business. The information collected from the external environment confirmed that the new Libyan Government subsidies and wage increases provided a good incentive to significantly encourage young people mainly from Tripoli to marry and raise children. Thus, they saw the Libyan Government subsidies as the main factor in creating new opportunities for wedding/ marriage services. The CEO invested 60,000 Libyan Dinar in a wedding/ marriage business service. He changed the company structure from a tour-service provider into a wedding service provider.

The new emerged opportunity led to the transformation of the company's headquarters into a wedding/ marriage hall consisting of two floors with 150 seat capacity. In addition, posters, radio and television advertising were used to promote the wedding hall services. The CEO decided to operate the wedding/marriage service even during Covide-19 Pandemic.

Company-E is located in Tripoli, founded in 2018 and started with an initial investment of 15,000 LYD. The company has 6 employees. The company mainly operated as an intermediary between the locals and other tourism companies regarding Haj and Omara programs. As there aren't any international tourists visiting the country since 2010, the CEO started to search for new opportunities through conducting a marketing research to analyze the market, looking for any gaps which might be filed. In addition, the CEO started to collect information and data about the other competitors in the market place to find out about the services they offer to their customers. As the company founded recently it started to make contracts with other companies to work as an intermediary regarding various tourism activities, granting international visas, Hajj and Omara, medical services mainly Germany and Tunisia, local student acceptance from International

Universities and English language Schools. Regarding the Medical tourism, the CEO discovered from the research results that many Libyans are seeking to travel to Tunisia for medical treatments. The company made contracts with hospitals and health centers located in Sffacs and Tunis - Tunisia offering a complete package, which include the transportation means, accommodation and medical advices. In addition the company made a contract with other company in Germany regarding Medical services. Also, the company made a contract with Malaysian institute for English Language and Universities acceptance offers for Libyans who seek to study in Malaysia. Since Covid- 19 emerged all activities has been suspended and the headquarter office in Tripoli rented out to legal accountant till the situation improves.

The Conceptual Framework

Figure (2) shows the essential stages that travel and tourism companies' managers must consider when they adopt the idea of innovation to survive and reduce or at least mitigate the effect of environmental turbulence that travel and tourism companies encountered.
The first stage is to identify the where the problem is and if it is comprehensive or only partial. To identify the problem need to employ the management information system of the organization to collect initial data and information and analysis it to spot the real problem that the business is severing from. Once the problem has been identified is time to think about the solution for the problem and this requires the team to follow the various stages illustrated in Fig (2). For the situation the travel and tourism companies in Libya are going through the need for innovation became essential to survive the this critical circumstances of military conflict and Covid – 19 pandemic. This framework and be applied on all type of businesses worldwide.
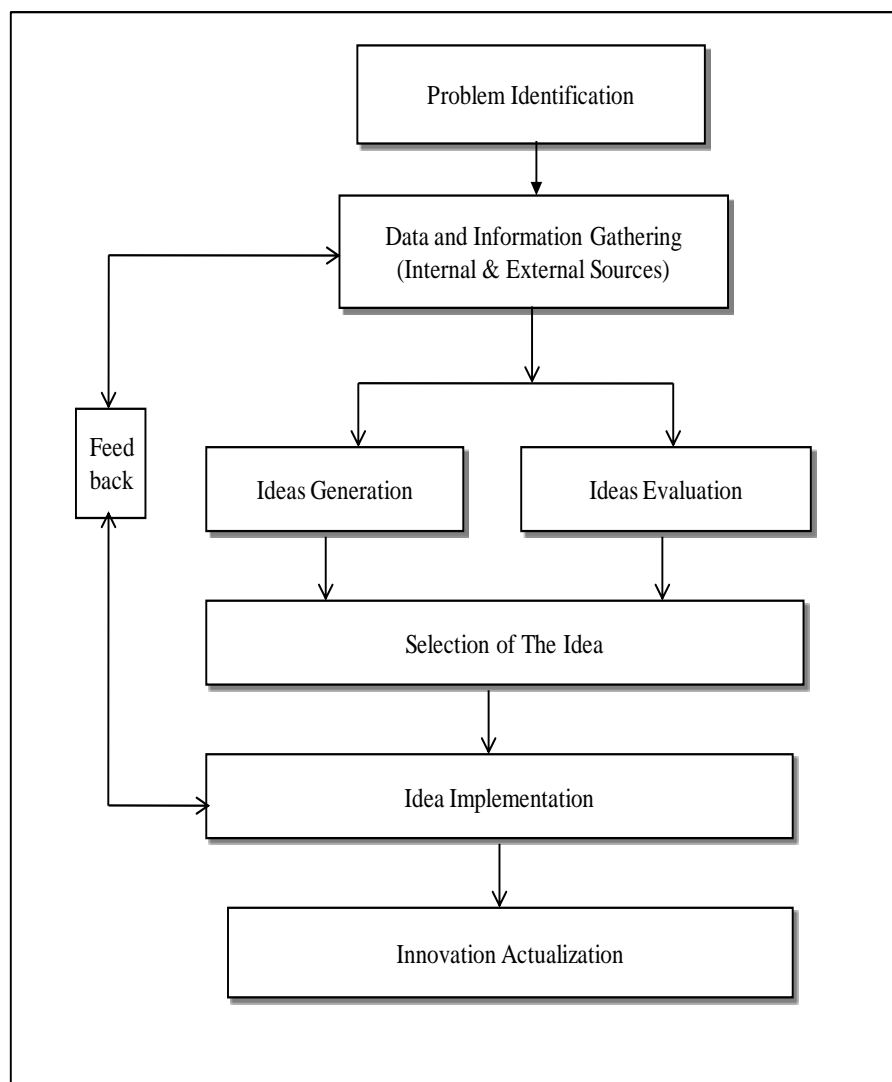
Source: Prepared by the author

Figure (2): Innovation to Survive Stages Framework

Conclusion

Tourism companies require strategies for developing specific knowledge and capabilities to meet challenges in turbulent environments. Security, uncertainty, volatility and Covid-19 recently have continued to serve as a barrier to international tourist arrivals as well as domestic and foreign investors in Libya,. Companies started to identify gaps and innovate new ideas to survive the current environmental turbulence through collecting and analyzing data and information from the internal and external environment. Establishing dynamic capabilities can help in developing an understanding of the abilities of Libyan tourism companies to create business opportunities to

overcome or at least mitigate the current environmental turbulence of Covid – 19 and military conflict.

The travel and tourism companies showed the ability to change their fixed and movable assets to adopt the current situation. Moreover, the ways in which the companies operate based on innovation to size the emerging opportunities of related and unrelated businesses. Business diversification for travel and tourism companies in Libya became essential to survive the current situation which could be achieved through innovation. Innovation could be adopted through following the stages illustrated in Fig (2).

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BASIC APPROACH TO SOCIAL SCIENCES

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Abstract
The world has entered such a period that the reflections of changes that occur with the effects of various technologies on social life cannot be perceived correctly, not only by ordinary people, but also by experts. There is also a socially futuristic side to the event. In this regard, there are contradictory predictions of social forms; Futurists (futurists) and gurus (guides) continue to surprise people with different predictions of the future. Global dangers as well as local ones are spoken more frequently now. Environment, climate, pollution, radiation etc. big issues have arisen regarding all countries. Some of the old institutions are rapidly deforming, and the institutionalization models to be replaced are still in their maturity period. People are subjected to an "information bombardment" through media tools, and they are stuck between "virtual reality" and "objective reality". In this study within the framework of these thematic elements; The general framework of social sciences, the transformations and thoughts that are the source of the formation of social sciences, developments in social sciences from the beginning, general character and relativity in social sciences, the development course of the main social sciences, the theoretical framework in social sciences, method, theory, model, assumption in terms of social sciences Social sciences and institutional characters, based on current issues in social sciences, which will be explained with concepts such as hypothesis, paradigm and scientific research program, In the field of social sciences, which has been in the process of separation since its establishment, the same as at the beginning, but this time very complex social structures have been experienced. In recent years, the necessity of interdisciplinary work has started to be emphasized again.

Keywords: General character and relativity in social sciences, Development course of major social sciences, Theoretical framework in social sciences

Introduction

Social sciences, as a positive science, are subject to empirical and objective phenomena and In conclusions, by expressing the causal relationships between the facts in the form of generalities It is a branch of knowledge that provides the opportunity to be found.Social sciences are interested in individual and social phenomena and behavior, norms, structures and institutions. There is still society at the top of these levels. Society is an organism that transfers past generations' beliefs, values, assumptions, cultural, economic and political knowledge and behavior to new generations(Bates, R. T. (1995).,pp 27-48). Regardless of history, anthropology, sociology, geography, economics, religion, law, politics, any social science discipline, it should also have the knowledge of the characteristics of the society in which it lives in terms of the reality of the social structure and texture it will reveal(F.Major ve A.Forti 1997, p.1). Social science gives an idea about

the relationships between society and individuals in that society. It is a broad field that covers sociology, history, geography, political science, psychology, anthropology and law.

Society, like a human organism, has a basic skeleton consisting of collective senses, perceptions, various functions such as experience, accumulation and belief, and hierarchical connections of the functions of these elements. Political, economic, sociological, technological, legal and political functions and images of society and individuals are shaped according to this skeleton(Melucci, A. (1995),p.107). This basic characteristic finds its expression in the concept of social structure belonging to social structure and fabric. According to the relativity of each society, its social structure is different from each other. The concept of social structure also describes the place of the main elements that make up the society and the regularities between them and their functions(Rosovsky,1996,p.105).

By understanding society and how it works, they can help us make decisions about how to move forward; Because of different political views, cultural and social values As the social sciences focus on the social progress of humanity, they are responsible for working with governments, social services, media and UN agencies to influence the work of major decision-makers.

For example, a capitalist liberal economy is incompatible with an authoritarian socialist political structure based on centralized control. In terms of systems, the existence of mutual harmony and compatibility between the elements of the social structure is the result of the coordination established by various statuses, roles, groups and institutions with each other due to a functioning system unique to the systems(Peters, B. G. (1999).

Method

The subject of social sciences is social facts. The social science discipline, which deals with social studies, includes how individuals in different layers and cultures behave, what they believe, what they think, how they interact with each other, how they develop as a culture in every field and how they affect the world in various fields of social science; In fields such as Anthropology, Economics, Political Science, Sociology, Social Psychology. Although there are certain passages with other issues. characteristics and data that data should carry in a scientific research how to reach healthy results with the reliability of collection techniques, how wrong data will create problems in a study, so before you start collecting datathe need for serious registry scanning and planning first. The distinction between social sciences and others is often made in methods that interest people in their fields of study. Social science, as the name suggests, uses a scientific method, whereas other disciplines such as the humanities take a more philosophical approach to human studies. Therefore, it is more important to investigate social reality, its formation process and structuralization, which is the research subject of social sciences, and social events relatively. In the chaotic and cosmopolitan process that started with technology making different parts of the world more accessible to everyone, societies stuck between "virtual reality" and "objective reality" are subjected to "information bombardment" through the effects of various technologies and media tools(Adam, B. (1996), pp84-137).

With the laws reached as a result of the researches made within the framework of the basic approach in social sciences, the social sciences It provides the opportunity to better understand and control the environment. Social science purpose In order to reach, to grasp and understand the

societies in objective and concrete conditions in terms of time and place; The factors of the change societies are going through in history and to explain the direction, to identify the similarities revealed by statements made on separate societies, and to express them in the form of generalities, laws and theories to bring.

Currents from modernity that started with the industrialization revolution to post-modernity are emerging. On the other hand, global dependencies are increasing(Beck, U. (1992). As a result of speed, flexibility and practicality the resulting mobility; People, goods, information, money and capital circulate more and more rapidly in the world, and this has an absolute effect on economies and social understanding(Dunlop, R.E. and W.Z. Cotton Jr (1994). In the new era in which the world has entered, futurists (futurists) and gurus (guides) rapidly deform some of the old institutions in order to emphasize the necessity of interdisciplinary work in the field of social sciences as a method and to prepare for the future (Frankenfeld, P.J. (1992),pp459-484). Global dangers are mentioned more frequently in subjects such as climate, pollution, radiation(Hajer, M. (1996). To gain a different perspective on the relativity of social sciences as a method and to think of alternatives, feelings and thoughts about the future in social sciences, as in every discipline these feelings and thoughts also enable those who work in this field to direct their horizons to different directions.

Discussion

Social science covers a wide spectrum of setting goals in every socio-cultural field and how to get there. The application of social sciences can also have great benefits on society as a whole and on an individual level. planned and systematic data collection, analysis (analysis), interpretation and evaluation and report a search, learning, making the unknown known, shedding light on the darkness, briefly in an enlightenment process; Necessary to move from the current situation to the missed situation The process of collecting and evaluating data that is necessary for making decisions was emphasized(Arslantürk, Zeki-Arslantürk, E.Hamit;2011). The prominence of creativity such as problem solving, revealing new knowledge and in this sense providing motivation. Epistemological debates on the origin, criteria and limits of knowledge are of great importance because knowledge emerges as the basic fact that makes human beings cultural existence. Social science, by creating an opportunity to discuss different cultures, values and the collective sense, to have a say in the development of society by raising questions about a wide range of social, ethical and legal issues, how new technologies in political, economic, sociological, cultural, psychological fields will affect us. makes the results of the developments understandable(Aziz, Aysel.2011). Discussions about the source of information are the basis of research and discussions on types of knowledge. The source of information is based on a debate about what strengths or mental abilities we owe the right information to. At this point, we come across four main attitudes: rationalism, empiricism, synthesisist approach and intuitionism. On the basis of the basic approach to social sciences, it encourages to adopt a multi-layered approach to different social movements and cultures when creating ideas to understand a world in which technology is rapidly developing, to make living in it absolutely more manageable, to familiarize with technology culture, to understand the society, to contribute to it, thus It develops the power of thinking and reasoning(Walter, Maggıe). By paying attention to the environment you live in and the

factors that affect it, it can offer ideas about how you are in your environment. Some of the basic trends of philosophy of knowledge can be listed as dogmatism, skepticism, empiricism, rasyonalism, intuitionism, positivism and pragmatism. In the epistemological context, dogmatism expresses belief in the reality of knowledge in general, or, more precisely, of correct information, while skepticism expresses a doubt about the reality of true information.There are three main approaches in social sciences(Donatella Della Porta And Michael Keating,2008): Observation technique; Although it is a technique used by the positive sciences, It is an important technique used in social sciences. Observation, natural phenomenon or it is a systematic activity for selecting, recording and regulating behaviors. Positivist, Interpretative and Critical approach. For this reason, dogmatism, skepticism, rationalism, empiricism, positivism or pragmatism do not only hold an epistemological value for humanity in general and philosophy in particular, they form an indispensable ground for understanding the whole spiritual activity of humanity(İ.Ü,2020).These three approaches reflect different perspectives on the world, that is, different ways of observing, measuring and understanding social reality. All three basic approaches in social sciences are empirical, systematic, and theoretical, with significant differences between them. Empiricism advocates the understanding that 'there is nothing in thought that has not been experienced before and can not be'. Empiricism, as in John Locke, shows that the only possible source of knowledge is experience, that there is no knowledge independent of experience, that the human mind is an empty plate (tabular rasa) on which the human mind has its own signs written on it, this plate has no writing on it, no design. It looks like a white paper that does not have. They are all empirical because they all examine the observable reality of human actions such as image, sound, behavior or state, their research is never based on reasoning alone. They are all systematic because they all reject haphazard, sketchy work and involve rigorous and careful work. They are all theoretical because although the nature and purpose of the theory are different for each approach, none of them think that social life consists of chaos and disorder. They all argue that it is possible to explain or understand. From the point of view of rationalism, knowledge and accuracy in this sense appear not as a direct result of our perceptual experience, but as the logical consistency between necessary and universal ideas(Walliman, Nicholas;2011). Human knowledge basically owes its accuracy to human mental thinking. Human perceptual experience cannot falsify this intellectual knowledge as long as it is based on a necessary and universal logical inference. Descartes, who defines intuitive knowledge as precise and explicit knowledge reached as a result of a certain process of reasoning, is a rationalist, that is, rationalist philosopher rather than intuitive. In the positive or scientific period, the cases are tried to be explained with facts, positive and measurable facts. This is what positive sciences try to do. We can talk about varying versions of pragmatism according to its theorists: utilitarianism, instrumentalism, functionalism. Seeing knowledge as a utility, tool or function in the context of practical life is an understanding in the spirit of capitalist society.Thinking about the events of an unknown site because it has not yet been experienced and rationalism, the advocates of rationalism, the logic of the universe and everything in it. Empiricists believe that knowledge can be explained through thinking, while has been obtained through detection and application, so a lot of data and evidence They claim that it is important. Because social phenomenon, rather than expressing the voluntary attitude of individuals, mutual attitude with influences, which includes the whole society and thus has the characteristic of generality It is a system that emerges with purchases. So the cause of every social phenomenon, that is, every social event, However, it should be sought in social facts before itself. empiricism, the method that serves to establish(Punch, Keith F.;2005).

Conclusion

Both developed and developing countries improve their economic and technological developments. to use their scarce resources for their unlimited needs in the most rational use of their available resources and from these scarce resources. In search of maximum benefit, the consumer was trying to multiply his profit and the consumer tried to multiply his benefit. With developing countries today, developed The level of development and discrimination between countries and the inequality in income distribution is due to the inability of resources to be used effectively, appropriately and for profit, and the technology of countries plays an important role(Babbıe, Earl,2011). Countries that have reached the advanced level of technology use are developed countries countries that cannot use advanced technology or produce They are located at the developing country level. Developed countries and developing countries Compared, the gap is widening and these negativities are only scientific and economic It negatively affects not only development but also economic and social development. Knowledge and skill, as well as knowing the essence of the basic approach of social sciences, is an important factor that enables the efficient operation of human ability. The education-industry relationship has a direct relationship with science. Industry, technology, economic initiatives and the intertwining of people with them widely affects. Science is the basis of social life. is the basis(Glicken, M. D.,2003). Advances in science and technology can only lead to a technical improvement. it did not lead to, it affected all areas of life. On the basis of product design or production, many the sector has passed the application of advanced technology, the development of production techniques, the production of new products made possible. The validity or validity of the findings of the field research at the core of the basic approach to social sciences. The most important factor that will determine the invalidity is that the systems are correct, appropriate, planned, organized, and the coordination of a fully effective method is a suitable method. is not(Kelly, A.P.;2007). If the findings are obtained based on appropriate methods and techniques, If not, there would be no point in discussing these findings. Because the information presented there will be no relevant information. While social science produces purposeful information, a hypothesis proposing, subjecting to realization, analysis and explanation of results stages. It follows a method that consists of.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

THE HISTORY OF ECONOMICISTS AND HISTORISTS IN TERMS OF AGRICULTURAL REVOLUTION OVERVIEW

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Abstract

In this study ; Economic history, a subsidiary branch of science that collects historical data that will allow economic theory to be tested against facts; John R. Hicks and Eli Heckser, explaining the changes that occur in the performance and structure of economies over time, covering some characteristics of society that determine the performance of the economy; political institutions of society, economic institutions of society, technology level, demographic situation, ideology of society Agricultural revolution and industrial revolution and the theories that determine them will be evaluated. In this direction, one of the most well known theories in explaining the beginning of settled agriculture; Gordon Childe - Climate Deterioration Theory; Robert J. Braidwood - Core Field Theory, Lewis R. Binford - Population Surplus Theory will be decisive. In summary; The results of the agricultural revolution will be evaluated together with its contributions to the economic history.

Keywords: Population Surplus Theory, Core Area Theory, Climate Degradation Theory, Agricultural Revolution, Industrial Revolution

Introduction

10,000-15,000 years ago, humans began to shape nature to their needs and agriculture emerged in different parts of the planet. We think that they emerged independently of each other and spread from many places such as Mesopotamia, China, South America and Sub-Saharan Africa. Presumably, as more discoveries are made, scientists will discover places where agriculture started even earlier. The birth of agriculture is called the Neolithic Revolution as it coincides with the Neolithic age, that is, the new stone age. The name of the Neolithic age derives from the fact that the stone tools found were softer and more processed than those found in the Paleolithic age, ie the ancient stone age. Many of these tools facilitated early agriculture.

Throughout history, the first known social structure of human history, encountered in the initial stage of many societies before market economy, is the slave society order. The most important stage in the transition to the slavery order in antiquity is the change of the social division of labor with the increase of productive forces together with potential sources of production. In this period, the construction of some simple tools and the use of iron formed the basis of the slavery system. As the rifle was invented, manhood was broken, the production of some metal tools enabled people to work more efficiently, faster, flexibly and practically, to develop their fields of activity economically and to increase production. The use of iron, which provides the start of agricultural mechanization, has enabled a higher amount of products to be obtained in many areas, especially in

the field of agricultural production. Accordingly, surplus products in the agricultural field were evaluated in other ways. While the production pattern gathered in an unbalanced single pole where capitalism can extend its hand, vertical civilizations called communal life, where income is unfairly distributed, alienate people from their own essence, horizontal civilizations shape the future of human on the basis of cooperation and solidarity, eliminating the side of vertical civilization that isolates, enslaves and depersonalizes people. In addition, semi-feudal views in agricultural production areas, towns and villages are rapidly erasing; In areas other than these, production structures continue to carry the semi-feudal network of relations. Water and land and therefore agriculture will determine the future of societies. It is seen that trying to live without agricultural production, excluding agriculture and not protecting water resources is a dangerous course(More, Charles (2000).

Since the agricultural revolution that emerged before Christ and enabled the hunter-gatherer societies to turn into food crops and animal breeding by settling down, agricultural activities have been of great importance since the existence of humanity since it is the source of life in order to ensure the livelihood of tribal communities living with hunting and gathering. Societies dealing with agriculture have less social and artistic activities due to their intense working hours. It is quite possible to talk about an economic division of labor in the transition from gathering to hunting. It is thought that men are hunting, women are gatherers, and hunting is carried out by division of labor among   men.
The improvement of the plants and the effects of the production of agricultural products on human health were also determined in the examinations of tooth and bone fossils found in the Neolithic period. For cereal-based nutrition, there is an increase in tooth decay, no tartar because of not grinding the cereal grains too much, iron deficiency in both babies and adults and malnutrition in terms of protein are some of these findings (Özbek M. (1989),pp.161-172).

The accumulation, change and change that emerged with the increase in production, the increase in productivity and the revival have brought the concept of money. The fact that it becomes difficult to exchange products with other products of the same value (barter method) has led to the emergence of another value criterion, money, which will express each product with its own value. The use of money as a universal medium of exchange has revealed the social segment that buys and sells various products and deals with trade. In addition to being the biggest revolution of the Neolithic Age, the Agricultural Revolution has a great contribution in the fields of socio-economy, history, anthropology, technology, politics, demography, sociology and economics.

The period of universal agricultural society BC. It started in the years 8000-7000 and M.S. It took about ten thousand years until the end of the 1700s. With the birth of societies, the most important economic activity in meeting the physiological needs necessarily is the agricultural production activity. In addition to being the oldest production activity in human history, the world's first and deep-rooted policies have also been developed in the field of agriculture. In summary, when we make a common assessment by the ages, one of the types of economic activity and production that provided subsistence with hunting and gathering since the First Age was agricultural production. Before the market economy in the First Age, since technology did not develop in antiquity, intensive production was made with simple agricultural techniques. Agricultural production in

general was directed towards people's self-sufficient need, not for market-oriented profit(Pearson, Robin ve Richardson, David (2001).

In the Middle Ages, there was a social order and agricultural production structure based on the feudal system dominated by serfs, feudal lords and slavery. In this age, within the feudal society structure, serfdom in agricultural areas and activities, and in urban areas, a guild order for crafts and trade was established. Guilds, which included the status order in urban areas, were organizations established and dominated by masters working in the same profession or craft. There was a stagnation in the economy as there was limited consumption in the feudal order.

Europeans and East Asians were pioneers in the Neolithic Revolution in terms of agricultural innovations and inventions and developments, taking advantage of their geographical advantages, both according to comparative and absolute advantages(Şenel A. (1982), The availability of factor endowments On the one hand, the fact that it is based on a temperate climate that is extremely suitable for the formation of agricultural societies, the effect of a arable, plantable and habitable geography, and a number of plants and animals that can be easily domesticated are concentrated in these regions as a result of this geopolitical colony, and the nature in these regions is easier has been controllable. The most distinctive feature of the Neolithic Age and the turning point of human history is that primitive people who had no knowledge of agriculture and animal husbandry performed plant domestication(Taş, S., Günay E.(2015),.

In addition, communities in both regions were safer from external attacks than other peoples in the central parts of the Eurasian continent. Taking advantage of the opportunities provided by agriculture and the sedentary lifestyle, and from contacts with other communities that have started agriculture, European and East Asian societies were ultimately able to develop steel swords and firearms. On the other hand, they were able to develop immunity against some diseases thanks to their lives in close contact with animals. arım probably began in the Neolithic Age (Polished Stone Age), around 9000 BC. The Neolithic Age is the period when polished stone tools were developed and the last ice age came to an end. There are different theories among historians as to why societies transitioned from hunting and gathering to settled agriculture. These theories will be briefly evaluated in this study(Khan Academy, 2020).

Method

The Agricultural Revolution: It emerged in 8000 BC, transforming the groups of people who lived by hunting and gathering into farmer and shepherd societies. The world population in BC was between 5-10 million. Before the Agricultural Revolution, the upper limit that the world population could reach was 20 million. It increased rapidly after the Agricultural Revolution. In this study, we will discuss methodologically the most well-known theories in explaining the beginning of settled agriculture, one of the theoretical explanation methods. These are; Gordon Childe - Climate Worsening Theory, Robert J. Braidwood - Core Field Theory, Lewis R. Binford - Population Growth Theory; Climate deterioration Theory - Gordon Childe According to this theory, the Near East and North Africa, which once had adequate water resources, became arid due to climate deterioration in the last ice age. Food supplies in these areas dwindled and as a result, these resources were concentrated around existing oases and water resources. Environmental changes are considered as the main starting point in Childe's theory. Due to the decreased natural resources, the

productivity of people in hunting and gathering decreased and the productivity of labor was tried to be increased with agriculture. Criticisms to the theory: One criticism focuses on why this change did not occur in previous climate deteriorations and there is no space and time parallel between climate changes and the emergence of agriculture.Humans began to have closer and closer contact with plants and animals, and to observe more closely. Core Field Theory by Robert J. Braidwood This theory suggests that a cultural development that enables people to get to know the animals and plants in their natural environment more and more led to the Agricultural Revolution. Core Area: It is a natural environment that is extremely suitable for agriculture, where there are many wild animals and plants ready to be domesticated. Around 8000 BC, the people of Palestine and its environs became very familiar with their surroundings. He suggests that people find agricultural techniques through a gradual (coincidental) learning process. Criticism to the theory: Although it is a necessary condition for the birth of agriculture, it cannot see that it is not sufficient. Population Growth Theory - Lewis R. Binford The basic starting point in explaining the transition to agriculture is population growth. The population accumulation that occurred during the migration has put pressure on natural resources. The increasing population has disturbed the balance of natural resources and people. This pressure has caused people to increase their productivity. The struggle to survive has led to the emergence of effective techniques. Criticism of the theory: The main criticism of the theory is its inability to put forward any theory about how and why the population has increased(Yavuz, Y,2020).

Discussion

The beginning of an era in human life, the locomotive and pioneer of economic development The agricultural sector, which is an input at the beginning of all economic activities, shows itself between landowners and stakeholders, sometimes on farms, sometimes within the boundaries of manor houses. From the society where production was based on agriculture, towards the end of the 18th century The Industrial Revolution and the industrial society it brings, many social changes It emerged as a result of experiencing the process. Experienced with the Industrial Revolution social change, raw materials, energy, labor, time, etc. that determine production relations. It has revealed the effects of such factors in social, economic and political areas.At the same time, the effect of agriculture on human behavior and human societies in the satisfaction of people's needs has been quite strong in all periods, although it is as old as human history as a primary need in terms of family and subsistence economy. In the hierarchy of needs, it can be seen as the first agricultural movement where people apply to satisfy an essential need to meet their nutritional needs. From past to present, over time, both geographically, the climate threat, demographic, and the necessity to meet the needs of the growing population fundamentally and continuously, led to the formation of the first communities and settled life in terms of both shelter, livelihood and security. Direct supply in agriculture Perfectionist and the desire to do better, the way to hold on to life and earn a livelihood is to domesticate the plant seed used in feeding humanity first, and with this economic activity, the idea of making tools and equipment with the transition from intensive methods to extensive agricultural mechanization, which will increase the capacity to do business. until the revolution.Agriculture According to the development of technology, this society where the land that can be hunted is very important. and as foraging, rural and rural life, gardening and agricultural communities can be grouped. About a year ago (8000 BC) humans managed to switch to sedentary agriculture. They learned to grow various plants and to tame animals. This development has increased the ability of man to benefit from the resources in his natural environment to an

extraordinary extent and prepared a fundamental economic change called the Neolithic Revolution. Neolithic revolution is the beginning of production, that is, learning agriculture and animal husbandry, instead of hunting and gathering, where human communities have earned their livelihood for thousands of years.Agriculture originated in several regions independently of each other;Middle East, Central America North China, It took thousands of years for this form of economy to spread to Europe, Asia and Africa. For example, it reached Scandinavia at the latest. About 5000 years. Characteristics of the Agricultural Revolution Period Nomadic Shepherd: Nomadism was common in the vast grasslands of Central Asia, Southern Russia and Northern Arabia. Farming: Farming was common in heavily forested areas in the high regions of Syria, Anatolia, Iran and Afghanistan. Characteristics of the Period Continuous sowing: Since fertilizer, crop rotation, fallow were not known, sowing was done continuously. When the productivity was over, other lands were transferred. Food discovery: Almost all of today's food has been discovered. Animal domestication: Animals other than horse and camel were domesticated. Pottery manufacturing Weaving Making bread, Polishing stones(khan, Academy, 2020), Hunter and Gatherer Societies Economic activities hunting and gathering depends. Labor separation is evident and not rigid despite social in organization pretty gender to an important place has. Very little capital is available, Central africa Zone,Country and Village To your life Indexed Societies These communities are nomadic same with communities has properties. Economic production The majority of domesticated It depends on animals. Of an elite upper class finding and cross-sex a prominent relationship differentiation due hunter and from foraging societies They are quite different. Africa and In the middle east Live Bedouins; Garden Culture Owned Societies Serious to the settled life has passed in the sense. Agricultural life partial to grain production depends. In society existing different profession with their groups capital accumulation and labor separation is quite is evident. In Mexico, the Aztecs and Inca civilization, Finally; Agriculture Societies Technology is effective parallel to the use of economic life literally big and mass agricultural depends on production. Top in society and subclasses and this within classes of slavery a caste system in which even available. Top of society earth classes owners, subclasses agricultural workers they form. Of America, Southern Parts, and Civil Prewar Period.   The most important feature of these four social structures, which differ according to their organization, is to their supply from the land and their lack of capital accumulation.(Landers, John (2005), The development of agricultural equipment Adheres to the concept of 'technical' and the center of the economy is the individual, not the factory Considering, these communities are at the point of evolving 'craftsman to worker' as a profession transformation. they are prototype(Güzel, Serkan (2008).

The massive population loss in agriculture and the entry of the machine into the field led to a major transformation in agriculture. As machinery technologies and money economy were adopted in agriculture, new production methods with high profitability emerged. Thus, the economic ground was prepared for the excess population in the agricultural sector to shift to other areas. With the introduction of industrial agriculture in the rural area, the rapid integration of soils and thus the development of large-farm agriculture using machines, the rural population was largely landless. In the face of the surplus of employment in the agricultural sector, the need for labor in the cities where the industry develops has led to the rapid growth of traditional cities, unplanned settlements, the emergence of slums and slums. In fact, with its increasing population structure, it reveals the fact that agriculture will be a part of our lives in every period. Societies whose nutritional needs are not met have demonstrated geographical and political results from the past to the present. The fact

that millions of people still live under the threat of hunger in our age has strengthened the idea that future wars will be on their nutritional needs with the effect of global warming. Since the history of humanity, the societies that have chosen the settled life with the increase of the population and the increasing nutritional need have been instrumental in the formation of basic rules in human and social relations while providing their basic livelihoods. Together with the villages and cities that these communities created, and the first social classes and status, it has produced results that will lead to the formation of rich landowners and working classes(İTDNS(2020).

Conclusion

Farmers in the Middle East during the 4th millennium BC, crop rotation, fallow and fertilizing the soil with animal droppings, ash and shells. They learned the measures to increase productivity. Some cities have solved this problem through specialization. They devoted a large part of the land to viticulture and olive cultivation. They were able to obtain more grain through the olive oil and wine trade. In the following centuries, olive and viticulture type agriculture spread to a large part of the Mediterranean world. The exchange between regions producing olive oil and wine for the market and regions with surplus grain formed the economic foundation of the classical world. This type of economy, where specialization was of paramount importance, was undoubtedly a significant difference from the economic structure of Eastern civilizations, where city dwellers normally made use of the lands around them for food. M. Ö. Specialization and division of labor increased between the years 800-500 Specialization and division of labor increased between BC. Both domestic and international trade flourished, followed by the spread of the money economy. B.C. In the 5th century, when the Athenians defeated the Persians, the golden age of Athens began. Athens came to dominate the entire Greek world. Economically, a period of prosperity has started, based on domestic trade and international trade. Thus, more food was produced in the lands surrounding the valleys between the two great rivers and a sedentary lifestyle became common. Imports of wheat, timber, captives and some luxury goods were covered by silver, olive oil, pottery and other export goods(Khan, Academy, 2020).

Athens currency became an international means of payment, with its setting and weight. Athens almost became a monopoly in a very profitable trade with the barbarian states and Greek cities in the Black Sea region. Various regulations were made in order to ensure uninterrupted grain imports, which the city became increasingly dependent on, and this trade was put under the protection system. Ancient Greek sites have an economy based on agriculture, stagnant, based on tradition, with a more or less collectivist structure; for-profit commercial activities are not seen well. However, rational and individualist thoughts have started to take place. After the advent of agriculture, the population began to increase significantly. There were two sources of economic expansion to support this population growth: On the one hand, new land and resources that could be opened to agriculture were being put into production, On the other hand, productivity was increased with technological changes in agriculture. But the first of these sources had an ultimate limit. Because the supply of new land and resources could be somewhat continuous. Likewise, there was no mechanism to guarantee the development of the second resource, that is, technological change, in a way that would allow an increase in productivity parallel to the population growth(Özkan, Levent(2020).

Results of the Agricultural Revolution; Population has increased: The areas where people settled have expanded. The population of the lands around the Mediterranean has become very dense. Settled Life: Hunting and gathering decreased, agriculture became the dominant economic activity over time. So settled life replaced nomadism. The State Is Born: The state was born as a political organization for the first time. The birth of the state brought war and instability with it. The borders of the state expanded in parallel with the developments in military technology. Iron Age Begins: The Bronze Age was replaced by the Iron Age. Trade Developed: In particular, interregional trade developed and expanded. The market economy was born. Cities Developed: With the Agricultural Revolution, cities were born, expanded and spread throughout the Mediterranean world. Types of Economic Organization Are Born: While the types of economies qualified as redistributors are located at one extreme, the types of economic organizations in which prices are determined by the market mechanism are at the other. Communal Property Is Born: Communal ownership was born as a property system that allocated the exploitation of natural resources only to members of the group and tribe(İTDNS(2020). Agricultural societies that well adjusted their food stocks were able to produce more food from hunter-gatherers and support more populations. As the population grew, farmers began growing more crops than they needed, as they could trade surplus crops for different crops. Non-farmers were also able to focus on making different crops and trade those products for food and other things. People had the opportunity to specialize, concentrate on one thing, and this led to increased productivity. With increased efficiency, better buildings, tools, weapons were built, and states emerged to oversee these activities and military forces to protect people and resources. Agriculture has had a huge impact on humanity, especially in terms of population. This is because growing plants and animals has significantly increased the number of calories people can consume per square kilometer. So, we've actually replaced what people cannot consume with what they can consume. In addition, we enabled plants to grow in places where plants did not grow in the past with techniques such as irrigation. To put it better, there were six to ten million people before the agricultural revolution, experts estimate; hunter-gatherer societies around the world could continue their lives this way. About 10,000 years later, during the time of the Roman Empire, the world's population grew by 25 times to 250 million. After 2000 years, the population increased by 28 times to seven billion. Within about 10,000 to 15,000 years, the development of agriculture led to an almost 1,000-fold growth of the human population. Agriculture has also had environmental effects. Farmers used sophisticated tools to cultivate, irrigate, and build habitats. Farmers used the cutting and burning technique to expand the soil they could use. The first agricultural practices were probably the breeding of wild plant species and the management of livestock. Over time, people have gotten better at raising plants and animals according to their needs. The corn you see in the market and the pigs, cows and sheep you see on the farm did not evolve independently from each other in the wild. It has reached its present form from its original and wild state through the cultivation of humans for thousands of years(Khan, Academy, 2020).

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KADINLARIN, MEME KANSERİ ERKEN TANI, BİLGİ VE DAVRANIŞLARI İLE MEME KANSERİ KORKUSU ARASINDAKİ İLİŞKİ

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Özet

Amaç: Bu çalışma, 20 yaş ve üzeri Kars İli Kanser Erken Teşhis, Tarama ve Eğitim Merkezi (KETEM)'ne başvuran kadınların meme kanseri erken tanı, bilgi ve davranışları ile meme kanseri korkusu arasındaki ilişkiyi incelemek amacıyla yapılmıştır.

Materyal ve metot: Tanımlayıcı ve ilişki arayan bu araştırma, Nisan-Eylül 2017 tarihleri arasında, Kars ili KETEM'e başvuran 20 yaş ve üzeri 360 kadın ile yürütülmüştür. Veri toplama aracı olarak, 33 sorudan oluşan tanımlayıcı anket formu ile "Meme Kanseri Korku Ölçeği" kullanılmıştır. Verilerin değerlendirilmesinde, sayı, yüzde, ortalama, standart sapma, ki kare, t testi ve Anova testi kullanılmıştır.

Bulgular: Kadınların %7.5'inin düzenli olarak kendi kendine meme muayenesi (KKMM) yaparken, %2.8'i klinik meme muayenesi (KMM), %9.4'ü mamografi yaptırmıştır. Kadınların %71.9'u yüksek düzeyde meme kanseri korkusu yaşamakta olup meme kanseri korkusu ile KKMM arasındaki ilişki ve erken tanı davranışları arasındaki ilişki istatistiksel olarak anlamlı bulunmuştur. KKMM yapan kadınların yapmayan kadınlara, KMM yaptıran kadınların yaptırmayanlara ve mamografi çektiren kadınların mamografi çektirmeyen kadınlara göre meme kanseri korku ölçek puan ortalamaları yüksek olup aralarındaki ilişki istatistiksel olarak anlamlı bulunmuştur($p<0.05$). Kadınların meme kanseri erken tanı yöntemlerini yapma/uygulama durumları ile meme kanseri korku ölçeği puan ortalamaları arasındaki ilişki anlamlı bulunmuştur($p<0.05$).

Sonuç: Kadınların yüksek düzeyde meme kanseri korkusu yaşadıkları bulunmuştur. Orta ve düşük düzeyde meme kanseri korkusu yaşayan kadınların erken tanı planlanması önerilmektedir. Yüksek meme kanseri korkusu yaşayan kadınların erken tanı davranışlarının geliştirilmesi için farklı eğitim programları düzenlenerek korkuya sebep olan faktörlerin belirlenerek bu korkunun giderilmesi için danışmanlık verilebilir.

Anahtar Kelimeler: Kanser, Meme kanseri, Kadın, Erken tanı, Meme kanseri korkusu

THE RELATIONSHIP BETWEEN WOMEN'S EARLY DIAGNOSIS OF, KNOWLEDGE ABOUT AS WELL AS BEHAVIOURS TOWARDS BREAST CANCER AND THE FEAR OF BREAST CANCER

Abstract

Objective: The aim of this study was to investigate the relationship between early diagnosis of breast cancer, knowledge and behaviours towards it and the fear of breast cancer in women aged 20 and over who applied to Cancer Early Diagnosis Screening and Training Center (KETEM)in Kars.

Material and Method: This descriptive study was conducted with 360 women aged 20 years and older who applied to KETEM in Kars between April and September 2017. As a means of collecting data,"Breast Cancer Fear Scale" was used with a descriptive questionnaire consisting of 33 questions. Number, percentage, mean, standard deviation, chi square, t test and Anova test were used to evaluate the data.

Results: While 7.5% of the women regularly had Breast Self Examination(BSE), 2.8% had Clinical Breast Examination (CBE) and 9.4% had Mammography. 71.9% of the women had high levels of breast cancer fear, and there was a statistically significant difference between the fear of breast cancer and early detection behaviours (breast self examination, CBE and MG. The mean scores of the women with BSE against those without BSE, women with CBE against the women without CBE and women who had mammography against who did not are as follows respectively and the relationship between them was found to be statistically significant($p<0.05$). The relationship between women's breast cancer early diagnosis methods and their mean scores of breast cancer fear scale were found to be significant($p<0.05$).

Conclusion: It was found that women experienced high levels of breast cancer fear. An early detection plan is advised for women with moderate and low levels of breast cancer fear. In order to develop early diagnosis behaviors of women who have high breast cancer fear, different training programs can be arranged and counseling can be given to eliminate the factors that underlie the fear.

Keywords: Cancer, Breast cancer, Female, Early diagnosis, Fear of breast cancer

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

The Effect of Intrinsic and Extrinsic factors on commercial property rental value in Damaturu of Yobe state, Nigeria

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Abstract

This study examines the intrinsic and extrinsic factors affecting commercial property in Damaturu of metropolis Yobe state with the view of determining those factors and their influence on rental of commercial property in the study area and their relationship. The study gathered field data with structured closed ended questionnaire administered within the Damaturu metropolis using stratified random sampling techniques. Two hundred and twenty (220) questionnaires were distributed out of which two hundred and ten were retrieved and used for the analysis. The data analyzed using descriptive and inference statistics through the use of statistical package for social science (SPSS). The study revealed that intrinsic factor affecting commercial property rental value, are educational amenities, road network, electricity supply, security, health amenities, among others. The study further reveal that the intrinsic factors affecting rental value of commercial property are doors, window, shop sizes floor level roof and floor finishes, the study also show the relationship between satisfaction with provision of public amenities, rent and relationship between satisfaction with the provision of public amenities and suitability of location which reveal that both are positively correlated, similarly the study also show the rent passing in the study area which range between #400/M^2 to 1800/M^2 . the study recommends that provision of more security personnel to curtail the remaining satellite terrorist attack, provision of advance structural quality civic amenities would add more value to commercial property likewise their absence would decline the value of commercial properties in the study area.

1.0 Introductions

Commercial property is a complex product that is crucial for national development in terms of both economy and welfare. In Macro economics commercial property is an investment good from which flows a number of consumer services. Its construction is a source of labour absorption and income generation, its form an important component of counter-cyclical economy management. Therefore commercial properties a property that is majorly built for business transactions and is associated with varying economic warp. These types of properties could come in forms of office space, mails, retails store, shopping centers, and banks (Odu, 2011).

Investment in commercial property are mainly undertaken by individual, cooperate bodies and local government council. Most cooperate investors occupy their own properties while other investors let them to prospective tenants. Investment in this categories of property sector has been growing in leaps & bounds, it would appear that, the property investors are finding this sector attractive. View held by advocates of housing may be articulated by a contrasting position (Burnham, 1955; Abrams, 1964; Burns & Grebler, 1976) The "House's" advocated a much higher level of commercial property investment than the economists, justifying it on both social and economic grounds. The

negative characteristics attributed to poor commercial property include detrimental effects on child socialization, practices, poor attitude toward education, low achievement motivation, and social deviance and criminal behavior. Likewise, improved commercial property could generate beneficial impact in fields of health, education and social pathology.

Commercial property construction has taken part of labor-capital ratio, thereby increasing employment with small amounts of capital. This issue of labor utilization is important in an area with rural-urban migration; to look for available business opportunity and property investor were not left out. Areas facing satellite attack by acts of terrorist and high unemployment rate. Thus, the study area has experienced this menace. Various studies have at different times reveals the problems of commercial property development.

Okupe, (2000), Agbolat, (2000) and Anthonio,(2000) recognize finance as part of commercial property problems but ranked land and buildings materials higher. Commercial property intrinsic and extrinsic factors are generic term used to describe any consistent pattern or change in the general direction of the commercial property industry, which must be based on fact and, over the course of time, causing a statistically noticeable pattern of change (Muller, 1999). This phenomenon can be a result of the economy, a change in mortgage rates, consumer speculations, or other fundamental and non-fundamental reasons. Macdonal,(2003). When such intrinsic and extrinsic factors are based on rental Values then the observation will be confined to any evident changes in rent pattern. Different works or the trends of the values of commercial properties can be view from the works of these authors/researcher: closeness to high rise office building (Thibodeau, 1990) accessibility (Ball, Liyien & Mac Gregor,1998), location, size, structural characteristic Tay, Lau & Leug, (1999), proximity to rail and park (Jensen & Durham, 2003), provision of balconies (Chauwong & Yin, 2004), Proximity to open space (Anderson & West, 2005). The situation of a new sport venue(Dehring, Depken & Ward 2007), distance from fore closed properties (Lee, 2008), and Local historic designation(Ijla, 2008), the impact of inflation and real construction cost in the long-run while in the short-run increase in wealth rising from equity price (Leung, Chow & Han, 2008) among others. Specifically for commercial property certain factors do abound as revealed in precious research such factors include average floor area and number of rooms (slade, 2000); change in floor space and prime lending rates (Chin, 2003); size of sales facility (Kivilahti & Viitanen, 2006); neighborhood and physical characteristics (Marco, 2007). From these backdrops these requisite factors have to be persistently evident for properties to keep commanding attractive values that will generate and impressive trend from the position of investors over a given period of time.

Against fore going discussion this agitate the need of this study to assess the effect of intrinsic and extrinsic factors on commercial properties value in Damaturu metropolis taking into cognizance Maiduguri road, Gashuia road, Potiskum road and Gujba road. These roads in Damaturu metropolis form hub of commercial activities.

A study conducted by Jim and Chen in Guangzhou China in (2006) on a topic impacts of urban environmental elements on residential property value/price. The study reveals that environmental factors influencing housing prices in China are presence of green spaces and proximity to water bodies. Similar research in Taiwan by Chun-Cheng *et al.* (2013) on a research topic the influence of public facilities and environmental quality on residential satisfactions. The study show in-house environment, Security, environmental quality, sport and leisure have more impact on residential utility. Nonetheless study by Islam (2012) on the topic the impact of neighborhood characteristic house price. This study was conducted in the city of Edmonton, Alberta, Canada which shows

among the levels of house hold income and adjacency to ravines are the most significant variable that influence the value of properties positively it was also noted that crime rate has a negative impact on property values.

2. LITERATURE REVIEW

PROPERTY VALUES

Studies on commercial property promote better understanding of the key sources of profit and loss among developers and investors; factors influencing their satisfaction levels; as well as how investors are mostly likely to react in the event of loss with the commercial property condition. Thus, information on loss and profit derivable from commercial property condition is very important to the investor and developer in decision making process. Commercial property it deals with issues such as why, where and when to sell, buy and developed property, what group of commercial property to invest in an how best to finance these transactions in order to achieved the financial goals set by the owner (Galaty, 2006). Real property profits are created in three different ways; purchasing properties, operating a property to maximize annual income and selling at the right time *(Olayinka et al., 2013)*. A research by Ling and Archer, (2006) values of property is a function of physical, location and legal characteristics of the property. Influence by increase or decrease in population, change in age distribution of the population, change in taste and fashion, change in technology, inflation and deflation, change in culture and planning control, institutional fact, location and complementary uses has influence on property values (Oyebanji,2003). In Taiwan by Chun-change *et al. (2013),* the works reveals that, security, sports and leisure have more impact on residential satisfaction with in the area. Chang and Lin (2011) opined that apart from physical characteristics, neighborhood attributes particularly the quality of the environment and the availability of the sports and leisure facilities have the most significant impact on house price in the study area.

A study by Hite *et al. (2001)* analyzed a combination of some structural, locational and neighborhood attributes, effect on property values as well as property taxes. The study paid special attention to some environmental dis-amenities especially the presence of landfills close to residential properties. The results show that proximity to landfills has more significant negative effect on property values than other property taxes. It also suggests that closing landfills will not necessarily eliminate property values impacts.

Related studies in Nigeria revealed that, the cost of land has direct bearing on the quality of development in any neighborhood. The authors observed that residential land values are high in the low-density areas and lower at the high-density areas of Lagos State (Oduwage, 2009). Famuyiwa and Otegbulu (2012) attributed increase in property rental values to availability of water infrastructure with in a neighborhood. A study by Akinjare *et al. (2011)* also revealed that property values rise with increasing distance from landfills while property located close to the landfills experienced reduction in values in Lagos State. Olayiwola *et al, (2005)* opined that accessibility, rent, transport improvement, quality of neighborhood, infrastructural facilities and government regulation are factors influencing land values in Lagos metropolis. It appear that from the review literature work, study on commercial trends values in Damaturu metropolis has been not reflected.

Thus, property values cannot be undermined as it is evident that investor, vendor, tenant, and government agency would find it useful to know the stance of values of property nationally and internationally so to plan ahead on a right option.

CONCEPT OF VALUES

One of the most challenging tasks for many professionals involved with the property appraisal discipline including academics and practitioners, client and the court is developing a correct understanding of value definitions of value can lead to different values estimates.(Carter,2001), over the years courts, academics, and practitioners have had different perspectives on how to define property values. Determining the exact meaning of value has proved to be a considerably difficult task to economist, Valuers and philosophers from time immemorial to date. Baum and Crosy (1995) quoted plato (427-347 BC), saying the concept of values is the most difficult question of all science. According to Cannone and Macdonald (2003) economic value though has its origin in the works of Xenophon (427-355 BC). Xenophon discovered that to people who do not understand how a good is useful to them the best option is to sell if they know how to sell it instead of keeping it. He contended that wealth or money is not valuable to one does not know how to use it. In this regard, Xenophon addressed a fundamental issues of economic though i.e. the distinction between objective value and subject value and between value in use and value in exchange.

Smith and Carter (1723-1790, 2001), the first to complete a comprehensive theory of political economy, saw labor as the sole source and measure of value. To smith labor is the real measure of the exchangeable value of all commodities. Smith (1776) held the view that " the things which have the greatest value in use have frequently little or no value in exchange; conversely, those which have the greatest value exchange have frequently little or no value in use. Von Mises (1949). Asserted that the idea that things with higher utility can be valued less than things with far smaller utility and the inability to solve this puzzle made classical economists to abandon a theory of value the paradox was later solved by Menger, Jerons, & Walras (1834-1910). They developed theory of economic value about the same time but independently from each other based on the concept of marginal utility. However, Menger's work was unique from others based on its greater adherence to reality, the theoretical precisions, and concern with the valuations of the individual actor (Albritton, 1980).

Menger resolved the water- diamond paradox by explaining that people valuation and choices that result in the exchange ratios of the market do not decide between all the diamond and all the water; People do not express rational judgment concerning the "absolute" value of water or diamonds simply because they are usually not in a circumstance to choose between all the water and all the diamonds. Instead, choice is made at a particular point in time and under definite condition between strict open choice of a limited quality of water and limited quality of diamond for particular immediate use. Gossen, (1854) puts it that a good has exchange value only when the demand for it exceeds supply; and that the exchange ratio of goods is equal to the marginal utilities of the traders. However, the yard stick of determining this exchange ratio is difficult task. Menger (1871) and Von Mises expatiated why the measurements of values is a vain effort. For Menger, the entire theory that presents money as the measure of exchange value of goods disintegrates in to nothingness, since the basis of the theory is a fiction, an error. Likewise to Von Mises "everything that can be measured is that of two things to love or to desire "a" more than "b".

According to Appraisal Institute, (2001) and Gaddy and Hart, (2003) property value is influenced by the interplay of four basic factors these are:-

    a. Physical factors: These include Climate, topography, man-made and environmental externalities

    b. Economic factors:- interaction of market forces of demand and supply

  c. Political and governmental factors:- This includes government direct intervention on rent control, fiscal policy, credit local zoning and building codes etc.

  d. Social factors:- this refers to populations changes, attitude toward marriage and family size, level of education and Life style.

TRENDS IN PROERTY VALUES

The need to analyze the pattern of rents is premised on the fact that it would aid entrepreneurs in their planning and cash flow protections; assist developers in investment decision making; useful to real estate professionals in appraisals and evaluation of proposed development projects; as well as provide information for researchers (Nwuba, 2008). Mueller, (1999) in the United State using asking rents and average rental growth rate, evaluated rental growth rates in the physical real estate cycle and found that national average growth rates at each point in the cycle were statistically different.

Scott and Judge, (2000) examined the cyclical behavior in commercial properties values in the UK between 1956 and 1996 using structural times series approach. The study incorporated influence of the transition to short rent reviews during the late 1960s and the short and long term impacts of the 1974 and 1990 property crashes in the analysis, via dummy variables. It was found that once these variables were taken into account a fairly regular cyclical pattern can be discerned with in a period of about 7 to 8 years. Furthermore, the 1974and 1990 property crashes were shown to have had a major long term impact on property value growth. Woods (2007) argued that developments in the commercial property market have greater consequences for the stability of the Irish financial system. This is highlighted by Wood's, (2007) may be especially true in the light of international experience regarding recent financial crisis in developed economics, the result of stress-testing exercises and the current historically high share of commercially property-related lending to private non-financial corporate. Observation made reveals that over the period 2003 to 2006, there was a large increase in capital values in the Irish commercial property market with out a corresponding large increase in rents. Consequently, income yields on all types of commercial property reached very low levels in 2006. The paper investigated whether these trends were unique to Ireland, and considered the extent to which the growth in commercial property values can be explain by fundamental factors. It addressed these issues by examining recent trends in capital values and income yields on Irish commercially property on a historical and international basis and found that nominal income yields have followed a general downward trend since the mid-1990s.

Jeong and Kim (2009) used a time series analysis and a shock-response analysis of the vector auto regression model to find the trends in retail rents in South Korea. The data of retail rent series were compiled by three institute (The Bank of Korea-Bok, the Kookmin Bank and the Korea Statistics Office) from January 1995 to February 2008. The long-term trends in retail rents showed that they continued to rise in general but there was a short sluggish period. The researcher discovered that retail rent had a positive relationship with Office rents, property management expenses, consumer price index and housing deposit-basis lease value, but negative relationship with interest rate.

Related studies in Nigeria which shows a study involving differences in house rent in various locations in Kaduna between 1986 and 2004 shows he existence of house rent inflation rates which was discovered to be statically significant among these areas (Nwuba, 2004). A similar study as a follow up on this research by Nwuba and Adeagbo (2007) found a steady rise in house rents index in Kaduna during the same period. In the succeeding year, Nwuba (2008) evaluated office rental movements in the central area of Abuja, Nigeria between year 2000 and 2007, with a view to measuring the rental growth rates. This result showed that office rents maintained upward trend

during the study period but the growth rates were lower than general inflation rates. Rental growth rates were statically significant but no significant difference existed between the growth rates and inflation rates. There was a strong positive linear relationship between time and office rents movement, which could be an indication that Office rents grow significantly over time.

In Ikeja, Lagos State, due to the rate of increase in rental values of commercial property along each arterial road which has become unpredictable leading to inability of estate surveyors and valuers to accurate predict its trend, Oni (2009) focused on determining spatial distribution and deriving models for predicting the trend of the values. In doing so, data were collected by interviewing Estate Surveyors and Valuers and occupiers of commercially properties in the study area, analyzed using polynomial regression models and spatial distribution of commercial property values along the arterial roads. Models were also derived to assist valuers/appraiser's real estate developers and financiers in predicting accurately future values of commercially property along the arterial roads in the study area.

Reviews on values, trend in property values, shows that values is never constant because economic, social and governmental forces are at work to influence/change the property and its environment. In addition property itself is constantly changing. However, studies from Asia, Nigeria; South-west, Abuja and Kaduna were considered to know the prevailing position of trends of values of the commercial properties.

Against the foregoing review literature this study is geared up to assess the trend of values of the commercial properties in Damaturu Metropolis with a view to provide a workable suggestions that would aids property investor, entrepreneur and other in decision making.

METHODOLOGY

Descriptive and explanatory approach was adopted for this study. questionnaires were prepared and administered to the occupants of commercial properties in Damaturu Metropolis. Singry, (2018) opined that research design is a general structure, plan or decision about how research question and objective can be operationalize in to a coherent project. The occupants of commercial properties along the hub of commercial centers and estate surveyors and valuers in private practice thereby constitute the population of this research work, Krejcie and Morgan (1970) was used to determined the sample size where of 220 out of 500 was taken as the sample size of the study, stratified sampling techniques was adopted as the sampling techniques and Data analysis was conducted using descriptive statistic i.e. Mean, Percentage, and Five point Lirket scale was employed to weight the opinions of valuers, Lessee, Lessor, as regard to set influencing variables. The rating points were as follows: Very High (VH) = 5, High (H) = 4, Indifferent (I) = 3, Low (L) = 2, Very Low (VL)= 1

4. RESULT AND DISCUSSION

ANALYSIS OF QUESTIONNAIRE ADMINISTERED

Table 1: Questionnaire Administered

Questionnaires Administered	Frequency	Percentage
Total Number of Valid Returned	210	95.4
Total Number of not Returned	10	4.6
Total Number Administered	**220**	**100**

Source: Field survey, 2018

Table 1 above showing a total number of questionnaires administered in the study area. A total number of two hundred and twenty (220) questionnaires were distributed to the respondents in which two hundred and ten (210) representing 95.4% were returned, while (10) were not return representing 4.6% of the questionnaire.

Table 2: Satisfaction with existing public amenities in study area

	very dissatisfied		Dissatisfied		moderately satisfied		Satisfied		very satisfied		Mean	Rank
	F	%	F	%	F	%	F	%	F	%		
EDUCATION AMENITIES	6	2.9	8	3.8	63	30.0	113	53.8	20	9.5	3.63	1st
ROAD NETWORK	20	9.5	8	3.8	33	15.7	121	57.6	28	13.3	3.61	2nd
ELECTRICITY SUPPLY	0	0.0	27	12.9	89	42.4	72	34.3	22	10.5	3.42	3rd
HEALTH AMENITY	9	4.3	31	14.8	61	29.0	80	38.1	29	13.8	3.42	4rd
WATER SUPPLY	3	1.4	25	11.9	81	38.6	95	45.2	6	2.9	3.36	5th
SECURITY	15	7.1	37	17.6	100	47.6	37	17.6	21	10.0	3.06	6th
DRAINAGE SYSTEM	18	8.6	44	21.0	73	34.8	67	31.9	8	3.8	3.01	7th
WASTE DISPORSAL SYSTEM	22	10.5	38	18.1	92	43.8	52	24.8	6	2.9	2.91	8th

Field survey 2018

Table shows the level of satisfaction with the provision of public amenities in damaturu metropolis. It shows that the public amenities that are provided most, base on five point measurement scale ware Education amenities with the highest mean value of 3.63 1st, and the least provided public amenities in the study area was waste disposal system with the mean value of 2.91 ranked 8th . in the above table. Therefore, these results are indicating the level of satisfaction with the provision of the public amenities in the study area.

The result above against the research conducted by Jim and Chen in Guangzhou China in (2006) which reveal that presence of green space and proximity to water bodies influencing the value/price of the properties while recent study conducted in Damaturu metropolis reveal that Education amenities, road network, electricity supply and health amenities are the factors influencing the rental value of commercial properties

Table 3: present condition public amenities in the study area

	very poor		Poor		fairly good		Good		very good		Mean	Rank
	F	%	F	%	F	%	F	%	F	%		
HEALTH AMENITIES	3	1.4	6	2.9	50	23.8	99	47.1	52	24.8	3.91	1st
EDUCATION AMENITY	0	0.0	14	6.7	72	34.3	107	51.0	17	8.1	3.60	2nd
ROAD NETWORK	15	7.1	27	12.9	36	17.1	92	43.8	40	19.0	3.55	3rd
ELECTRICITY SUPPLY	6	2.9	15	7.1	93	44.3	90	42.9	6	2.9	3.36	4rd
WATER SUPPLY	3	1.4	39	18.6	66	31.4	96	45.7	6	2.9	3.30	5th
SECURITY)	0	0.0	61	29.0	81	38.6	50	23.8	18	8.6	3.12	6th
DRAINAGE SYSTEM	6	2.9	51	24.3	76	36.2	70	33.3	7	3.3	3.10	7th
WASTE DISPOSAL SYSTEM	9	4.3	53	25.2	101	48.1	35	16.7	12	5.7	2.94	8th

Field survey 2018

Table shows the level of condition of the public amenities provided in Damaturu metropolis. It shows that the public amenities that are provided most, base on five point measurement scale ware Health amenities as the highest amenities provided with mean value of 3.91ranked 1st, and the least provided public amenities in the study area was waste disposal system with the lowest mean value of 2.94 ranked 8th. in the above table. Therefore, these results are indicating the level of condition of the public amenities provided in the study area. The result below shows the frequencies and the percentage of the respondents in the study area.

The result above against the research conducted by Chun- Cheng *et a*l, in Taiwan (2013) which reveal that environmental quality, in-house environment sport and leisure have more impact on properties value/price of the properties while recent study conducted in Damaturu metropolis reveal that Education amenities, road network, electricity supply and health amenities are the factors influencing the rental value of commercial properties

Table 4: Structural condition of part of the property

	very poor		Poor		fairly good		Good		very good		Mean	Rank
	F	%	F	%	F	%	F	%	F	%		
DOOR AND WINDORS	0	0.0	3	1.4	36	17.1	112	53.3	59	28.1	4.08	1st
ROOF	0	0.0	5	2.4	42	20.0	99	47.1	64	30.5	4.06	2nd
SHOPS, OFFICE AND STORE	5	2.4	6	2.9	23	11.0	139	66.2	37	17.6	3.94	3rd

	F	%	F	%	F	%	F	%	F	%	Mean	Rank
SIZE CEILING	0	0.0	9	4.3	35	16.7	130	61.9	36	17.1	3.92	4rd
FLOOR LEVEL	0	0.0	0	0.0	35	16.7	158	75.2	17	8.1	3.91	5th
FLOOR FINISHES	0	0.0	5	2.4	55	26.2	144	68.6	6	2.9	3.72	6th
WALL FINISHES	6	2.9	14	6.7	43	20.5	127	60.5	20	9.5	3.67	7th
TOILET FACILITIES	9	4.3	10	4.8	94	44.8	84	40.0	13	6.2	3.39	8th

Field survey 2018

Table shows the level of structural condition of the commercial property in damaturu metropolis. It shows the structural condition of part of commercial property that are provided most, base on five point measurement scale ware

Doors and windows with the highest mean value of 4.08 ranked 1st, and the toilet facilities with the lowest mean value of 3.39 ranked 8th. in above table. Therefore, these results are indicating the level of structural condition of the commercial properties provided in the study area. The result below shows the frequencies and the percentage of the respondents in the study area.

The result above against the research conducted by Jim and Chen in Guangzhou China in (2006) which reveal that presence of green space and proximity to water bodies influencing the value/price of the properties while recent study conducted in Damaturu metropolis reveal that Doors and windows, shops, offices and stores sizes, floor level are the factors influencing the rental value of commercial properties.

Table 5: Satisfaction with the structural condition of part of the property

	very dissatisfied		Dissatisfied		moderately satisfied		Satisfied		very satisfied		Mean	Rank
	F	%	F	%	F	%	F	%	f	%		
SHOPS,OFFICES AND STORE	0	0.0	3	1.4	17	8.1	150	71.4	40	19.0	4.08	1st
ROOF	0	0.0	5	2.4	36	17.1	106	50.5	63	30.0	4.08	2nd
DOOR AND WINDORS	0	0.0	9	4.3	46	22.2	91	44.0	61	29.5	3.99	3rd
FLOOR LEVEL	0	0.0	11	5.2	27	12.9	128	61.0	44	21.0	3.98	4rd
WALL FINISHE	0	0.0	8	3.8	59	28.1	106	50.5	37	17.6	3.82	5th
CEILING	0	0.0	6	2.9	58	27.6	116	55.2	30	14.3	3.81	6th
FLOOR FINISHES	6	2.9	14	6.7	62	29.5	96	45.7	32	15.2	3.64	7th
TOILET FACILITIES	9	4.3	16	7.6	109	51.9	56	26.7	20	9.5	3.30	8th

Field survey2018

Table shows the level of satisfaction with the structural condition of the commercial property in damaturu metropolis. It shows the satisfaction of the structural condition of part of commercial

property that are provided most, base on five point measurement scale ware , Shops, store and office size with the highest mean value of 4.08 mean ranked 1st, and the toilet facilities with the lowest mean value of 3.30 ranked 8th. in above table. Therefore, these results are indicating the level of satisfaction with the structural condition of the commercial properties provided in the study area. The result below shows the frequencies and the percentage of the respondents in the study area.

The result above against the research conducted by Jim and Chen in Guangzhou China in (2006) which reveal that presence of green space and proximity to water bodies influencing the value/price of the properties while recent study conducted in Damaturu metropolis reveal that Doors and windows, shops, offices and stores sizes, floor level are the factors influencing the rental value of commercial properties.

Table 6: Suitability of the location of the property

	very poor		Poor		fairly good		Good		very good		MEAN	Rank
	F	%	F	%	F	%	F	%	F	%		
ACCESSIBILITY	0	0.0	9	4.3	29	13.8	109	51.9	63	30.0	4.08	1st
HEALTH AMINITY	0	0.0	9	4.3	69	32.9	101	48.1	31	14.8	3.73	2nd
CLOSENESS TO CBD	6	2.9	8	3.8	49	23.3	121	57.6	26	12.4	3.73	3rd
EDUCATION AMENITY	0	0.0	14	6.7	71	33.8	85	40.5	40	19.0	3.72	4rd
SECURITY	11	5.2	18	8.6	82	39.0	72	34.3	27	12.9	3.41	5th
ELECTRICITY SUPPLY	3	1.4	21	10.0	88	41.9	86	41.0	12	5.7	3.40	6th
DRAINAGE SYSTEM	9	4.3	42	20.0	73	34.8	65	31.0	21	10.0	3.22	7th
WASTE DISPORSAL SYSTEM	7	3.3	53	25.2	66	31.4	70	33.3	14	6.7	3.15	8th

Field survey 2018

Table shows the level of suitability of the location of commercial property in Damaturu metropolis. It shows the suitability of the location of commercial property base on five point measurement scale ware:

Accessibility with highest mean value of 4.08 mean ranked 1st, and the waste disposal system with the lowest mean value of 3.15 ranked 8th. In the above table Therefore, these results are indicating the level of suitability of the location of commercial properties in the study area. The result below shows the frequencies and the percentage of the respondents in the study area.

The result above tally with the study conducted by Olayinka *et al* (2013) in Magode neighborhood which reveal that proximity to major transport route, good access road, security, health and educational amenities are the major factors affecting properties values while recent study conducted in Damaturu metropolis also reveal that, good access road, security, health and educational amenities are the major factors affecting properties values

A correlation analysis was carried out to assess the relationship between Extrinsic and Intrinsic factors in the study area. The results presented in the table below.

Table 7: Rent passing on various types of commercial proprieties per meter square in the hub of commercial area in Damaturu metropolis

Property Locations				
Rent/M² Maiduguri road	₦400/M²	₦4500/M²	₦1200/M²	₦2500/M²
Rent/M² Potiskum road	₦780/M²	₦900/M²	₦1100/M²	₦2300/M²
Rent/M² Gashua road	₦1,000/M²	₦1,000/M²	₦1400/M²	₦1800/M²
Rent/M² Gujba road	₦350/M²	₦400/M²	₦1000/M²	₦1300/M²

In Table 7: above shows the rent pass on commercial property along the Maiduguri road of was between ₦400/M² to ₦2500/M² . Similarly property located along Potiskum have similar upward movement between ₦780/M² to ₦2300/M² on the same time with Maiduguri road. It is however, interesting to note that between 2016 to date, the rent have been witnessing a sky rocketing. This could be attributed to peace stability in the study area. Though, the down ward pattern/trends in respondents opined that is attributed to the Crime rate which leads to the locked of some commercial property in the study area. More so, commercial property sighted along Gujba and Gashua roads are witnessing sudden increase in rental values and this could be attributed to structural and environmental improvement by government and provision of new policy that will geared up commercial property development in the study area. Based on the above one could conclude that, Damaturu metropolis has gain peace and stability rendering commercial property investment very attractive to investor.

Table 8: Relationship between Extrinsic and Intrinsic factors

		Extrinsic	Intrinsic
Extrinsic factors	Pearson Correlation	.377**	
	Sig. (2-tailed)	.000	
	N	210	
Intrinsic factors	Pearson Correlation		.377**
	Sig. (2-tailed)		.000
	N		210

Source: Field survey 2018

The relationship between Extrinsic and Intrinsic factors were assessed using Pearson product-moment correlation coefficient. The results show that there is a moderate, positive correlation r = 0 .377.

Table 9: Relationship between satisfaction with the provision public amenities and rent in the study area

		Satisfaction	Rent
Satisfaction with provision of public amenities	Pearson Correlation	.616**	
	Sig. (2-tailed)	.000	
	N	210	
Suitability of the location	Pearson Correlation		.616**
	Sig. (2-tailed)		.000
	N		210

Source: Field survey 2018

The relationship between satisfaction with the provision public amenities and rent were assessed using Pearson product-moment correlation coefficient. The results show that there is a highly, positively correlated r = 0 .616

Table 10: Relationship between satisfaction with the provision public amenities and suitability of the location

		Satisfaction	Location
Satisfaction with provision of public amenities	Pearson Correlation	.716**	
	Sig. (2-tailed)	.000	
	N	210	
Suitability of the location	Pearson Correlation		.716**
	Sig. (2-tailed)		.000
	N		210

Source: Field survey 2018

The relationship between satisfaction with the provision public amenities and suitability of the location were assessed using Pearson product-moment correlation coefficient. The results show that there is a highly, positively correlated r = 0 .716

5. RECOMMENDATIONS

In views of the findings of this research work, recommendation would be addressed below.

Having assess the Extrinsic and Intrinsic factors that influence the rental values of the commercial properties in the study area, the way forward required the provision of more security personnel to curtail the remaining satellite terrorist attack, provision of advance structural quality this would subsequently add values to commercial properties likewise their absence would decline the values of the commercial properties. In addition, State government and other authority concerned should articulate policies that would provide conducive, atmosphere for investor to come in with much capital to invest in real estate investment particularly commercial sub-sector. Since the sector is now attractive and yielding returns; more so, rent control acts should be revisit by legislative to observed its lacunas and dictate rents for all types of landed property not only residential property per say.

6. OPPORTUNITIES FOR FURTHER RESEARCH

Having successfully completed the research work, the study could not be said is free from missing links or gaps. Therefore, Opportunities for further research are put forward below:-

a.   The research work uses descriptive statistics and inferential statistic. Therefore, researchers who want to carry a study on a similar research topic can use other statistical analysis.

b.   The research work only centered in Damaturu metropolis as a study area where as Damaturu as a capital of the yobe State, the state has other major cities so in lieu of this a researcher who want to developed a research on this study can use other town as a study area and generalized his result all over the state.

The study narrowed on commercial property which is a sub-sector of landed property investment types. Therefore, any researcher can develop his/her research on the other sector of real property.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Assessment of factors affecting Building Facility Management Effectiveness in Federal Medical Centre (FMC) Gombe, Gombe State, Nigeria

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Abstract

The activities that might be carried out within facility management are mainly connected to Building facilities and auxiliary activities. In particular, they include building maintenance and maintenance of heating, ventilation and air condition (HVAC) and energy sources, gardening, surveillance, cleaning, logistics, etc. With the role facility management is playing in various aspect of building aid in prolonging the life span of buildings in various in various industries not excluding health sectors. Therefore these studies aimed at assessing the factors affecting building facility management effectiveness in federal medical centre Gombe with a view to identify factors affecting facility management effectiveness in order to enhance the building maintenance, management and functionality. Survey research was carried out through the use of a questionnaire instrument. A total of one hundred and fifty five (155) questionnaires were administered to various department of federal medical centre, out of which one hundred and forty nine (149) were retrieved. Simple random sampling technique was adopted for the study, while data obtained from the field were analyzed using statistical packages for social sciences the study found out that that cleaning aspect of facilities management was the mostly effective in the aspect of building facilities management practiced in public hospital, followed by security, lightning water system , landscape and. It was also found that the ineffectiveness in the aspect of laundry catering and parking space are factors that are influencing facility management effectiveness, the building user's bad Attitude, miss use of facilities and Difficulty in procurement of spare parts of facilities management among the facility users where by this has being emanating from the lack of adequate knowledge about the facility management there are also minimal Persistent breakdown through indiscipline and ignorance in facility management among the users The study conclude that bad user attitude and misuse of facilities lead to break down of system, also adequate consideration of in financial budgeting play a greatest role.

1.0 Introductions

Facility management services were first provided in the 1960s in the USA and they were fully developed in 1970s. But it was only in the 1980s that such a facility management market developed in Europe. Facility management processes as well as management practices are the same all over the world, while different normative constraints have to be handled in different countries. The activities that might be carried out within facility management are mainly connected to Building facilities and auxiliary activities. In particular, they include building maintenance and maintenance of heating, ventilation and air condition (HVAC) and energy sources, gardening, surveillance, cleaning, logistics, etc. Facility management works at two levels; on the one hand, it provides a safe and efficient working environment, which is essential to the performance of any business. On the other hand, facility management can involve several strategic issues such as property portfolio

management, strategic property decision, and facility planning and development, which are related to policy and strategic planning of the organization (Alberto de Merco,GiulioMangano, 2012).

Facilities management is a strategic function and makes a positive contribution to business growth and organization success. This is a diverse profession whose main aim is to provide quality environments, which are fit for the purpose designed for. It also involves a constant balancing act between the competing pressures of time, cost and quality (Andrew and Michael, 2007). The process yields a better productivity which means a state of efficiency or the rate and quality of output based on the rate and quality of input. As it relates to hospital facilities management, higher productivity can mean safer and more reliable equipment, less service cost, less equipment downtime, more revenue and more effective use of man power(David Mutia,JohnKihu, Stephen Maranga, 2012). The medical equipment management professionals ensure that equipment used in the patients care are operational, safe, properly configured to meet the mission of the medical treatment facility and continue to function effectively in a good working condition. For example, proper maintenance can extend the life of equipment. This is essential for providing good health services and saving the scarce resources. However, in addition to maintenance, medical equipment management involves other essential activities which ensure that equipment is effectively planned and budgeted for, procured, and operated etc. Human factors engineering is used to influence medical device procurement decisions in hospitals. The process ensures that the safest, most efficient and effective devices are purchased. Human factors engineering is frequently being cited as an important method to reduce medical error and adverse events and to increase patient safety, when it is applied to the design and evaluation of medical devices (Gill Ginsburg, 2004). The medical equipment life cycle includes the tendering and commissioning of new equipment in conjunction with the end users, the training and education of all devices for staff on their operation and application, performing the necessary preventive disposal, at which point the life cycle begins again (Andreas et al, 2000).

In Gombe state there is no any specified facility management department in public buildings, but management of facilities in public buildings such as hospitals and other organizations are carried out by either both private company and maintenance department of the organization or only by maintenance department. In the study area management of facilities are shared by private company (INEX) and the maintenance department of the organization.

Existing health sectors building in Nigeria lack adequate facility management attention. Most public hospital buildings are in very poor and deplorable conditions of structural and decorative disrepair. While considerable of research have been carried out on factors responsible for the poor maintenance of public housing estates and offices in Nigeria but only scant attention has been given to the key parameters affecting the implementation of facility management programs for public hospital buildings. Therefore there is a need to establish and evaluate the factor affecting facility management effectiveness in public hospital buildings using appropriate analysis. The level of facility management in most public buildings is not up to a standard requirement, most facilities are neglected without given prior attention and this lead to the less function, efficiency and provision of environmentally sound operation and maintenance of assets in a cost effective manner aimed at long term preservation of asset value. There is also serious lack of knowing or understanding the importance of facility management. Therefore, this paper aimed at assessing the factor affecting facility management effectiveness in federal medical centre Gombe.

2.0 Literature review

Hospital Buildings

The healthcare sector is usually considered among the important sectors in any country (Sweis, 2015). A hospital building is a place where patients heal, so keeping the hospital in a good condition is a very important issue to ensure a healthy and safe environment. The main reason of poor hospital buildings state is the lack of maintenance (Mirdeeliana, 2012). It is said that the qualitative aspect of the building is the matter of maintenance (Adenuga, 2012). Many intangible factors were studied in order to figure out the services quality and applied on health sector, and how the outcomes can be affected the outcomes like (Emotional Intelligence, Knowledge sharing, Managerial factors, TQM practices, Risk management Plans), (Abu-Hussein et al, 2016; Alawneh and Swies, 2016; Sweis et al, 2016; Dammaj et al, 2016) but few studies focused on the building of the hospitals. This paper aims at focusing on this rarely studied side.

According to the British Standard (BS 3811) (as cited in Ogunmakinde et al. and Olayinka and Owolabi, 2015), maintenance is defined as any work carried out to maintain or return every facility of the building. In a deeper view, it is defined as the combination of all technical and administrative procedures planned to restore an item to, it should be taken into consideration in any risk management plan (Mubaidin and Alawneh, 2017), retain it to, its acceptable condition, so it can perform its required function well. It has been stated that building maintenance with the required standards extends the life span of the building and achieves better sustainability. Besides, it provides a safety environment for all users (Tan et al., 2014).

In order to execute maintenance activities efficiently, a suitable maintenance plan should be set (Ali et al., 2010). Maintenance management is responsible for using tools and methods to improve the efficiency and to reduce the effects of unplanned stoppages and to reduce costs (Oliveira et al., 2014). The maintenance of hospital buildings is a major issue. It is the last controllable task and sometimes as unnecessary task, which leads to a low level of reliability and operating capacity. Not giving maintenance management in hospital buildings a high priority has led to the deterioration of these hospitals and to the reduction of the health care.

Facility management

Facilities management (FM) is a term that encompasses a wide range of activities involved in the effective management of built assets. It involves the total management of all services that support the core business of the organization. The existence of active facility management may help to identify potential problems with maintenance and running costs before they result in component breakdown and even temporary shutdown of buildings. It can provide a disciplined framework for the examination of many of the relationships between decisions and the satisfaction of the end user of the property, whether in economic or environmental terms. It also provides a framework for the review of user satisfaction as business and other circumstances change. It is clear that facility management is an umbrella term under which a wide range of property and user related functions may be brought together for the benefit of the organization and its employees as a whole. Therefore, the aim of facility management should be not just to optimize running costs of buildings, but to raise the efficiency and suitability of the management of space and other related assets for people and processes, in order that the mission and goals of the organization may be achieved at the best combination of efficiency, cost and quality. Facility management has the potential to contribute significantly and it is important to identify and measure the extent that it supports, or can be adapted to, the changing needs of organizations, and contribute to productivity, profitability, service and

quality. For facility management to grow as a discipline, a paradigm shift is required from focusing purely on premises costs to looking at holistic business performance (Oseland and Wills, 1999).

Facility management in the public sector in Nigeria has suffered from lack of funds for a considerable time. While the requirements for good practice in facility management of building stock have been established over a considerable period, the achievement of good practice is by no means universal (Turrell, 1997). Facility of the built environment impacts on the whole nation. The conditions of the surroundings in which we live and learn, is a reflection of the nation's wellbeing (Lee, 1987). Maintainability of building has been identified as one of the key areas in which the construction industry must achieve significant improvement (Nayantharas de Silva et al, 2004). According to Iyagba and Adenuga, (2003) it is impossible to produce buildings which are maintenance free, but maintenance work can be minimized by good design and proper Workmanship carried out by skilled experts or competent craftsmen using suitable codes of installation, requisite building materials and methods. Management of any process involves assessing performance, and facility management of buildings is no exception (Turrell, 1997). In order for any maintenance manager to measure performance and set priorities, the organizational needs have to be considered i.e. the function and performance of buildings and their appropriate standards will be independent on the user's perception and their primary needs (Chanter and Swallow, 1996). Performance of hospital buildings and their component depends to a large extent on continuous and planned periodical maintenance, which challenges owners and facility managers to institute precise planning based on a well-structured maintenance programs (Shohet et al, 2002). Despite the ever-growing need for lower operational costs, facilities managers must ensure that facilities are constructed and maintained without compromising safety. In Nigeria, colonial architecture in some of the older public buildings especially hospitals which was hitherto famous for its sturdiness and functionality has now becomes less attractive because of the general neglect of the buildings. Overcrowding has also led to the deterioration of the facilities installed (Onifade 2003). If no action is taken all these old buildings and facilities will decay and will only be replaced in function if the means are available. The inadequacy of the operation and maintenance of building and infrastructure in developing countries has serious consequences for economic and social development especially on the health sector.

Level of facility management

Facilities Management Organizational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business. Facilities management encompasses multi-disciplinary activities within the built environment and the management of their impact upon people and the workplace. Effective facilities management, combining resources and activities, is vital to the success of any organization. At a corporate level, it contributes to the delivery of strategic and operational objectives. On a day-to day level, effective facilities management provides a safe and efficient working environment, which is essential to the performance of any business – whatever its size and scope. Within this fast-growing discipline, facilities management professionals have extensive responsibilities for providing, maintaining and developing myriad services. These range from property strategy, space management and communications infrastructure to building maintenance, administration and contract management.

The foundation for facility management

Some key points in the development of facilities management include:

•Cost-cutting initiatives of the 1970s and 1980s under which organizations began to outsource 'non-core' services

•Integration of the planning and management of a wide range of services both 'hard' (e.g. building fabric) and 'soft' (e.g. catering, cleaning, security, mailroom, and health & safety) to achieve better quality and economies of scale

•Formation of the BIFM in 1993, followed by the development of specialized training and a qualification

•Step-change with the Private Finance Initiative (now Public Private Partnerships), becoming an integral part of large-scale projects to manage, replace, and upgrade the country's infrastructure and public service facilities. This new approach was swiftly followed in the private sector and abroad.

Facility management today

The facility management sector is now large and complex, comprising a mix of in-house departments, specialist contractors, large multi-service companies, and consortia delivering the full range of design, build, finance and management. A recent study by Global facility management estimates the worldwide market value to be $1.12trillion (source Global facility management Market Sizing Study 2016).The facilities management profession has come of age. Its practitioners require skill and knowledge. The sector definition continues to expand to include the management of an increasingly broad range of tangible assets, support services and people skills.

Operational or Implementation functions

Operational activities are day-to-day or routine support functions involving workers. Activities include the operation and upkeep of overall physical resources in order to maintain the good condition and appearance of the workplace, to add value to physical resources, and to provide a safe and healthy environment for the organization's primary activities. Tasks at this level have arelatively short-term scope, and involve specific processes, simple and direct, such as cleaning, replacing, repairing, redecorating, grounds-keepingetc. Secure arrangements for such routine operations and services are the bedrock of good facility management practice (Nutt, 2002).Facilities operation and maintenance encompasses abroad spectrum of services, competencies, processed and tools required to assure the built environment will perform the functions for which a facility was designed and constructed. Operation and maintenance typically includes the day to day activities necessary for the building/built structure, its system and equipment, and occupant/users to perform their intended function. Operation and maintenance are combined into the common term operation and maintenance because a facility cannot operate at peak efficiency without being maintained; therefore, the two are discussed as one (Don Sapp, 2017)

Management Functions

Management functions can be distinguished at tactical and strategic levels. Tactics are action plans involving routine, specific and short-term preventive or managerial operations.(Johnson & Scholes, 2002). Such activities, which are best kept simple, focus, for example, on routine actions such as safety procedures for prevention or proper use and care of maintenance resources. Activities on this level support responsible behavior in the workplace and the continuity of working conditions.

Johnson& Scholes (2002) see management strategy as dealing with the complexities of ambiguous, non-routine situations which can affect the direction and future of the whole organization. Strategic decisions demand an integrated approach since the entire organization should move, in unison, in the same development direction. Tactical and operational levels depend on policy direction from strategic planners. The field of tasks envisioned by strategists appears sophisticated and complex, because many processes and people are involved and many aspects of the organization must be orchestrated. Strategy is needed to cope with the prospect of an unknown and changing future since it may generally be said that "the further we look ahead, the more uncertain we become" (Nutt, 2002-03). Although long term forecasting can only hypothesis about the future, strategic planning aims to reduce uncertainty by choosing a preferred path and a reasonable long term direction for the development of the organization (Nutt, 2002)

Physical State of Facility Management in hospitals

All activities associated with the routine, day to day use, support and maintenance of a building or physical asset; inclusive of administration, management fees, normal/routine maintenance, custodial services and cleaning, fire protection services, pest control, snow removal, grounds care, landscaping, environmental operations and record keeping, trash-recycle removal, security services, service contracts, utility charges (electric, gas/oil, water), insurance (fire, liability, operating equipment) and taxes. It does not include capital improvement. This category may include expenditures for service contracts and other third-party costs. Operational activities may involve some routine maintenance and minor repair work that are incidental to operations but they do not include any significant amount of maintenance or repair work that would be included as a separate budget item. Normal/Routine Maintenance and Minor Repairs Cyclical, planned work activities funded through the annual budget cycle, done to continue or achieve either the originally anticipated life of a fixed asset (i.e., buildings and fixed equipment), or an established suitable level of performance. Normal/routine maintenance is performed on capital assets such as buildings and fixed equipment to help them reach their originally anticipated life. Deficiency items are low in cost to correct and are normally accomplished as part of the annual operation and maintenance (O&M) funds. Normal/routine maintenanceexcludes activities that expand the capacity of an asset, or otherwise upgrade the asset to serve needs greater than, or different from those originally intended. Predictive Maintenance/Testing/Inspection Routine maintenance, testing, or inspection performed to anticipate failure using specific methods and equipment, such as vibration analysis, thermographs, x-ray or acoustic systems to aid in determining future maintenance needs. For example, tests to locate thinning piping, fractures or excessive vibrations that are indicative of maintenance requirements

Factors Affecting Facility Management in Public Hospitals Buildings

The factors that are affecting facility management in public hospitals buildings are as follows: Attitude of users and misuse of facilities; Insufficient funds for maintenance jobs; Difficulty in procurement of spare parts due to unavailable funds; Lack of discernable maintenance culture in the country; Inadequate training and development of personnel; Use of poor quality components and materials; The scale of efforts, extent of facilities and resources for maintenance operations on the quality of management in an organization; Persistent breakdown through indiscipline and ignorance; Absence of a form of planned maintenance programs; and Lack of successful maintenance programs by the facility management department. Others are: Lack of skilled

personnel in maintenance department; Natural deterioration due to age and environment; and No adoption of appropriate maintenance cycle for building maintenance.

Several factors are identified that are necessary to address to implement an integrated facility management in National Health Service that includes maintenance strategic planning, maintenance benchmarking, customer care, marketing testing, environment and staff management(Gallager and Harllow, 1998).

Maintenance strategies

Maintenance is defined as the combination of all technical and administrative actions, including supervising actions intended to retain item in or restore it to, a state in which it can perform a required action. Shohet and Lavy (2004) have a similar definition ensuring the continuous, cost achieve cost efficient and operationally effective maintenance system, long term strategy planning for various functions of maintenance is necessary.

In doing so, prioritization/categorization of building components based on record data and failure incidents and root causes of them is the first step toward maintenance (strategic) planning decisions (Sullivan et al,2004). Building maintenance Strategies are divided into unplanned (corrective) or planned (preventive) and predictive maintenance approaches (Rani et al 2015). Corrective maintenance (CM) occurs when a component is going out of function and need intervention in the form repair or replacement (Higgins et al 2002). On the other hand, preventive maintenance (PM) includes planning of periodical repairs or replacement at defined time intervals (Gross, 2002). Predictive (proactive) maintenance monitors the symptoms likelihood of a failure to make-in-advance maintenance interventions based on these predictive measures (Ben-Daya et al, 2009). The main factors that dictate the choice of a maintenance strategy are the maintenance budget and critically (and complexity) of the failure (Horner et al, 1997).

The choice of maintenance strategy in hospitals, as complex buildings (with a lot of mechanical and electronic components, system and equipment), is significantly impacted when the maintenance budget is limited. This has been particularly reported as one of the main maintenance related issues public hospitals (Loosemore and Hsin, 2001). Kutucuoglu et al, (2001) highlighted customer satisfaction as another dimension that forms the maintenance strategies in hospitals. They indicated that the performance of maintenance functions is impacting and shaping the clients satisfaction and (public) perception about a hospital.

Maintenance Cost, Sourcing and Contract Management

Several factors affect maintenance expenditures. We have identified few studies in the literature that review maintenance cost costing in building, mostly without a focus on hospitals.

These studies have shown that the biggest amount of expenditures that occur in the service life of buildings is associated with their operational phase, which includes maintenance activities (Johnson, 1999). Umeh (1999) developed a model consisting of the operational and maintenance cost of hospitals. He identified few source of financing and measured its impact on rising cost of maintenance in hospitals. Stolavs hospital in Norway was examined to determine factors affecting its operating cost (Nesje, 2002). It is advocated that the rate occupancy per bed, age, scale and morphology of hospitals are the factors with greater impact on maintenance costs.A number of studies also highlighted benchmarking as a tool to test and measure the operational and maintenance costs in healthcare facilities (Sliteen and Catarina, 2010). They categorized cost of healthcare facility into investment cost, operational and maintenance activities and disposal cost. They

gathered data on the number of patients and beds, operation and maintenance activities and utilization rate water, gas and other utilities.

Assaf et al, (2011) identified the factors that affect the cost of maintenance in hospitals facilities. They have listed 33 factors that influence maintenance costs in hospitals. These factors were categorized into seven subgroups with separate considerations for public and private hospitals. These subgroups consist of legal requirements, design phase requirements, construction phase requirements, maintenance requirements, projectbudget for maintenance activities, expected maintenance performance and the norms of benchmarks in the maintenance industry. Powell (2002) suggested a model to manage the outsourcing of services in facility management for a general hospital. He asserted facility management practices in hospitals could be outsourced. Shohet (2003) advocated that the success of a maintenance outsourcing practice depends on level of hospital occupancy. In hospitals with high rate of occupancy, facilities are subject to a higher rate of deterioration.

Alzaben et al, (2014) proposed a current reality tree (CRT) to identify the main issues affecting and causing delays in maintenance works in hospitals. They proposed " lack of skills", insufficient communications", "low team motivation", "limited budget" and "low standard of contract work" as the major causes of the deferment in maintenance practices in hospitals buildings.Shohet and Nobili (2016) mentioned that there is a gap between the financial resources available for maintenance in hospitals and the maintenance management expectation and requirements.

Maintenance Resource Allocation

In recent years, facility managers are under increasing pressure to prioritize their ever declining resources for maintenance and replacements (Lavy et al, 2014). Some of the commonly reported consequences of failing to establish such prioritization might include unscheduled required maintenance, additional expenses, reworks in repair and replacement activities and an increasing stock of age components.

In the sense of the current business environment, enterprises resources planning (ERP) has been recommended as a management system to integrate flows of information, materials and monetary transaction (Lee and Kwak, 2011). Incorporating maintenance activities in enterprises resources planning systems can also enable facility managers to monitor the function of the components of a hospital in real time (Rajagopal, 2002).

Enterprises resources planning (ERP) system were originally implemented in manufacturing processes. The research shows that there are key differences between requirements in manufacturing and healthcare facilities when it comes to enterprises resources planning (ERP) (Grimson, 2001; Pedersen and Larsen, 2001). As such enterprises resources planning (ERP) needs to be customized for health care applications to incorporate attributes of each peculiar hospital, such as financing, manpower recruitment and circulation, space and equipment capacities, revenue management and the patients' admission and care units (Lee and Kwak, 2011). In doing so, Shohet and Nobili (2016) developed an enterprises resources planning (ERP) model for maintenance of clinical facilities in a public hospitals by integrating eight key performance indicators (KPIs). These key performance indicators are expressed as age coefficient for facilities (ACy), density coefficient for patients in the clinic (DCy), building performance indicator for operational targets (BPI), normalized annual maintenance expenditure (NAME), maintenance cost efficiency indicator (MEI), maintenance sources ratio (MSR) and maintenance management span of control (MSC). Maintenance sources ratio (MSR) is the indicator which shows the effectiveness of maintenance

division to achieve coherence among different parts of the organization, which is represented by a number (ratio) of employees who are directly subordinate to the maintenance manager (Mintzberg, 1981).

In summary, our literature review revealed that implementation of enterprises resource planning system is advocated for efficient allocation of resources in hospitals' maintenance management. However, there is still limited research on the customization of enterprises resource planning system for healthcare applications. The research in this area is still very case-specific and needs industry-wide benchmarks and key performance indicators.

Importance of Facility Management

Jawdeh, (2013) Wang et al (,2013) This literature has identified the important role of facility management managers during the pre-construction phase, which involves the following aspects client satisfaction, energy efficiency, operation and maintenance, space management and sustainability.

Both facility management and value management should be applied during the early phases of a project and throughout the whole life cycle of a building (Jensen, 2009). Facility management involvement in design reviews is important because maintenance costs increase relative to the improper maintainability of maintenance equipment. The literature review shows that both facility management and value management should be integrated to allow designers to consider the various aspects of facility management in their designs, as well as to enhance design support functions. However, few studies have addressed the topic of facility management involvement in value management.

Sustainability of Facility Management

It has been conclusively shown that various roles are needed to engage and integrate sustainability into a value management (VM) study (Abidin&Pasquire, 2007; Nawawi et. al, 2015). Abidin and Pasquire (2007) stated that facility management (FM) managers should give input on sustainable development issues. However, concentrating too heavily on sustainable development may overshadow issues at the macro-scale level during the operational stage, since any design must have the capacity to minimize maintenance costs and ensure safety (Enoma, 2005). Including facility management managers in the full scope of the design process may minimize costs in procurement accounts and reduce work modifications and unnecessary alterations (Enoma, 2005).

Nawawi et al. (2015) reported that the active participation of facility management managers during pre-construction phases could ensure that sustainable strategies are not affected following the delivery of facilities and that plans and policies for facilities are kept up-to-date. The facility management manager's role in addressing sustainability includes checking for the appropriateness of various sustainability design aspects and offering input concerning waste disposal systems. Abidin and Pasquire (2005) found that respondents generally believe that sustainability issues are important and should be given attention in value management studies.

The use of new materials and technological advancements could help control energy wastage in the context of adding value to existing structures (Chan, 2014). New items can be expected to discharge low or no unpredictable organic compounds and formaldehydes, both of which can have negative ecological impacts and negative effects on building occupants. Poly Vinyl Chloride (PVC) utilization should be minimized through upgrades because of its negative effects relative to its life expectancy.

Factors Affecting Building Maintenance

Assaf (1996) opined that design and construction faults that affect maintenance of buildings are defects in civil design, defects in architectural design, defects due to consultants firm's administration and staff, defects due to construction drawings, defects due to construction inspections, defects due to construction, defects due to contractual administration, defects of construction materials, defects due to construction equipment, defects arising from specifications and design defects in maintenance practicability and adequacy. Adejimi (2005) asserted that to a large extent, building maintenance problems can be attributed to problems originating from poor design. Adejimi (2005) further stated that the design process could be optimised to achieve adequate planning in choosing the right materials, good workmanship, plants and equipment and labour in order to reduce maintenance problem. Adejimi (2005) in his study identified twelve relevant factors affecting the maintenance strength of buildings as design resolution, structural strength, specified material strength, maintenance manual, safety measures, skill maintenance personnel, maintenance plants, environmental factors, usage factors, quality control factors and post construction prevention strength. Kiong and Akasah (2012) analyse the maintenance factors for IBS precast structural system in Malaysia in order to produce a better quality of the IBS precast building. They identify design aspect as an important factor of the building quality. Zulkarnain et al. (2011) reviewed the critical success factor in building maintenance management practice for University sector under four perspectives; customer(customer satisfaction, service quality, customer complaint, reaction to customer needs), internal processes (service excellence, technology capability, customer employee, competence, process efficiency, e.t.c.), financial perspective (management expectations, financial growth, cost reduction, productivity improvement, e.t.c.) and learning and growth perspective (technology leadership, continuous service improvement, upgrading staff competence, e.t.c.). They concluded that critical success factor can help in providing a successful competitive performance for the university sector in the area of maintenance management. Olagunju (2012) identified factors that influence the level of maintenance of residential building standard. In the study eight factors were identified to be significant to physical condition of building in Niger State, Nigeria. The variables are structural components condition, roof components, toilet facilities, discharge of waste water component, exterior wall condition, condition of walkway within the building premises, electrical wire and switches conditions, interior walls surface condition.

3. Methodology

This study use Quantitative method as research design. Visitors of the population for this study are the staff of various department of federal medical centre Gombe. The samples frame of the study are 260 staff of the hospital, the sample size of 155 which was obtained using Krejcie and Morgan (1970) table. Simple random sampling technique is adopted thus every visitor must have an equal chance of being selected and participated in this research (Keyton, 2014). The instrument that was used in this study is self-administered questionnaire. SPSS was used for proper analysis of the variable in the research and was also used to test the reliability of the instrument. Pretesting of the questionnaire was carried by giving copies to 5 professionals for correction. Some wordings were improved and questions were added. After pretesting, The data gathered from the field survey was analysed using descriptive and regression analysis using statistical package for social sciences

(SPSS) software (version 20.0). All in assessing the factor affecting facility management effectiveness in federal medical centre Gombe.

4. Results and Discussion
Demography
The demographic information of the respondents was collected. The frequency and percentage analysis was carried out and the results presented to explore the respondents' profile.

Table 1: Demography Results

Variables	Options	Frequency	Percentages
Gender	Male	88	67.7
	Female	42	32.3
Age	Under 30 years	51	39.2
	30 to 60 years	74	56.9
	Above 60 years	5	3.8
Level In Work	Level 1 to 5	50	38.5
	Level 6 to 10	61	46.9
	Above 10	19	14.6
Department	Medicine	24	18.5
	Pharmacy	20	15.4
	Surgery	23	17.7
	Physiotherapy	15	11.5
	Administration	48	36.9

Table 1: shows that the majority of the respondents are male representing 67.7% while female represented 32.3%. This means that male respondents have dominated the study area. The age 30-60yrs has the highest percentage of 56.9% followed by age under 30yrs with 39.2%, then age above 60yrs with 3.8%. This indicates that age 30-60yrs dominated the age of the responded and above 60yrs is the least age in the study area. Level 6 to 10 have the highest percentage of 46.9% followed by level 1 to 5 with 38.5% and the least was above level 10 with 14.6%. Level 6 to 10 dominated the area having the highest percentage and above level 10 having the least percentage. Thedepartment in the hospital, administration department is the one having the highest percentage of 36.9% both and followed by department of Pharmacy 18.5%, surgery department 17.7%, Physiotherapy 11.5%

Analysis of Results

The data analyses results and findings for each research question are presented below. The analyses results were presented in tables and findings were explain in textual forms. Descriptive statistics based on mean ranking was carried out to explore the level of facility management effectiveness in the public hospital, the results showed the ranking, mean and standard deviation for each Item.

Table 2: level of facility management effectiveness

Facility management	Mean	Std. Deviation	Ranking
Cleaning	4.17	.779	1st
Security	4.08	.733	2nd
Lightening	4.01	.762	3rd
Water system	3.92	.743	4th
Landscape	3.92	.868	5th
Parking space	3.92	.768	6th
Catering	3.74	1.111	7th
Laundry	3.65	1.003	8th

Table 2: shows the level of facility management effectiveness in the hospital. It shows that the most effective facility management in the hospital, based on five point measurement scale, were Cleaning with 4.17 mean ranked 1st, Security, with 4.08 mean ranked 2nd, Lighteningwith 4.01 mean ranked 3rd, Water systemwith 3.92 mean ranked 4th, Landscapewith 3.92 with mean ranked 5th, Parking spacewith 3.92 mean ranked 6th, Cateringwith 3.74 mean ranked 7th,and the least effective facility management in the study area wasLaundrywith 3.65 mean ranked 8th Therefore, these results are indicating the ineffectiveness of the laundry catering and parking space facility management in the study area. Also descriptive statistics based on mean ranking was carried out to explore the factors that influence the facility management effectiveness in the study area. The results in table below showed the ranking, mean and standard deviation for each Item.

Table 3: Factors that Influence the Facility Management Effectiveness

Factors	Mean	Std. Deviation	Ranking
No adoption of appropriate maintenance cycle for building maintenance	2.62	1.383	1st
Lack of discernable maintenance culture in the country	2.58	1.340	2nd
Inadequate training and development of personnel	2.56	1.306	3rd
Natural deterioration due to age and environment	2.54	1.246	4th
Insufficient funds for maintenance job	2.51	1.196	5th
Lack of skilled personnel in maintenance department	2.51	1.301	6th
Use of poor quality component and materials	2.49	1.129	7th

Absence of a form of planned maintenance programs	2.46	1.313	8th
Persistent breakdown through indiscipline and ignorance	2.38	1.209	9th
Difficulty in procurement of spare parts	2.35	1.328	10th
Attitude of users and miss use of facilities	2.15	1.309	11th

A mean ranking was conducted on the factors that influence the facility management effectiveness in public hospitals buildings in the study area It was observed that No adoption of appropriate maintenance cycle for building maintenance with value mean of 2.62 ranked the 1st ,Lack of discernable maintenance culture in the country with value mean of 2.58 ranked the 2nd ,Inadequate training and development of personnel with value mean of 2.56 ranked the 3rd ,Natural deterioration due to age and environment with value mean of 2.54 ranked the 4th,Insufficient funds for maintenance job with value mean of 2.51 ranked the 5th ,Lack of skilled personnel in maintenance department with value mean of 2.51 ranked the 6th , Use of poor quality component and materials with value mean of 2.49 ranked the 7th ,Absence of a form of planned maintenance programs with value mean of 2.46 ranked the 8th ,Persistent breakdown through indiscipline and ignorance with value mean of 2.38 ranked the 9th ,The least mean value of the factors that influence the facility management effectiveness was Difficulty in procurement of spare parts and Attitude of users and miss use of facilities with value mean of 2.35 and 2.15 ranked the respectively These results are indicating that the influential factors of the facility management effectiveness in the study area.

Regression analysis was carried out, to assess the influence of **factors of facilities management** on **effectiveness of facility management**. The r^2 value in table 6 and 7 shows how much of the variance in the dependent variable **effectiveness of management** is explained by the independent variable of Mast **factors of facilities management**. In this case, the value was r^2= .187, f (1,128) = 29.414, p < .001. This means that the independent variable **factors of facilities management** explained 16.3% weak effect size in **effectiveness of management**, with significance at p<0.001. backings by (Bartlett & Ghoshal 2002) in his that most Organizations and institution often fail to recognize the importance of facility management to their business performance and success, because they fail see the effectiveness of facility management in any of their management concern related activities

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.432a	.187	.181	.89466

a. Predictors: (Constant), FACILITYMANAGE

Table 5: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.

	Regression	23.543	1	23.543	29.414	.000[b]
1	Residual	102.453	128	.800		
	Total	125.996	129			

a. Dependent Variable: AFFECTING

b. Predictors: (Constant), FACILITYMANAGE

6. Recommendation

Public hospital buildings are places of healing as such more has to be done to introduce facility management department so that facility managers' staffs can improve the effective operation state (physical-functional condition) of the buildings. Maintenance management and their team should adopt proactive approach to reduce the occurrence of defects, which will consequently bring about better physical and functional public hospital buildings elements and services. Government should provide appropriate maintenance cycle for building maintenance and adequate fund for the running of public hospitals and private individuals and organizations should endeavours to assist government health related issues. Government should equally make it as a matter of policy for private and public hospitals that there should be a maintenance policy guiding their maintenance programmes. Maintenance managers should equally give the narrow managerial span of control a trial in use as this may likely bring about a more effective organizational structure leading to better maintenance management of public hospital buildings. It is also important that maintenance management work together with top administration management so as to secure sufficient funds for maintenance works as well as ensure that such funds is judiciously utilized. Finally, maintenance management of public hospital buildings should ensure that the listed hypothesized factors are kept under check, as this will assist them in planning and executing maintenance programmes, as well as overcome the prevailing maintenance problems of public hospital buildings.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Factors Influencing Non Users' Perception for Green Food Products

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Abstract

Considering the danger of environmental and health hazards, the importance of environmental consciousness in the form of promoting consumption of green products, which are environment friendly, is felt by every cognizant human being. While the concern for the health of environment and non-users has been reflected in endorsing green products, our earlier research has put forth a set of identified factors which influence preferences for green products. On this backdrop, this study has been undertaken, considering the green Food products only, to prioritize the factors on the basis of the magnitude of their influences on non-users' preferences. Identification of factors influencing preferences for green Food products which has been done in our earlier research through factor analysis has been referred in this study and placed on the backdrop. In order to prioritize the identified factors, the technique of multiple regression has been used. The respondents considered for this study are persons aware about green Food products based in and around Kolkata, India. The paper also tries to find out the impact of different psychographic variables with respect to popularity of green food products. The findings so obtained will definitely help to strategize for stretching the incidence and depth of usage of green food products focusing on most influencing factors and hence contribute to safeguard the health of people and environment at large.

Keywords: Green Food Products, Factors, Kolkata, Multiple Regression, Psychographic Variables

1. Introduction

From the last decade onwards people became more concerned about their health, as a result of which, they are using more of green products. Green products can be stated as having less of an impact on the environment and are less damaging to human health than traditional products. Hence they are also called as sustainable or environment friendly product. Green products are formed from recycled components, be manufactured in a more energy-conservative way, or be supplied to the market in more environmental friendly way. Since people are becoming more aware about the concept of environmental consciousness, the usage of traditional or conventional products are getting reduced. Traditional products are those manufactured in the traditional way. They are not being produced keeping environmental considerations in mind. In today's competitive scenario green products are competing with the conventional or regular products (products produced by traditional methods).But, this usage pattern is not applicable to all parts of the society. Knowledge and awareness about the green products play a very vital role in enabling the customers to use them. But, this awareness and knowledge do not exist, thus restricting the usage of the green products. From the last decade onwards, we have started using the green products and it will take time before it penetrates to all parts of the society.

The concept of green products is becoming more popular with the aspect of food items. Since people are becoming more health conscious, they are giving more importance to the consumable products. People started using more green food products to minimize their health risk. But, here also like normal green products knowledge and awareness is not there in all parts of the society. So, these are more being used by the more educated parts of the society. Also, organizations and government are incapable of promoting the concept of "Green". But the best part is, the concept has started and it is penetrating to the society at a very fast pace. If all the factors which contribute to the popularity of green products, such as price of the product, its quality, customer's perception about the products, awareness about them, are being handled carefully by the government and the organizations, then they will become more popular in the society.

As we have been discussing, there are various factors which positively as well as negatively influence the popularity of green food products. In this context, it is important to examine various psychographic factors which influence the usage of green products, specifically in food category of products in Kolkata and around it in West Bengal, India. The various psychographic variables, Environmental Consciousness, Price Sensitivity, Innovativeness in preferring products, Involvement in preferring products and Health Consciousness are selected through a thorough literature review. The non-users' perception about each psychographic variable is being understood. This paper aims to provide a snapshot of non-users behaviour about Green Food Products with respect to various Psychographic variables in Kolkata and districts surrounding it in West Bengal (India).

2. Review of Literature

In this paper, we intend to examine the impact of individual attributes of customers towards marketing of green products. In the Indian context, green products are still consumed by a very small subset of customers and the consumption is largely dependent on individual attributes, i.e. demographic and psychographic characteristics (Harper and Makatouni, 2002; Ahmed and Juhdi, 2010). Impact of these characteristics is more evident for green food product segment (Davies et al, 1985; Lea and Worsley, 2005). In the following section, we summarize the findings by published literature on these issues.

From the existing literature, psychographics is being defined as the study of personality, values, attitudes, interests, and lifestyles (Senise, 2007). This mainly focuses on interests, activities and opinions (IAO) of the customers. Hence psychographic variables can be interpreted as combinations of demographic and psychological variables which impact customer's attitude in an overall manner. It was observed that there is a general perception about organic products catering mainly for higher social classes (Harper and Makatouni, 2002). It is further stated in the same paper that people from those classes have an affordability as well as consciousness regarding organic products, thus resulting in green food and food product consumption. Few authors have also discussed about people's tendency towards safe and healthy organic products intake influencing positively the customers' intention to purchase them(Ahmed and Juhdi, 2010). Also, (Davies et al, 1995; Lea and Worsley 2005) in their paper referred that green consumers prefer preferring organic products for their health concern. So, health is an important factor driving the customers for green food product consumption. Contradictory results are also published in a paper by Pickett-Baker and Ozaki

(Pickett-Baker and Ozaki, 2008), where authors fail to conclude any positive correlation between positive environmental beliefs and propensity of the customers to go for preferring more green products.

Environmental knowledge and attitude play a significant role in customers' tendency for green product purchasing as reported in several papers. Many authors stated that environmental consciousness generates more interest of the customers towards organic products (Schlegelmilch et al, 1996). Kaiser et al (1999) in their paper reported that environmental values and environmental knowledge are important factors which affect ecological behavior intention ultimately helping in building customer's attitude towards organic products. Also Ahmed and Juhdi (2010) referred that customers are positively inclined towards environment friendly farming because of their environmental consciousness and it leads to positive customer intention to buy organic products. Lockie et al , (2002), said that the consumers' familiarity with the green products, generate more interest to consume them. This is common to conventional consumer's behavior. They also stated that the mood of the consumers, i.e., to keep him relax is positively correlated with organic product consumption. The customers believe that consuming organic products make customers stress-free.

Apart from health consciousness and environmental belief, several other psychographic variables are also tested in literature like customers belief towards information authenticity, political motivation, skepticism etc. Kozup et al (2003) said that more proper information from credible sources increase the consumption of organic products because of customers' environmental belief and authenticity of the information provided. Similar observation was reported by Schlegelmilch et al (1996), by inferring that more knowledge, i.e., detail factual information about the organic products improve the chance of customers' preferring them. Also, it was said that the customers' previous experience of using some environmental brands i.e., the brands which produce the products in environment- friendly way have an impact on their chances of selecting those brands only for repeated usage (Pickett-Baker and Ozaki, 2008). In another paper, it is being stated that recycling activities positively influences pro-environmental purchasing behavior for those customers who can dedicate more time and effort (Schlegelmilch et al, 1996). Some papers also stated that politically motivated activities act positively only for those customers who are environmentally conscious. In the paper by Chang (Chang , 2011), it is being discussed that perceived higher price, lower quality and skepticism negatively and perceived emotional benefits acting positively will create more ambivalence attitudes of the customers towards preferring green products.

From the above discussion we conclude that the relationship between environmental consciousness, beliefs and knowledge and green product usage had been studied, but not for green food products. So, we intend to investigate more the role of the above mentioned factors in creating customers attitude towards green food products. Also the effect of information level about the food items in forming green food product consumer behavior is also an interesting research area. No study had taken place to find out the impact of lifestyle, religiosity, social responsibility, risk taking characteristics (Razzaque, 1995) of the customers towards organic product consumption, although these variables are applied in other fields. So, this study can be further extended to find out the effect of the above mentioned variables on building customers behavior towards organic product consumption.

As we have been discussing, there are various factors which positively as well as negatively influence the popularity of green Food products. In this context, it is important to examine various

psychographic factors which influence the usage of green products, specifically in Food sector in Kolkata and around Kolkata in West Bengal, India. The various psychographic variables, such as Environmental Consciousness, Health Consciousness, Price Sensitivity, Product Involvement and Innovation are selected from a thorough literature review. The non-users' perception about each psychographic variable is being understood using specific items. This paper aims to provide a snapshot of non-users' belief about Green Food Products with respect to the Psychographic variables in India (Kolkata).

3. Research Methodology

The study was based on quantitative data on non-users' perception about green Food products. Data was collected both in online and offline format. All the respondents were briefed about the project before they respond.

The questionnaires were distributed to the respondents selected randomly from the different parts of Kolkata, aware about the concept of green food products, but not using them, i.e., non-buyers of green food products. A total of 200 respondents were surveyed for their responses. But finally, rejecting the non-qualified responses, 192 responses were considered for this study.

The questionnaire was formulated from a review of literature based on the following literatures (e.g. Sanchez, 2010; Hofmester-Toth,2010 ; Grewal, 2000).The questionnaire's main objective is to study the impact of the various psychographic variables, such as involvement with the product, respondent's opinion leadership etc. on the respondents' intention not to purchase green food products. The questionnaire is divided into eight parts. The first part is trying to measure the environmental consciousness of the respondents with respect to the scales used in the paper by Sanchez, 2010. The second part is measuring the price sensitivity of the respondent with respect to the scale used in a paper by Goldsmith, 1991. In the third, fourth and the fifth part, the respondent's opinion leadership, innovativeness and involvement in buying green products will be studied based on a paper by Grewal, 2000. In the sixth part, the respondent's health consciousness will be studied based on the concept from the literature by Hong, 1990.In the seventh part, the respondent's reaction to the different characteristics of the green Foods products are studied. The scales are based on the literatures by Ahmad, 2010; Chang2011; Davies, 1995; Bamberg, 2006 and Lea2005. The eighth part is same as the seventh part. The only difference is that the products considered here are green Food products. The scales are based on the literatures by Ahmad,2010;Kozup,2003;Davies,1995;Bamberg, 2006; Lin,2012; Chang,2011 and Lea,2005.All the factors were measured on a seven point scale stating the following things(1 = Very Strongly Disagree, 2 = Strongly Disagree, 3 = Disagree, 4 = Neither Agree Nor Disagree, 5 = Agree, 6 = Strongly Agree, 7 = Very Strongly Agree). The socio-demographic information of the respondents is collected in the ninth part. The collected data for the different parts of the questionnaire is analyzed using Multiple Regression, to prioritize the identified factors. The IBM SPSS (version 19) is used for the purpose.

4. Findings of the study
4.1 Prioritization of the variables with respect for the scale of Environmental Consciousness

In this Section of the present Study, the Criterion Variable is the Non-users perception for Green Food Products for which five predictor variables related to Environmental Consciousness identified and on which the data has been collected are;

V1: Supports different measures to improve water management leading to water conservation
V2: Aware about the issues and problems related to the environment
V3: Willing to pay higher prices for water
V4: Not possible to do anything about the environment
V5: Believes that using recyclable materials for daily use will improve the environment

As stated earlier, the objective of this Section of the Study is to ascertain the factor/s that influences the non-users perception for green Food products in the context of environmental consciousness. The relevant output obtained through SPSS is presented below.

Table 4.1: Prioritization of Environmental Consciousness factors for perception of non users of green food products

		Coefficients				
		Unstandardized Coefficients		Standardized Coefficients		Sig.
Model		B	Std. Error	Beta	T	
1	(Constant)	3.914	.652		6.002	.000
	v1	-.046	.083	-.028	-.558	.577
	v2	.048	.063	.039	.763	.446
	v3	.050	.056	.046	.886	.376
	v4	.048	.060	.040	.797	.426
	v5	-.007	.049	-.008	-.149	.882
a. Dependent Variable: V6						

Source: SPSS Output

The output furnishes the following regression model

V6 = 3.914 – 0.046V1 + .048V2 + 0.050V3 + 0.048V4 - 0.007V5

Where V6 is the Non-users' Preference for Green Food Products

We know that the standardised regression coefficients (Beta) is a measure of how strongly each predictor variable influences the criterion variable and the higher the beta value the greater the impact of the predictor variable on the criterion variable.

The Model reveals that β value for V3 is the highest, i.e., 0.046. It exhibits that the said predictor variable has highest level of impact on the criterion variable. In fact, the variable, i.e., 'willing to pay higher prices for water' has high level of impact on non-users perception for green Food products. Similarly, the β value for V2 is the lowest, i.e., 0.039. It means, the variable – 'Aware about the issues and problems related to the environment.' Has the least impact

On the contrary, the Model reveals that β value for V1 is the highest with negative sign, i.e., -0.028. It indicates that the said predictor variable is having highest level of impact on the criterion variable but in a negative direction. It means, Support different measures to improve water management leading to water conservation has high level of impact on not non-users perception for green Food products, which seems to be bit unusual. In fact, it may be inferred that this variable is not apt for ascertaining non-users' preference for green Food products. Thus, out of the four variables identified, on the basis of degree of influencing positively non-users' preference for the green Food products, the priority list is as follows; V3 , V4 and v2.

4.2 Prioritization of the variables with respect for the scale of Price Sensitivity

In this section of the present study, the Criterion Variable is the non-users perception for Green Food Products for which six predictor variables identified and on which the data has been collected are;

V1: The price of buying Green Food Products is important

V2: A new kind of green Food product is likely to be more expensive than older ones, but that does not matter

V3: People are less willing to buy a green product if they think that it will be high in price

V4: People don't mind paying more to try out a new green Food product

V5: People think that really good Green Food product is worth paying a lot of money

V6: People don't mind spending a lot of money to buy a Green Food product

The objective of this Section of the Study is to ascertain the factor/s that influences the non-users' perception for green Food products in the context of Price Sensitivity. The relevant output obtained through SPSS is presented below.

Table 4.2: Prioritization of Price Sensitivity factors for perception of non users of green food products

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1	(Constant) 4.585	.558		8.220	.000
	v1 .007	.055	.006	.121	.903
	v2 .010	.055	.009	.172	.864
	v3 -.122	.052	-.121	-2.352	.019
	v4 -.035	.051	-.035	-.694	.488
	v5 -.030	.057	-.026	-.518	.605
	v6 .112	.055	.104	2.050	.041
a. Dependent Variable: v7					

Source: SPSS Output

The output furnishes the following regression model

V7 = 4.585 – 0.007V1 + .010V2 - 0.122V3 - 0.035V4 - 0.030V5 + 0.112V6

Where V7 is the Non-users' Perception for Green Food Products

The Model reveals that β value for V6 is the highest, i.e., 0.104. It exhibits that the said predictor variable has highest level of impact on the criterion variable. In fact, the said variable, i.e., 'People don't mind spending a lot of money to buy a Green Food product' has high level of impact on non-users perception for green Food products. Similarly, the β value for V1 is the lowest, i.e., 0.006. It means , the variable – 'The price of buying Green Food Products is important' has less impact on non-users perception for green Food products.

On the contrary, the Model reveals that β value for V3 is the highest with negative sign, i.e., -0.121. It indicates that the said predictor variable is having highest level of impact on the criterion variable but in a negative direction. It means, People are less willing to buy a green product if they think that

it will be high in price' has high level of impact on non-users perception for green Food products. In fact, it may be inferred that this variable is not apt for ascertaining non-users' perception for green Food products. Thus, out of the six variables identified, on the basis of degree of influencing positively non-users' preference for the green Food products, the priority list is as follows; V6, V2 and V1.

4.3 Prioritization of the variables with respect for the scale of Innovativeness for buying products

In this Section of the present Study, the Criterion Variable is the Preference for Green Food Products for which four predictor variables related to Innovativeness in buying products identified and on which the data has been collected are;
V1: People like to take a chance in buying new products
V2: People like to try new and different products
V3: Users of Green Food Products is the first in his circle of friends to buy a new product when it appears in the market
V4: Users of Green Food Products is the first in his circle of friends to experiment with the brands of latest products
As stated earlier, the objective of this Section of the Study is to ascertain the factor/s that influences the consumer's preference for green Food products in the context of environmental consciousness. The relevant output obtained through SPSS is presented below.

Table 4.3: Prioritization of Innovativeness for buying products factors for perception of non users of green food products

		Coefficients				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.180	.394		13.158	.000
	v1	.047	.049	.051	.963	.336
	v2	-.010	.056	-.009	-.179	.858
	v3	-.130	.056	-.117	-2.346	.019
	v4	-.104	.048	-.110	-2.188	.029
a. Dependent Variable: v5						

Source : SPSS Output

The output furnishes the following regression model
V5 = 5.180 – 0.047V1 - .010V2 - 0.130V3 - 0.104V4
Where V5 is the Non-users' perception for Green Food Products

The Model reveals that β value for V1 is the highest, i.e., 0.051. It exhibits that the said predictor variable has highest level of impact on the criterion variable. In fact, the variable, i.e., 'People like to take a chance in buying new products' has high level of impact on preferring green Food products.

On the contrary, the Model reveals that β value for V3 is the highest with negative sign, i.e., -0.117. It indicates that the said predictor variable is having highest level of impact on the criterion variable but in a negative direction. It means, 'Users of Green Food Products is the first in his circle of friends to buy a new product when it appears in the market' has high level of impact on not preferring green Food products, which seems to be bit unusual. In fact, it may be inferred that this variable is not apt for ascertaining non-users' preference for green Food products. Thus, the variable 'Users of Green Food Products like to take a chance in buying new products' influences non-users' preference for the green Food products positively.

4.4 Prioritization of the variables with respect for the scale of Involvement in buying process

In this Section of the present Study, the Criterion Variable is the non-users perception for Green Food Products for which four predictor variables related to Non-users Involvement in Buying Green Food Products are identified and on which the data has been collected are;

V1: People select the green products very carefully
V2: Using branded green products help People express their personality
V3: One can tell a lot about a person from whether they buy Green Food Products
V4: People believe different brands of green products would give different amounts of satisfaction

As stated earlier, the objective of this Section of the Study is to ascertain the factor/s that influences the consumer's preference for green Food products in the context of Non-users Involvement in Buying Green Food Products. The relevant output obtained through SPSS is presented below.

Table 4.4 : Prioritization of Involvement in buying process factors for perception of non users of green food products

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.209	.403		10.450	.000
	v1	.093	.051	.091	1.800	.073
	v2	-.035	.046	-.039	-.757	.449
	v3	.011	.048	.011	.226	.821
	v4	-.046	.052	-.045	-.885	.377
a. Dependent Variable: v5						

Source: SPSS Output

The output furnishes the following regression model

V5 = 4.209 - 0.093V1 + .035V2 + 0.011V3 - 0.046V4

Where V5 is the Non-users' perception for Green Food Products

The Model reveals that β value for V1 is the highest, i.e., 0.091. It exhibits that the said predictor variable has highest level of impact on the criterion variable. In fact, the variable, i.e., 'People select

the green products very carefully' has high level of impact on preferring green Food products. Similarly, the β value for V3 is the lowest, i.e., 0.011. It means, the variable – 'One can tell a lot about a person from whether they buy Green Food Products' has the least level of impact on preferring green Food products.

On the contrary, the Model reveals that β value for V4 is the highest with negative sign, i.e., -0.045. It indicates that the said predictor variable is having highest level of impact on the criterion variable but in a negative direction. It means, 'Using branded green products help people express their personality' has high level of impact on not preferring green Food products. In fact, it may be inferred that this variable is not apt for ascertaining non-users' perception for green Food products. Thus, out of the two variables identified, on the basis of degree of influencing positively non-users' perception for the green Food products, the priority list is as follows; V1 and V3.

4.5 Prioritization of the variables with respect for the scale of Health Consciousness

In this Section of the present Study, the Criterion Variable is the non-users perception for Green Food Products for which five predictor variables related to Health Consciousness are identified and on which the data has been collected are;

V1: People worry that there are chemicals in their food products
V2: People worry that there are chemicals in their Food products

V3: People are concerned about their drinking water quality
V4: People avoid food containing preservatives
V5: People read more health-related articles than I did 3 years ago
V6: People are interested in information about their health
V7: People are concerned about their health all the time
V8: Pollution in Food products does not bother people

As stated earlier, the objective of this Section of the Study is to ascertain the factor/s that influences the consumer's preference for green Food products in the context of Health Consciousness in buying Green Food Products. The relevant output obtained through SPSS is presented below.

Table 4.5: Prioritization of Health Consciousness factors for perception of non users of green food products

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	4.328	.546		7.925	.000
	v1	-.020	.056	-.019	-.368	.713
	v2	.048	.055	.044	.863	.388
	v3	.098	.048	.105	2.039	.042
	v4	-.052	.049	-.055	-1.071	.285
	v5	-.020	.047	-.021	-.417	.677
	v6	-.042	.047	-.045	-.899	.369
	v7	-.043	.046	-.047	-.937	.349
	v8	.044	.052	.042	.846	.398
a. Dependent Variable: v9						

Coefficients

Source: SPSS Output

The output furnishes the following regression model

V9 = 4.328 – 0.020V1 - 0.048V2 + 0.098V3 - 0.052V4 - 0.020V5 - 0.042V6 - 0.043V7 + 0.044V8

Where V9 is the Non-users' Preference for Green Food Products

We know that the standardised regression coefficients (Beta) is a measure of how strongly each predictor variable influences the criterion variable and the higher the beta value the greater the impact of the predictor variable on the criterion variable.

The Model reveals that β value for V3 is the highest, i.e., 0.105. It exhibits that the said predictor variable has highest level of impact on the criterion variable. In fact, the variable, i.e., 'People are concerned about their drinking water quality' has high level of impact on preferring green Food products. Similarly, the β value for V8 is the lowest, i.e., 0.042. It means, the variable – 'Pollution in Food products does not bother people' has less impact on non-users perception green Food products.

On the contrary, the Model reveals that β value for V4 is the highest with negative sign, i.e., -0.055. It indicates that the said predictor variable is having highest level of impact on the criterion variable but in a negative direction. It means, 'People avoid food containing preservatives' has high level of impact on non-users perception for green Food products. In fact, it may be inferred that this variable is not apt for ascertaining non-users' perception for green Food products. Thus, out of the three variables identified, on the basis of degree of influencing positively non-users' perception for the green Food products, the priority list is as follows; V3, V2 and V8.

5. Conclusion

In order to meet the purpose of the study as envisaged in the introduction part of the paper, Multiple Regression is used to know important factors which insist non-users perception for Green Food products.

Concerning the facet – 'impact of Environmental consciousness towards non-users perception for Green Food products', the factor - 'People would be willing to pay higher prices for water' has highest level of impact on non-users perception for green Food products. On the other hand, the factor – 'People are aware about the issues and problems related to the environment' has the least level of impact on non-users perception for green Food products. Relating to relevance of price towards non-users perception for green Food products, factors such as, 'People don't mind spending a lot of money to buy a Green Food product' has highest level of impact on non-users perception for green Food products. The factor – 'The price of buying Green Food Products is important' has least level of impact on non-users perception for green Food products.

In the pretext of studying the innovation of the non-users about buying green Food products, it has been found that 'People like to take a chance in buying new products' has highest level of impact on non-users perception for green Food products. Regarding involvement in buying process while buying green Food products, the factor 'People select the green products very carefully' has highest level of impact on non-users perception for green Food products. Similarly the variable – 'One can tell a lot about a person from whether they buy Green Food Products' has the least level of impact on non-users perception for green Food products.

About health consciousness of the respondents in buying green products, 'People are concerned about their drinking water quality' has highest level of impact on non-users perception for green Food products. Similarly, the factor – 'Pollution in Food products does not bother people' has the least level of impact on non-users perception for green Food products.

Overall, it is found that the respondents know very well the utility of the green food products vis-à-vis their conventional counterparts. However, in-depth study on facet-wise psychographic profile on non-users perception state that some variables as mentioned above from all the studied psychographic variables somewhat influence non users perception for green food products predicting some exceptional result which may be considered for future research.

On the basis of the research findings, it is inferred that, in order to popularize the use of green food products, the producers need to focus on the following two points; a) keep the prices of the green food products in reasonable range to make it affordable to a wider base of consumers and b) study the level of environmental and health consciousness of the target group of the consumers before deciding their marketing strategy c) make the green food products available through retail outlets so that it is accessible for buying.

6. Bibliography

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Finansal Açıdan Hollanda Hastalığı ve Doğal Kaynak Lanetinin Paradoksal Etkileri: Bir Literatür İncelemesi

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Özet

Bu makale, bir ülkede doğal kaynak kapsamında petrol ve doğalgaz rezervlerinin bulunması durumunda bu durumun ülke üzerindeki ekonomik etkilerini bulmayı amaçlamaktadır. Dolayısıyla, Hollanda Hastalığı'nın uzun dönemde ülke ekonomisine olacak muhtemel negatif etkileri hakkında var olan literatürün güçlü bir destek sağlayıp sağlamadığı araştırılmaktadır. Literatür taraması, bir ülkenin önemli miktarda petrol ve doğalgaz yatağı bulması sonucunda büyük ölçekli ihracata başlamasının, ülkenin reel döviz kurunun değer kazanmasına, böylece yurtdışı rekabet gücünün azalmasıyla ülkenin geleneksel ihracat kalemlerinin ve geleneksel olmayan ihracat kalemlerinin daralmasına neden olacağını vurgulamaktadır. Bu sürecin ekonominin yapısal değişimiyle sonuçlanarak, bu yeni yapılanmada işsizliğin artacağı öngörülmektedir. Buna karşın, petrol ve doğalgaz ithalatından elde edilecek tasarrufların kalkınmayı teşvik etmek için kullanılabilecek olumlu bir faktör olduğu kabul edilir. Bu durumda asıl kritik mesele, bir ülkede petrol ve doğalgaz rezervlerinin bulunması durumunda olumlu ile olumsuz etkilerine birlikte bakabilmektedir.

Anahtar Kelimeler: Finans, Hollanda Hastalığı, Doğal Kaynak, Petrol, Doğalgaz

Paradoxical Effects of the Dutch Disease and Natural Resource Curse from the Financial Perspective: A Literature Review

Abstract

This article aims to find the economic effects on a country if the mentioned country has a sudden oil and gas reserves discovery in terms of natural resources. Therefore, it is investigated whether the existing literature on the possible negative effects of the Dutch Disease on the country's economy in the long term provides a strong support. The literature review emphasizes that, the start of large-scale exports as a result of a country's finding a significant amount of oil and gas deposits will cause the country's real exchange rate to gain value, thus reducing its international competitiveness, and the contraction of the country's traditional export items and non-traditional export items. This

process predicts that, unemployment will increase in this new structuring, causing an unemployment rise in the structural change of economy. On the other hand, savings to be gained from oil and gas imports are considered as a positive factor that can be used to encourage economic development. In this situation, the critical issue is to consider both the positive and negative impacts together when oil and gas reserves are discovered in a particular country.

Keywords: Finance, Dutch Disease, Natural Resource, Oil, Natural Gas

I. Giriş

Hollanda Hastalığı, ani doğal kaynak zenginleşmesine kavuşan bir ülkenin mevcut üretim faktörlerinin diğer üretim alanlarından çekilip yeni doğal kaynağa yönelmesi sonucunda ülkenin toplam üretiminin azalmasını ifade eden bir kavramdır. Bu nedenle, Hollanda Hastalığı terimi, bir ülkenin geleneksel ve geleneksel olmayan ürün ihracatında bir düşüşü tanımlamaktadır. Hollanda hastalığı terimi, 1960'larda Hollanda'da yaşanan krizden kaynaklanmaktadır. Hollanda'nın, Kuzey Denizi'ndeki büyük doğalgaz yataklarını keşfetmesi ile başlayan sürece dayandığı söylenebilir. Yeni bulunan bu doğal zenginlik, Hollanda para biriminin (Guilder) yükselmesine, reel döviz kuru düşüşüne ve petrol dışı tüm ürünlerin ihracatında ani inişlere neden olmuştur. Bu süreçte elde edilen bulgular, doğal kaynak keşfinden sağlanan gelirdeki artışın, ülkenin yerel para biriminin değerini yükselterek o ülkenin sanayi ve tarımsal ekonomisini daha az rekabetçi hale getirdiğini göstermektedir. Bu hususun, ekonomide tahribata yol açtığı savunulmuştur. Zira, bir ülkenin yerel para biriminin değerinin yükselmesi, yaptığı ihracatların da fiyatlarını yükselterek bu alandaki rekabetçiliğine zarar vermektedir. Bu nedenle, ani doğal kaynak rezervi bulan ülkelerde uygulanacak iktisadi politikalar belirlenirken Hollanda Hastalığı etkilerinin göz ardı edilmemesi gerekmektedir.

Hollanda Hastalığı olan bir ülkede fiyat rekabet gücünde azalma ve dolayısıyla geleneksel ile geleneksel olmayan ürünlerin ihracatında önemli bir azalma görülebilmektedir. Ayrıca, uzun vadede ithalatta önemli artışlar gözlemlenebilmektedir. Dolayısıyla doğal kaynak temelli olmayan endüstriler, doğal kaynak temelli endüstrilerin yarattığı servetteki artıştan zarar görebilmektedir.

Genelde Hollanda Hastalığı ile karşılaşılan durumlarda kazanç patlaması yaşayan sektör, doğal kaynak keşfedilen sektör iken, üretimi daralan sektörler ise sanayi veya tarım olmaktadır. Zira, Hollanda Hastalığı terimi de ilk kez 1977 yılında The Economist tarafından kullanılmıştır. The Economist, Hollanda Hastalığı terimini Hollanda'nın Groningen şehrinde büyük doğalgaz alanlarının 1959'da keşfedilmesinin ardından Hollanda imalat sektöründeki düşüşü tarif edebilmek için kullanmıştır (The Economist, 1977).

II. Literatür Taraması

Hollanda Hastalığı üzerine geniş bir literatür bulunmaktadır. Literatüre ilk katkı sağlayanlar arasında Corden (1981;1984), Corden ve Neary (1982), Van Wijnbergen (1984), Edwards ve Aoki (1983) ile Haberger (1983) yer almaktadır. Corden (1981), Hollanda Hastalığı olarak bilinen

ticarete konu olan sektördeki daralmanın nedenlerini ortaya koymak için iki sektörlü bir ekonomik model kullanmıştır. Corden (1981), basit bir model kullanarak doğal kaynak keşfinin büyük sermaye akımlarını nasıl tetiklediğini (örneğin doğal kaynak sektöründeki yatırımları finanse etmek için) göstermiştir. Bu durumun ilk etkisi, ulusal paranın değer kazanması olarak kendini göstermiştir. Hollanda Hastalığı ile ilgili literatürün büyük bir kısmı, yüksek oranda döviz girişlerinin reel kur üzerindeki etkileri ile üretim faktörlerinin ticarete konu olan ve olmayan sektörler arasında yeniden dağılımına odaklanmaktadır. Hollanda Hastalığı'ndan kaynaklanan olumsuz etkilerin döviz girişlerinden kaynaklanan olumlu etkileri dengeleyip dengeleyemediği de literatürde analiz edilmektedir. İhracata dayalı büyüme literatürü ve geleneksel Hollanda Hastalığı literatürü adeta birbiriyle bağlantılıdır (Bal, ve Akça, 2015).

Hollanda Hastalığı ile ilgili literatürde Sachs ve Warner (1995), Atkinson ve Hamilton (2003), Moene, Mehlum ve Torvik (2006), Ogun (1998), Ouattara (2003), Rautava (2004), Anoruo ve Elike (2009), Berument, Ceylan ve Doğan (2010), Özsağır, Erkan, Şentürk ve Kara (2011), Ghalayani (2011), Emami ve Adibpour (2012), Aali ve Başar (2012), Mercan ve Göçer (2014), Looney (1990), Egert (2005), Oomes ve Kalcheva (2007), Egert ve Leonard (2007), Lartey (2008), Gronwald, Mayr ve Orazbayev (2009), Lama ve Medina (2010), Javaid (2011), Oyesanmi (2011), Arı ve Özcan (2012), Yardımcıoğlu ve Gülmez (2013), Jayaraman ve Lau (2011), Algieri (2011), Bouzid (2012), Egert (2013), Mukhtarov ve Bostan (2017), Özdemir, Riyazi, Buzdağlı ve Emsen (2018), Yürük ve Uzunoğlu (2008) çalışmaları da önemli bir yere sahiptir.

Bunların yanında, literatürde Hollanda Hastalığı ile ilgili olarak doğal kaynakların ani keşfi ile yaşanacak ve tecrübe edilecek patlamadan söz edilmektedir. Bu noktada patlama, doğal kaynakların keşfedildiği ülkede gerçekleşen hızlı döviz girişlerini, gelirleri ve fonları ifade etmektedir. Petrol ve doğalgaz gibi doğal kaynakların keşfinin etkilerinin istihdam ve gelir açısından oldukça belirgin olduğu vurgulanmaktadır (Bal, H , Akça, E., 2015).

Basit ticaret teorisine göre, bir ülke sahip olduğu endüstriyel faaliyetlerde uzmanlaşmalıdır. Bu nedenle teorik olarak doğal kaynaklar açısından zengin bir ülke, doğal kaynakların çıkarılmasına odaklanacaktır. Karşılaştırmalı üstünlükler teorisi, iktisat biliminde bir grubun bir malı göreceli olarak daha az maliyetle üretebildiği bir durumda ticaretin, ticaret yapan iki taraf için de nasıl faydalı olacağını anlatmaktadır. Burada önemli olan üretimdeki mutlak maliyetler değil, fırsat maliyetidir. Bu nedenle, petrol ve doğalgaz gibi doğal kaynakları zengin olan ülkelerin Hollanda Hastalığı ile boğuşma olasılıkları daha yüksektir. Literatürde yer aldığı üzere, Hollanda Hastalığı'nın üç bileşeni ise Kaynak-Hareket Etkisi, Harcama Etkisi ve Döviz Kuru Değerleme etkisidir.

III. Kaynak-Hareket Etkisi, Harcama Etkisi ve Döviz Kuru Değerleme Etkisi

Doğal kaynaklarda yaşanacak bu patlama, petrol ve doğalgaz gibi sektörlerdeki işçi ücretlerini arttıracak ve bir emek hareketini tetikleyecektir. Ticaretin fiyatı Dünya piyasalarında dışsal olarak belirlenir. Ticareti yapılmayan malların fiyatlarındaki artış ise, reel döviz kurunun değer kazanımına eşdeğerdir. Bu emek hareketi, doğrudan sanayisizleşme (de-industrilization) veya tarımdan arınma

olarak adlandırılır. Ayrıca, ekonomideki yapısal değişimle bağlantılı olarak işsiz kalanlar doğal kaynak hareketi etkisinin sonucu yeniden eğitilmeli veya kendilerine yeni beceriler kazandırılmalıdır. Hiç şüphesiz, üniversitelerin bu alandaki mücadelede önemli bir role sahip olmaları beklenir.

Doğal kaynak patlamasının etkisi ile artan gelirin sonucu olarak mal ve hizmetlere olan talep yükselmektedir. Petrol ve doğalgaz gibi doğal kaynaklardan elde edilen gelirlerinin artması nedeniyle yurtiçi gelirlerin yükselmesi harcama etkisine neden olmaktadır. Harcama etkisi hem ticareti yapılan, hem de ticareti yapılmayan mallar için artan harcamalara yol açarak ticaret dışı mal sektöründe işgücü talebini yükseltir. Aynı zamanda, emeği ticari mal sektöründen uzaklaştırmaktadır. Bu emek hareketine dolaylı sanayisizleşme denilmektedir. Dolayısıyla, ticareti olmayan mallara olan talebin artmasıyla bu malların fiyatları yükselecektir. Ancak, ticareti yapılan malların fiyatları uluslararası piyasalarda belirlendiği için küçük ülke varsayımının ticareti yapılan mallar üzerinde hiçbir etkisi olmadığı göz önüne alınmalıdır. Harcama etkisi, bu sektörün genişlemesi anlamına gelir. Fakat, doğal kaynak hareket etkisi bir daralmayı ifade etmektedir. Harcama etkisinin gücü, tüketme eğilimine bağlıdır. Petrol ve doğalgaz gibi doğal kaynaklara sahip ülkeler, bahse konu olan doğal kaynak gelirlerinin daha fazlasını inşaat ve kamu hizmetleri için harcama eğilimindedir (Stijns, 2003). Dolayısıyla, ticareti yapılmayan malları tüketme marjinal eğilimi yüksek olacaktır. Doğal kaynak hareketi etkisinin gücü, faktör yoğunluğuna bağlıdır. Gelişen doğal kaynak sektörü sermaye yoğun bir sektörse, çoğu zaman olduğu gibi az gelişmiş ülkelerde ve daha sanayileşmiş ülkelerde harcama etkisi doğal kaynak hareketi etkisine neden olacaktır.

Ancak, ticareti yapılmayan malların fiyatları iç piyasada belirlenir. Bunun yanında, gelir ve harcamalardaki artıştan dolayı ticareti olmayan malların daha yüksek nispi fiyatlara sahip olması, ticaret dışı mallar sektörünün nispi karlılığını arttırmak ve ticareti yapılan mallar sektörünün daralmasına olmaktadır. Normal şartlar altında petrol ve doğalgaz gelirlerindeki artış ülkenin hükümetine tahakkuk ederse, harcamaları genellikle hükümet başlatmaktadır.

Doğal kaynak patlamasından dolayı elde edilen büyük gelir artışları, artan talepten kaynaklanan reel döviz kuru artışı ve ticareti yapılmayan malların daha yüksek nispi fiyatları ile sonuçlanacaktır. Ek olarak, patlamanın neden olduğu yurt içi fiyat seviyesindeki artış, ticarete konu mal üreticilerinin daha yüksek üretim maliyetleri ile karşılaşması sonucu, üretim çıktılarını azaltmalarına neden olacaktır. Karları düştüğü için ihracat üreticileri daha az üretecek, gelirler ve istihdam azalacaktır (Ezeala-Harrison, 1993).

Doğal kaynak patlaması ise, döviz kurunu güçlendirerek ve ihraç fiyatlarını arttırarak ihracat konusunda problemlere neden olacaktır. Hollanda Hastalığı'nın bileşenlerini aşağıdaki şekilde ifade etmek mümkündür: (Kwaku ve Baah-Kumi, 2011)

1. Yolsuzluk ve beceriksizlik

2. Politika seçimlerindeki yanlış yönlendirilmiş öncelikler

3. Yoksulluğun kısır döngüsünü kırmada genel yetersizlik

Harcamanın net etkisi, doğal kaynak hareketini etkilediğinde ve kalan bileşenler bir arada düşünüldüğünde ise aşağıda listelenen hususlar söz konusu olmaktadır: (Kwaku ve Baah-Kumi, 2011)

1. Reel döviz kurunda düşüş (Yerel para biriminin aşırı değerlenmesi)
2. Alım satım dışı üretimde artış
3. Geleneksel ve geleneksel olmayan sektördeki üretimin azalması
4. Geleneksel ve geleneksel olmayan ihracatta düşüş
5. Enflasyonda artış
6. İşsizlikte artış

Yukarıda listelenen hususlar değerlendirildiğinde, Hollanda Hastalığı'nın ekonomik etkileri de şu şekilde özetlenebilir: (Kwaku ve Baah-Kumi, 2011)

(-)Geleneksel / Geleneksel olmayan ürünlerin imalat ve ihracatında azalma

(+)Petrol ve doğalgaz ihracatında artış

(+)Döviz girişlerinde artış

(+)Devlet gelirlerinde artış

(-)Enflasyon

(-)Reel döviz kurunun değer kazanması

(-)Yapısal değişim ve yeni bir lider sektör

(-)Yapısal işsizlik ve artan işsizlik

(-)Artan ithalat

(-)Yolsuzluk ve rant arama faaliyetleri

(-)Düşük ekonomik büyüme

Dolayısıyla, Hollanda Hastalığı ile ilgili ilk olarak, harcama etkisini yavaşlatma ihtiyacı vardır. Bir başka ifadeyle, ani zenginleşme kaynağına ve doğal kaynak keşfine sahne olan bir ülkede, ülkeye aniden ve hızlı bir şekilde döviz, gelir ve fon girişi gerçekleştirmek yerine bunun yavaş ve kademeli bir halde gerçekleştirilmesi idealdir. Bu stratejinin bir başka faydası, ülkenin yıldan yıla ne kadar gelir elde edeceğini bilmemek yerine ülkeye yavaş yavaş giren gelirin, istikrarlı bir gelir akışı sağlayabilmesidir. Böylece, ani zenginleşme kaynağına ve doğal kaynak keşfine sahne olan ülke gelecek yıllar için döviz, gelir ve fon girişi hususlarında önünü görebilecektir.

Bunların yanında, gelişmekte olan bir ülkede hükümete harcama yapmak için baskı yapma eğilimi vardır. Yoksulluğu azaltmak için gelirleri derhal arttırmak gerekir ki, bu yaklaşımın ciddi makroekonomik etkileri olacaktır. Bu nedenle, bahse konu olan strateji ekonomik olarak tavsiye edilmemektedir.

IV. Sonuç ve Öneriler

Hollanda Hastalığı hususunda uygulanacak politikada temel hedef, doğal kaynak sektöründeki canlanmayı ve bunun getirdiği riskleri başarılı bir şekilde yönetmek olmalıdır. Bu kapsamda doğal kaynak sektöründeki canlanmanın sebep olabileceği istenmeyen durumlarla mücadele ederken, aynı zamanda söz konusu canlanmanın yarattığı avantajları da iyi değerlendirmek gerekmektedir. Hollanda Hastalığı'nın neden olduğu olumsuz etkilerin sermaye akımlarının yarattığı olumlu etkileri dengeleyip dengelemediği araştırılmalıdır.

Aynı zamanda, doğal kaynak lanetinin yıkıcı etkilerini önlemek için petrol ve doğalgaz endüstrisi yerel içeriğe sahip olmalıdır. Doğal kaynak sahibi ülke, petrol ve doğalgaz sektörünün işletilmesi ve yönetiminde söz sahibi olmalıdır. Petrol ve doğalgaz faaliyetlerine rehberlik edecek yasal bir çerçeve de oluşturulmalıdır. Ulusal yasalar gibi doğal kaynaklarla ilgili yasalar da sağlam bir temele oturtulmalı ve belirli periyotlarda güncellenmelidir. Doğal kaynakları planlamak ve yönetmek için temsili ulusal organlar da kurulmalıdır.

Son olarak, ani zenginleşme kaynağına ve doğal kaynak keşfine sahne olan ülkede ekonomik çeşitliliğin teşvik edilmesi büyük önem arz etmektedir. Dahası, milli bir politika uygulaması kapsamında ülke hükümetleri doğrudan çiftçilerin veya üreticilerin kalkınmasını sağlayacak şekilde geleneksel ihracat sektörünü sübvanse etmelidir. Hiç şüphesiz, Hollanda Hastalığı doğru hamleler ve stratejiler ile kontrol altına alınarak negatif etkilerinden arındırılabilir.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Nigerian Capital Market: A Benefactor to Economic Growth

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Abstract

Capital markets are salient in every economy for the role they play toward economic growth and general well-being of countries around the globe. Countries with well-functioning capital markets are considered economically sound and healthy. The Nigerian capital market, which is regulated by the Securities and Exchange Commission (SEC) is primarily a market for long-term investments where corporate equities and long-term debt securities are issued or traded. The study attempts to examine the impact of this market on economic growth in Nigeria. The study is descriptive, and data used covered the period from 2008 to 2018. We run a multiple regression, and the results show that Market Capitalisation (MC) and Capital Market Efficiency (CME) have a positive impact on Economic Growth (EC). On the other hand, Capital Market Liquidity (CPL) has a negative relationship with economic growth. Thus, the study recommends, among other things that, the government should design or develop a deliberate policy aimed at increasing investible funds and grant incentives for wealth creation.

Keywords: Capital Market, Market Capitalisation, Capital Market Efficiency, Capital Market Liquidity

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

The effect of infrastructure investments on tourism performance in Algeria

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Abstract
This paper aims to examine whether the public investments in infrastructure affect tourism performance in Algeria, during the period 1997-2017. The study was based on the Co-integration Test, Causality Test, and Error Correction Model. The results suggested a weak positive effect of infrastructure investments on tourism performance in Algeria during the period of study. This result can be explained by the low economic performance of tourism in Algeria, due to the absence of a clear tourism strategy, and the low touristic investments, especially in the private sector, and the weak links between the tourism sector and other economic sectors, and the absence of sectoral development strategies.

Keywords: Economic diversification, Sustainable economic development, Tourism performance, Infrastructure investments, Algeria

INTRODUCTION

Background

Economic diversification is an important strategy to fulfill sustainable economic development, due to the integration existed between various economic sectors, and the difficulty to achieve comprehensive and sustainable economic development through a specific sector. The over-relying on one sector leads to several economic imbalances at the national level and negatively affects the macroeconomic equilibrium, as is the case in the oil developing countries.

In the light of this economic reality, the touristic industry is considered as an important area of economic diversification, due to the nature of tourism activity that relates to several sectors, such as agriculture, manufacturing, services, transportation and communications, hostelry, sports, health, and culture... etc. Therefore, investments in the tourism sector will contribute to the activation of many related sectors whether directly or indirectly, or sectors involved in generating the tourism value chain. However, the development of tourism sector requires, in the beginning, developing the infrastructure that allows improving the country's competitiveness, in order to increase the contribution of this sector in the economy, make it a major source of diversification, and ensure the sustainability of economic development.

The relationship between the tourism industry and economic development was the subject of many studies that can be included within three perspectives:

- International Trade Theory: this theory focused on the comparative relative advantage, and factors that constitute a comparative advantage in the tourism production function, and allow the interpretation of the international tourism movement. Moreover, the literature suggested that tourism specialization enhances growth when the substitution elasticity between the two goods (tourism, industry) is less than one.

- Keynesian Multiplier Theory: tourism can be seen as an exogenous component of aggregate demand that positively affects the growth, where under the deflation, the increase of demand motivates the supply, and hence, the employment and the income. This analysis has been shown as static and cannot be used to infer the long-term impact of tourism (Figini and Vici, 2010).

- Endogenous Growth Theory: is extensively used in the literature, it suggested that the high technology sectors are the leader of growth in the long-term. This does not exclude the role of the tourism industry, as economic growth can be generated from exports, and not only through labor and capital. However, the question is whether the tourism leads the growth (Tourism-Led Economic Growth Hypothesis), economic growth motivates the growth of the tourism industry (Reverse Causality Hypothesis) (Ridderstaat et al., 2013), or the existence of a two-way effect between economic growth and tourism (Reciprocal Causality Hypothesis).

Literature review

The Algerian economy has widely relied on oil revenues, which are redistributed as government current or investment spending. For that, Algeria has a rentier economy, as the contribution of the oil sector reached 45% of GDP, 97% of hard currency revenues, and 55% of tax revenues (KPMG, 2012). This situation has made economic and social development strategies and various economic recovery plans at the mercy of changes in oil prices. According to Bellama (2018), the Algerian GDP is mainly depended on the oil sector, which is contributed more than half on average, although this contribution has known many fluctuations, as its trend was increasing until 2008 and reached 54%, while that trend became decreasing after 2008 and reached 25% in 2015, due to the fall of oil prices.

Algeria has tried to diversify its economy through the promotion of other sectors, especially the tourism industry, but the results achieved until 2017 in this context are insufficient, which confirmed by the Travel and Tourism Competitiveness Index that published by the World Economic Forum since 2007, where Algeria takes the 118th rank among 136 countries in 2017 (World Economic Forum, 2017). This can be explained by the deficiency of several areas related to the tourism industry, where Algeria takes the 110th rank in terms of the business environment, 112th rank in terms of human resources and labor market, 131st rank in terms of prioritization of travel and tourism, 124th rank in terms of natural resources, 131st rank in terms of tourist service structures, 105th rank in terms of ground and port infrastructure, 100th rank in terms of air transport infrastructure, 106th rank in terms of environmental sustainability, and 134th rank in terms of international openness (World Economic Forum, 2019).

The no competitiveness of the tourism industry in Algeria was reflected in its outputs. According to the World Tourism Organization (2020), the number of international tourist arrivals did not exceed 2.54 million in 2017, and the revenues from the tourism sector did not exceed 308 million US

dollars, which represents an average of 180 US dollars per tourist, and finally, the tourism and travel industry contributes only 3.5% to the GDP and only 3% to employment.

Messdouy (2009) analyzed the role of small and medium-sized hotels in the promotion and growth of the tourism sector in Boumerdes during the period 2003-2008, depending on the descriptive approach, the analytical method, and the case study method. The study included a sample of touristic hotels, and based on data obtained from the Tourism Services of State, Ministry of Small and Medium-sized Enterprises, Ministry of Tourism, and National Tourism Board. The results were indicated a weak contribution of small and medium-sized hotels in the promotion and growth of the tourism sector, due to their nature (capital, size, culture), and their low rating.

Hamidatou and Hamidatou (2015) explored the impact of the tourism industry on economic growth in Algeria, through testing the impact of tourism revenues and GDP for one year lag period on GDP, and testing the impact of tourism revenues, net trade balance, and total investments on economic growth, during the period 1997-2013. The results indicated an important positive effect of tourism revenues and GDP for one year lag period on GDP, and medium positive effects of net trade balance and total investments on economic growth. However, the effect of tourism revenues on economic growth was weak, due to the high dependence of the Algerian economy on the oil industry.

Benzarour and Satour (2016) examined the relationship between economic growth and touristic development in Algeria, through investigating the long-term relationship between GDP and the number of international tourist arrivals, international tourism receipts, and gross touristic production). The study included annual data during the period 1995-2014, depending on the Unit Root Test, Co-integration Test, and Causality Test «Engel-Granger». According to the results, tourism drives economic growth, where a one-way causal relationship between the two variables has been found, suggesting that the number of international tourist arrivals caused economic growth.

Bouraoui (2017) attempted to analyze the comparative impact of foreign investments on the development of the tourism sector in the Maghreb countries. According to the results, a positive effect of foreign investments on the development of the tourism sector has been found in Tunisia and Morocco. However, no effect has been found in Algeria, due to its inability to attract sufficient and appropriate foreign investments when compared with Tunisia and Morocco. The study showed a positive effect of tourism on economic growth in the Maghreb countries, while the effect of tourism in Algeria was the lowest.

Harrats and Ramdani (2018) examined the causal relationship between touristic investment and tourism growth (touristic GDP) in Algeria, during the period 1983-2016, using Toda and Yamamoto (1995) causality testing method. The study found a one-way causality from touristic investment to touristic GDP, which means that tourism growth affects touristic investment and the role of tourism growth in increasing the revenues from tourism.

The study hypothesis

This study aims to analyze the causal relationship between infrastructure investments and the tourism performance in Algeria during the period 1997-2017. For that, we supposed that:

infrastructure investments have a positive effect on tourism performance in Algeria during the period 1997-2017.

MATERIALS AND METHODS

After determining the model of study and measuring its variables, we used some adequate materials to examine and interpret the relationship between the two variables. Starting from the Unit Root Test for the time series of variables, through the Augmented Dicky-Fuller Test (ADF), then we employed the Co-integration Test, through testing the stationarity of the standard residuals obtained from the model estimation in the long term, after that, the causality has been tested using the Lagrange Test. These various statistical tests have been applied based on the ninth edition of Eviews.

The model of study

The study relied on the statistical test of an equation that takes the form of Simple Linear Regression, and relates the infrastructure investments on tourism performance:

$$TOUR_t = \alpha + \beta * INFR_t + \varepsilon_t \qquad (1)$$

Where:

$TOUR_t$: is the tourism performance, measured as the ratios of international tourism receipts to GDP, expressed with the current US dollar.

$INFR_t$: is the infrastructure investments, measured as the annual growth in the public works sector's GDP, expressed with the current US dollar.

α: is a constant.

β: is the regression coefficient of the independent variable (infrastructure investments).

ε_t: is the error terms.

Data collection

Table (1) shows the data related to the variables, where the values of tourism performance index ($TOUR_t$) have been calculated using the annual data of international tourism receipts and GDP, valued in current US dollars, which provided by the World Bank database. However, the values of infrastructure investments ($INFR_t$) were obtained directly from the annexes of statistics provided by the Bank of Algeria's annual reports, which are available in the second table entitled "Sectoral distribution of GDP at current prices".

Table 1. Data related to the variables of study (%).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOUR$_t$	0,06	0,15	0,16	0,19	0,18	0,20	0,17	0,21	0,46	0,34	0,25	0,28	0,26	0,20	0,15	0,14	0,16	0,15	0,21	0,15	0,10
INFR$_t$	2,50	2,40	1,40	5,10	2,80	8,00	5,50	8,00	7,10	11,60	9,80	9,80	8,70	8,90	5,20	8,20	6,80	6,80	4,70	5,00	4,40

RESULTS

Unit Root Test

Starting from Table (2), which summarizes the results of the Augmented Dicky-Fuller Test, it appears that the dependent variable: tourism performance (TOUR$_t$), and independent variable: infrastructure investments (INFR$_t$) were not stationary at the level I(o), so they include a Unit Root, for the reason that their statistic values were less than the critical values at all levels of significance and in the three cases. However, the two variables were stationary at the first difference, as their statistic values were more than the critical values, which means that they are integrated at the first degree I(d).

Table 2. Unit Root Test for the variables using the Augmented Dicky-Fuller (ADF).

Variables	Level			First difference		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
TOUR	-0.441498	-2.181207	-2.106404	-4.110223	-3.956063	-4.181499
INFR	-0.271129	-2.389638	-0.649271	-9.263183	-9.060380	-10.55015
Critical values	**Level**			**First difference**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
1%	-2.685718	-3.808546	-4.498307	-2.692358	-3.831511	-4.532598
5%	-1.959071	-3.020686	-3.658446	-1.960171	-3.029970	-3.673616
10%	-1.607456	-2.650413	-3.268973	-1.607051	-2.655194	-3.277364

Model estimation in the long term

In order to conduct a Co-integration Test between the two variables: infrastructure investments and tourism performance, we estimated equation (1) in the long term to determine the standard residuals, and then we tested whether they are stationary at the level I(o), and thus the existence of co-integration, and vice versa. Table (3) summarizes the results of Equation (1) estimation in the long term, indicating that Equation (1) is statistically significant at the 1% level of significance, where the value of F-statistic reached 19.236 and it was much greater than the F from the table. The significance level reached 0.0003 and did not exceed 1%, and the determination coefficient was important and reached 50.31%.

Table 3. Equation (1) estimation results in the long term.

Dependent Variable: TOUR				
Method: Least Squares				
Date: 05/25/19 Time: 17:35				
Sample: 1997 2017				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.083121	0.026731	3.109571	0.0058
INFR	0.017064	0.003891	4.385922	0.0003
R-squared	0.503090	Mean dependent var		0.190952
Adjusted R-squared	0.476937	S.D. dependent var		0.066476
S.E. of regression	0.048077	Akaike info criterion		-3.141615
Sum squared resid	0.043917	Schwarz criterion		-3.042136
Log likelihood	34.98695	Hannan-Quinn criter.		-3.120025
F-statistic	19.23631	Durbin-Watson stat		1.257687
Prob(F-statistic)	0.000318			

Co-integration Test

From Table (4) we note that the standard residuals obtained from the estimation of Equation (1) are stationary at the level I(o), as the statistic value was more than the critical values in all cases. Therefore, a co-integration has existed between the dependent variable (infrastructure investments) and the dependent variable (tourism performance).

Table 4. Co-integration Test for the Equation (1)'s residuals using the Augmented Dicky-Fuller (ADF).

	Level		
	(1)	**(2)**	**(3)**
Equation (1)	-3.215395	-3.143728	-3.967605
Critical values	Level		
	(1)	**(2)**	**(3)**
1%	-2.685718	-3.808546	-4.498307
5%	-1.959071	-3.020686	-3.658446
10%	-1.607456	-2.650413	-3.268973

Causality Test

Table (5) summarizes the results of the Engel-Granger Causality Test between the two variables, which indicates that the Engel-Granger Test from tourism performance towards infrastructure investments is not significant, while the Engel-Granger Test from infrastructure investments towards tourism performance was significant at 10%, and consequently, infrastructure investments affect tourism performance in Algeria.

Table 5. Causality Test results using Engel-Granger.

Pairwise Granger Causality Tests
Date: 05/25/19   Time: 18:34
Sample: 1997 2017
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DINFR does not Granger Cause DTOUR	15	4.70468	0.0793
DTOUR does not Granger Cause DINFR		1.56968	0.3415

Error Correction Model estimation

After estimating the Error Correction Model as shown in Table (6), it appears that the regression was significant at 5% level, and meets all the validity conditions. The results in the table suggest that an increase of 10% in infrastructure investments leads to an increase of 0.11% in tourism performance (tourism revenues), which indicates a weak effect of infrastructure investments on tourism performance as confirmed by the determination coefficient that reached 29.83%.

Table 6. Error Correction Model estimation for Equation (1).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002542	0.009777	0.259981	0.7980
DINFR	0.010993	0.004617	2.381199	0.0292
E(-1)	-0.545069	0.245806	-2.217477	0.0405
R-squared	0.298289	Mean dependent var		0.002000
Adjusted R-squared	0.215734	S.D. dependent var		0.049268
S.E. of regression	0.043631	Akaike info criterion		-3.288597
Sum squared resid	0.032363	Schwarz criterion		-3.139237
Log likelihood	35.88597	Hannan-Quinn criter.		-3.259440
F-statistic	3.613242	Durbin-Watson stat		1.313875
Prob(F-statistic)	0.049243			

DISCUSSION

The results confirm our hypothesis that infrastructure investments affect positively the tourism performance in Algeria during the period 1997-2017, while that effect was weak. These results confirm the results of Messdouy (2009) who indicated a weak contribution of small and medium-sized hotels in the promotion and growth of the tourism sector, and the results of Benzarour and Satour (2016) who found that tourism drives economic growth, and the results of Bouraoui (2017) who showed that the effect of tourism on economic growth in Algeria was the lowest when compared with the Maghreb countries. However, our results differ from Harats and Ramdani (2018), who found a one-way causality from touristic investment to touristic GDP. These results are caused by the absence of touristic infrastructure in Algeria, insufficient touristic investments and public spending, weak private investments in the tourism industry, absence of a clear tourism strategy, and the political and security conditions that known Algeria during the 1990s.

CONCLUSION

The integration between different economic sectors is necessary in order to achieve economic diversification, which represents an effective strategy for achieving comprehensive and sustainable economic development. Therefore, the interest in the tourism industry is a key factor of economic diversification strategy success, through creating mutual links between this sector and the traditional sectors of economic development, in order to enable the tourism sector to support growth in those sectors, or benefits from the infrastructure, features, and factors provided by these sectors to support the competitiveness of the tourist industry. For that, this study attempted to analyze the causal relationship between infrastructure investments and tourism performance in Algeria.

The study included the period 1997-2017, based on the Unit Root Test, the Co-integration Test, the Causality Test, and Error Correction Model. The results showed a weak positive effect of infrastructure investments on tourism performance. These results confirm the results of previous studies that suggested no causal relationship between tourism and economic growth, or that suggested a weak relationship between them.

The results of this study can be explained by the low performance of the tourism industry in Algeria, due to the absence of a clear tourism strategy and the weak of touristic investments, especially in the private sector, in addition to the weak links that are existed between the tourism industry and other economic sectors, and the absence of integration between sectoral development strategies. Consequently, we recommend the necessity to give more attention to the integration between the development strategies of various sectors, with special attention to the tourism sector, in order to diversify the national economy and achieve comprehensive and sustainable development.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

EVALUATION OF GASTRONOMY TOURISM AS AN ALTERNATIVE TOURISM PRODUCT: AN APPLICATION FOR BUSINESSES IN MARDIN

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Abstract

Gastronomy tourism plays an important role in the promotion of the country as well as the tourism income. It provides great increases in tourism revenues of the countries that give importance to gastronomy tourism. Gastronomy, historical and cultural values can be combined to enhance the popularity and attraction of tourist centers. In this study, it is tried to investigate how Mardin cuisine is evaluated within the framework of gastronomic tourism with the businesses (restaurants) operating in Mardin. Semi-structured interviews have been performed with companies within the context of the study. At the same time, observation of these enterprises, document analysis of the menus of the businesses was made. The data collected were analyzed discussed using the descriptive analysis method. The aim of this research is to determine whether or not Mardin's gastronomic culture is a touristic commodity. It is thought that advertising activities should be given importance for the development of Mardin gastronomy tourism. In addition, trainings such as Mardin cuisine culture and history should be organized and awareness raising should be organized.

Keywords: Gastronomy, Tourism, Gastronomy Tourism, Mardin.

GASTRONOMİ TURİZMİNİN ALTERNATİF TURİZM ÜRÜNÜ OLARAK DEĞERLENDİRİLMESİ: MARDİN İLİNDE BULUNAN İŞLETMELERE YÖNELİK BİR UYGULAMA

Özet

Gastronomi turizmi ülkenin tanıtılması kadar turizm geliri elde etmek için de önemli bir görev üstlenir. Gastronomi turizmine önem veren ülkelerin turizm gelirlerinde büyük artışlar sağlamaktadır. Gastronomi, tarihi ve kültürel değerler bir araya getirilerek turizm merkezlerinin cazibesini ve çekiciliğini arttırmayla mümkündür.

Bu çalışmada, Mardin mutfağının gastronomi turizmi çerçevesinde nasıl değerlendirildiğini Mardin'de faaliyet gösteren işletmelerle (restoranlar) araştırılmaya çalışılmıştır. Araştırma kapsamındaki işletmelerle yarı yapılandırılmış görüşme gerçekleşmiştir. Bu işletmelerde aynı zamanda gözlem yapılarak, işletmelere ait menülerin doküman analizi yapılmıştır. Elde edilen veriler betimsel analiz yöntemi ile değerlendirilmiş ve tartışılmıştır. Bu araştırmanın amacı, Mardin gastronomi kültürünün turistik ürün olup olmadığını tespit etmektir. Mardin gastronomi turizminin

gelişmesi için reklam faaliyetlerine önem verilmesi gerektiği düşünülmektedir. Ayrıca, Mardin mutfak kültürünün ne olduğu, tarihi gibi eğitimler düzenlenmeli, bilinç farkındalığı oluşturulmaktır.

Anahtar Kelimeler: Gastronomi, Turizm, Gastronomi Turizmi, Mardin

IN-SERVICE TRAINING IN HOTEL BUSINESS ROLE IN SERVICE QUALITY

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Abstract

The Tourism Industry is one of the fastest sector of the world economy. This industry is highly labor

intensive. The training levels of employees are critical to the success of Tourism establishment. Education is one of the tools for employees to acquire the knowledge and skills. In-service training is

the program that help workers to comply with the diffrences, their new jobs and their work environments. Determined training Methods will have a positive impact on the quality of work and the

establishment's competitive power. Hotel establishments have to measure the quality of service they

provide in order to determine their quality level and to provide their service according to the customers' constantly changing demands and expectations. The benefits of thein service training program, which is applied to maximize the skills and skills of the personnel in tourism enterprises, are quite high. It is stated that the effectiveness of in-service training contributes to the development of team spirit in enterprises in the job satisfaction of employees. The business benefits of these training programsa are also mentioned. It was mentioned which one/which of the methods used in in-service training is efficient for employees.

Keywords: In- Service Training, Employees, Service quality

OTEL İŞLETMELERİNDE HİZMET-İÇİ EĞİTİMİN HİZMET KALİTESİNDEKİ ROLÜ
Özet

Abstract

Turizm endüstrisi dünya ekonomisinin en hızlı gelişen endüstrilerden biridir. Bu endüstri emek yoğun özelliği taşımaktadır. İşletmenin başarılı olması için işgörenlerin eğitim düzeyini yüksek tutmakla sağlanmaktadır. Eğitim, işgörenlerin bilgi ve becerilerini sağlayan araçlardandır. Hizmet içi eğitim işgörenlerin farklılıklara, yeni işlerine, çalışma alanlarına uyum sağlamaları için verilen eğitim programıdır. Belirlenen eğitim yöntemleri çalışanların hizmet kalitesini ve işletmenin rekabet gücünü olumlu açıdan etkileyecektir. Otel işletmeleri, hem kalite düzeylerini belirlemek hem de sürekli değişen tüketici istek ve beklentilerine cevap verebilmek için, sundukları hizmetin kalitesini ölçmek durumundadır. Turizm işletmelerinde personelin yetenek ve becerilerini en üst seviyeye çıkarmak amacıyla uygulanan hizmet içi eğitim programının çalışana sağladığı faydalar oldukça fazladır. Çalışanların iş tatmininde hizmet içi eğitimin etkinliği sayesinde işletmelerde

takım ruhunun gelişmesine katkı sağladığı belirtilmiştir. Aynı zamanda bu eğitim programlarının işletmeye yararlarından da bahsedilmiştir. Hizmet içi eğitimde kullanılan yöntemlerden hangisi/ hangilerinin çalışanlarda verimli olduğu konusuna değinilmiştir.

Anahtar Kelimeler: Hizmet içi eğitim, İşgören, Hizmet kalitesi

A GENERAL EVALUATION OF SCHOOL EXPERIENCE THROUGH THE EYES OF STUDENT TEACHERS

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Abstract

During School Experience, student teachers are placed in a school under supervision of a cooperating teacher, and through observations they get to know about the real environment of classroom teaching and the challenges in the teaching career. The present study aims to investigate student teachers' views about school experience course. The participants are undergraduate students who are studying at different departments at the faculty of education. The data is collected through semi-structured interview questions such as 'What were your expectations prior to the course?, *How did the course meet or not meet your expectations? In what ways?,* and 'What are your expectations for the teaching practice course? Data is analyzed through content analysis. The findings have revealed that in general the most outstanding positive experience of the student teachers concerned was the opportunity to get involved in real school life and observe the challenges of the. However, their negative experiences included deficiencies in the quality of cooperating teachers and in the application of theory in practice. The ones who are not very satisfied with the school experience course informed that the cooperating teachers were not good role models since they failed to use the language teaching strategies and methods stressed in *university methods classes.*

Keywords: student teachers, school experience, evaluation, university

Introduction

In the Undergraduate Curricula of Education Faculties, preservice teachers' studies in schools consist of the School Experience and Teaching Practice courses. Since these courses prepare preservice teachers for real education environments, they are an important part of teacher training programmes (Sarıtaş, 2007). For teacher candidates to be able to use the theoretical knowledge they have acquired in the education faculty effectively in a real school environment, they need to have the opportunity for sufficient preservice practice. The School Experience course comprises observation of teachers and students, development of teaching skills by means of observation, and general subjects related to administration and school. Within the scope of this implementation, candidates observe and practise subjects such as the teacher's and student's day at school, asking questions, equipment and printed resources at school, directives and announcements, subject management and classroom control, evaluation of students' work, utilising course books, group work, preparation and use of worksheets, test preparation, lesson planning and ordering activities. The aim of the School Experience course, which is taught practically, is for the teacher candidate to become acquainted with different aspects of the school, students and teaching profession, observe experienced teachers at work, acquire knowledge about the structure and functioning of the school,

observe the theoretical knowledge related to the profession they have acquired in real education environments, and acquire the skills for putting these into practice (Azar, 2003).

During the practicum, it is also important for preservice teachers to determine the problems they experience, and their expectations. In the related literature, studies aimed at identifying preservice teachers' views about their practical courses and problems related to the practicum process are limited (Özmen, 2008). The aim of this study is to reveal the expectations of preservice teachers related to school experience, which is one of the practical courses at the education faculty, and to examine whether or not these expectations are fulfilled. In the present study the terms ' teacher candidate' ,'pre-service teachers' and ' student teachers' are used interchangeably.

Method

This research is a descriptive study. Purposive sampling was used for sample selection. The participants of the study are 12 preservice teachers studying in various departments of the education faculty at a state university in the east of Turkey, who have previously taken the School Experience course. Eight of the participants are female, and four are male. Five people are in the English teaching department, two are in Turkish teaching, one is in mathematics teaching, two are in the preschool teaching department, and two are in the classroom teaching department. For data collection, the following semi-structured questions were prepared: 1) What were your expectations before taking the School Experience course, and after taking the course, do you think that these expectations were fulfilled? 2) To what extent does the education you received at university correspond to the education you observed in school? 3) What are the points in which the education you received at university does not correspond to the education you observed in school, and what are the problems you observed? 4) Considering your observations and experiences during the School Experience practicum, what are your expectations from the Teaching Practice course you are to take in future? Prior to data collection, detailed information about the study was given to all voluntary participants, and their permission was obtained. The responses given to the questions were recorded, and later transformed into written text. Data of each participant were coded as PT1 (Preservice Teacher 1), PT2, ...PT12. Content analysis was performed on the transcribed data. By examining each participant's responses to the questions, meaningful statements were identified and written down one below the other, similar statements were grouped together, and the main themes represented by the grouped statements were extracted. These analysis steps were carried out in the same way for each question.

Results and Discussion

Expectations related to implementation of school experience course

With regard to preservice teachers' expectations related to the School Experience course prior to taking the course, and the extent to which their expectations were met after experience of the practicum, participants gave both positive and negative reports. Students who gave positive reports stated that the school experience practicum was of positive benefit in enabling them to observe theoretical knowledge being put into practice, and to observe a real classroom environment:

"My expectation from the school experience course was to observe school life in a real environment. I did not expect everything to be perfect, so it was as I had hoped. I saw the real situation in a real environment. My expectations were fulfilled."

"It corresponds completely at present. My practicum teacher applies all the methods and techniques I see here in full."

"In fact, my expectations were related to the training we receive here, that is, that the teachers would be more active in class, and that they would give even more importance to students' activeness... and the school I attended fulfilled this, since the school I went to is different from other schools; they don't make do with just giving orders. My practicum teacher is also better in this regard than those at other schools. Since he does more practice and gives importance to students' activeness, this corresponds completely with the training I receive here and is exactly what I had hoped for."

In the literature, there are studies which show that school experience is perceived positively by preservice teachers. Kasap (2015) examined the functionality of practicum courses by administering a questionnaire to 225 preservice teachers, and revealed that the teacher candidates regarded the school experience and teaching practice courses as important, but that they found them inadequate in terms of duration. Özçelik (2012), who collected data by means of a questionnaire administered to 181 preservice teachers attending foreign language teaching departments, Tural (2018), who gathered data through interviews with 16 teacher candidates studying in the social sciences teaching department, Cansaran, İdil and Kalkan (2006), who administered a questionnaire to 128 prospective teachers, and also Becit, Kurt and Kabakçı (2009), Oğuz and Avcı (2014), Ramazan and Yılmaz (2017), and Saracaoğlu, Yılmaz, Çöğmen and Şahin (2011), reported that preservice teachers expressed positive views related to the school experience practicum.

On the other hand, most of the students who gave negative responses to this question stated that their expectations were not met because they were unable to observe the theoretical knowledge they had learnt during their university education being implemented in the classroom. Similar to these findings, in a study in which data were collected from 190 participants via questionnaire, Can (2001) stated that while most participants gave positive reports in response to the question asking whether the opportunity for observation and application of the theoretical gains made at university was given at the practicum school, a considerable minority (32.6%) reported negative ideas.
Views of preservice teachers on this subject are given below:

"I was hoping that the lessons and methods I observed in the practicum would be compatible with the courses I took at university, but I saw that they did not correspond in any way. That is, I did not see that any of the methods we have learnt here [at university] were put into practice."

"My expectations related to university and the courses were much higher, whereas after going to school, I saw that the courses or lecturers would not be of much benefit to me. My expectations were partially met, but at a minimum level. In other words, here [in a real classroom environment] nothing happens in the way it is taught, and being together face-to-face with students in the same

environment is different, that is, the practical part of the subject does not correspond to the theoretical part."

Similarly, another student stated that instead of applying the methods taught at university, the practicum teachers relied heavily on the course book:

"...I cannot say that it corresponds very much. The in-class activities, games, etc. [taught at university] are not carried out in schools currently. The problem in the Turkish education system is also seen here. Teachers' efforts are mostly directed towards going through the course book and completing the activities. This does not comply with the education we receive [at university]."

The reason why the school experience practicum did not meet the expectations of preservice teachers may be associated with the fact that the practicum teacher's command of the subject was inadequate. In a study by Arkün-Kocadere and Aşkar (2013), preservice teachers stated that since practicum teachers were not sufficiently knowledgeable or qualified in their subjects, they could not be good role models for teacher candidates.

The comment of one preservice teacher in the English teaching department related to his practicum teacher was as follows:

"I sometimes hear the teacher pronouncing words incorrectly. When I hear this, I am disturbed, since if the children learn it in that way, it will be very difficult to correct."

Different from other preservice teachers, one participant mentioned the socio-psychological dimension of the school experience practicum, and stated that he experienced problems in this area:

"Before taking the course, I was hoping there would be a more serious, more formal atmosphere. I thought that I would experience the atmosphere of teaching completely. I expected to act within a framework of respect with the students like a teacher. These expectations were not completely fulfilled, but a warmer atmosphere was formed [between the students and me]. The students could not regard me in the same way as their own teacher. They chatted as they would with their big brother or sister. A serious atmosphere was not really created."

It was also reported in the study by Yılmaz (2007) that preservice teachers were not perceived as real teachers.

Correspondence of school experience course with theoretical education at university

Since the second and third questions are interrelated, the extent to which the preservice teachers' observations at school corresponded to the education they received at university, and, if there were points which did not correspond, the responses they gave related to what these points were, will be examined holistically.

Most of the students reported that the teaching methods of the practicum teachers did not correspond to the techniques and methods they learned in theoretical courses at university.

Similarly, in a study conducted with 526 preservice teachers, Aksu (2004) stated that theory and practice did not correlate with each other, and that this also prevented preservice teachers from being well trained in their fields. Yapıcı and Yapıcı (2004) and Şaşmaz-Ören, Sevinç and Erdoğmuş (2009) also concluded that the practices carried out in practicum schools were inconsistent with the scientific knowledge that preservice teachers acquired at university.

One teacher candidate in the English teaching department expressed this inconsistency by giving the example of grammar teaching, as follows:

"I do not think that it corresponds very much. I do not believe that any of the methods taught here [at university] are carried out. Put simply, it's the teacher's presentation method. For example, the lecturer at university tells us not to apply the grammar translation method, but our teacher [the practicum teacher] gives his students translation homework, whereas at university, we are taught not to give the rules directly when teaching grammar, and that it will be more suitable to elicit the rules with an implicit or inductive approach. Yet the teacher [the practicum teacher] gives the rules and then merely conducts form-focused activities. I found this to be very wrong, as that is not the way we were taught."

Similarly, another student explained this inconsistency between the theory and the implementation of this theory in the classroom environment by giving an example of vocabulary teaching:

"We learn the theory here [at university] but there [at the practicum school] the teacher tries different things according to the classroom atmosphere, and the number and readiness of the students. Yet the things he tries to apply do not correspond with the things we learn at university. For example, we have learnt that when we are teaching vocabulary, we should not give the word directly and should teach it in a context, but there, the teacher gives the word directly in a slide and has the students write it down. He gives the English and immediately afterwards, gives its Turkish equivalent."

Expectations related to teaching practice

After taking the School Experience course, preservice teachers take the Teaching Practice course. During this practicum, preservice teachers take more responsibility at their practicum schools, and once a week, gain teaching experience by teaching part of a lesson or the whole of it. Following the experience that the preservice teachers gained from the school experience practicum, students generally gave positive reports when asked about their expectations from the teaching practice course that they were to take during the following semester:

"If I am at the same school, I do not think I will have any problems, as I believe that I will have the same style as my present classroom teacher. However, if I am at a different school, I do not think I will be able to understand the teacher very well."

Some students reported that despite the problems they observed during the school experience practicum, they would play a more active role during the next term by delivering lessons, and that during the school experience process, they wished to apply the theoretical knowledge they had learnt at university in the correct way:

"I want to teach the students in the way that I have learnt at university. Of course, the conditions at the school I attend are important for this. However, I would like to surprise them with a different, more entertaining teaching strategy than the education system they have seen up to the present. I want them to love English not as a subject, but as a new language, a new culture."

Stating that his expectations were not fulfilled during the school experience practicum, one student mentioned that he would have a similar negative experience during the teaching practice course:

"My expectation and what I will do seem different, since it is difficult to suddenly place a student, who has been moulded in a certain way for a long time, into one's own mould. I will do things as they are supposed to be, but I doubt whether it will be as effective as this. It is very clear that the lesson I am to teach will be different in style to the lessons that their teachers will teach and that the student will not be able to adapt to this."

Another student stated that since he could not observe how the theory taught at university was put into practice in the school experience course, he was afraid that he was not ready for teaching practice, in which he would have to take more responsibility:

"I am afraid, because I do not know which methods I will apply or how I will ensure classroom management, as I haven't seen these in practice. To be honest, I do not know what to do or how I will enable their [the students']active participation in class."

Conclusion

Together with teaching experience, the school experience practicum has an important place in allowing preservice teachers to acquire the general and specific subject skills required for the teaching profession. In this study, although it was determined that preservice teachers generally had positive attitudes towards the school experience practicum, most of the participants also reported that the methods implemented by practicum teachers did not correspond to the theoretical knowledge taught at university. This finding reveals that some practicum teachers did not carry out their duty as effective role models for preservice teachers. Similarly, studies in the literature state that about a quarter of the problems experienced by preservice teachers at their practicum schools are related to practicum teachers (Akkoç, 2003; Şaşmaz-Ören, Sevinç & Erdoğmuş, 2009). Considering the role of the school experience course in the training of qualified preservice teachers, attention must be paid to the selection of qualified practicum teachers (Oğuz, 2004; Şaşmaz-Ören, Sevinç & Erdoğmuş, 2009).

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EFFECT OF ROLE MODELS AND ENTREPRENEUR FAMILY ON ENTREPRENEURIAL ACTIVITY IN START-UP ENTREPRENEURS

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Abstract

Brain power has replaced machine power in today's global word order. On the other hand, mind sweat replaces forehead sweat. Nowadays, entrepreneurship activities that require innovation rather than classical entrepreneurship activities are gaining importance, and these activities highlight the new generation initiatives that market high value-added products and services, namely start-up initiatives.

Social, environmental, cognitive and demographic factors as well as many personality factors that affect people's entrepreneurship are also very influential on the entrepreneurship processs. Education status, work experience, entrepreneurial family background, role models and social networks can be considered as social factors that affect the decision-making process of entrepreneurship. Up to date, numerous empirical studes have shown that having an entrepreneurial family background is effective on entrepreneurship. According to the result of a quantitative study conducted on start-up entrepreneurs in some technoparks operating in İstanbul, %30,81 of start-up entrepreneurs have entrepreneurs in their families, while %68,90 of start-up entrepreneurs have no entrepreneurs in their families. The result of this research shows that, having entrepreneurs in the family has not been effective on the entrepreneurship activities of start-up entrepreneurs. This study, which has reached a different conclusion from the previous studies in the literature, was conducted on start-up entrepreneurs. Considering that start-up enterprises are knowledge-based, targeting growth, capable of growth, high added value, technology-intensive and requiring innovation, the result obtained have been evaluated and interpreted accordingly.

Keywords: Entrepreneurial activity, Role models, Entrepreneur family, Start-up entrepreneurs

Introduction

Entrepreneurship activity is very important in today's global and competitive world order. Opening a business and being an entrepreneur in the classical sense has left its place to start-up enterprises that produce and develop technology, produce and market high value-added goods and services, focus on R&D activities and also referred to as new generation entrepreneurship. The contribution of new generation enterprises to the country's economy is great due to their marketing by producing high value-added products and services. Start-up initiatives are those that focus on R&D activities and there is a strong correlation between the budget allocated by countries for R&D activities and

their level of development. The existence of many successful start-up enterprises can be considered as an important indicator of the development level of the country's economy.

In the historical process, many researches have been made and ideas have been put forward on which factors are more effective in deciding on entrepreneurship activity. Social factors (experience and work experience, education level, role models, having an entrepreneurial family background, social networks), environmental factors, cognitive factors and demographic factors are the factors that affect people's decision to entrepreneurship. In this study, the effect of entrepreneurial role models and having an entrepreneurial family background on entrepreneurial activity was examined, and a research was carried out on start-up entrepreneurs operating in technoparks for this purpose.

Method

Quantitative research method was used in the study. A survey was carried out on 344 start-up entrepreneurs operating in "İstanbul Teknopark (Istanbul Technopark), İstanbul Teknik Üniversitesi Teknopark (Istanbul Technical University Technopark), Bilgiyi Ticarileştirme Merkezi (Information Commercialization Center) and Startup Grind. Past studies on the subject and their results are included in the literature section of the study, and the results of the research are examined in detail in the discussion and conclusion section.

Literature

When entrepreneurship studies were examined, a relationship was established between role models and entrepreneurship activities (Kolvereid, 1996, p. 47); role models have had an important place in entrepreneurship research. While Cooper (1986) provides important evidence that company founders are significantly influenced by role models in the decision-making process for entrepreneurship. On the other hand, Brockhaus and Horwitz (1986) concluded that many entrepreneurs have successful role models within their family members or in the business environment. Entrepreneurs mostly stated that their parents are entrepreneurs (Dyer & Handler, 1994, p.72). Studies show that having an entrepreneurial family is effective on entrepreneurial activity. The strong bonds of their families in the process of fulfilling their responsibilities can be defined as an important representative of the resources that entrepreneurs have. social networks, financing, workforce, as well as information and emotional support (Chrisman et al., 2002, p. 123). In a study conducted by Ronstadt, people who were hesitant about starting a business were examined, it was concluded that there were no role models and family members that would set an example for those who gave up their entrepreneurship activities. These findings show that observing the success of other people increases the courage of the person and the existence of successful role models in the environment supports entrepreneurial activities and efforts (Brockhaus & Horwitz, 1986, pp. 35-36).

Studies in the literature (Raijman, 2001; İlhan, 2003; Chlosta et al., 2012; Zegeye, 2012) are studies confirming that having an entrepreneurial family has a positive effect on entrepreneurial activity (Bozyiğit & Yaşa, 2015, p.74).). On the other hand, there are many studies that have concluded that having an entrepreneurial family is also effective on entrepreneurial intention, which is accepted as the strongest indicator of entrepreneurial activity in the literature. Peng et al. (2012), Bozyiğit and Yaşa (2015), Ozaralli and Rivenburg (2016), Ensari and Alay (2017) have a positive effect on entrepreneurial intention. Being entrepreneurs in the family shows that individuals have a

stronger entrepreneurial tendency. The fact that the family has an entrepreneurial background in the private sector causes individuals to internalize entrepreneurship more and their entrepreneurial skills come to the fore (İlhan, 2003, p. 74).

Past studies in the literature (Markman et al., 2002; Segal et al., 2005; Ahmad et al., 2014) reveal that role models are also highly influential on entrepreneurial intention. According to the research results of Laviolette et al. (2012), both positive and negative role models are effective on entrepreneurial intention, but the effect of positive role models is stronger than the effect of negative role models. The study conducted by Bozyiğit and Yaşa (2015) on the sample of students revealed that being an entrepreneur in the family has a positive effect on entrepreneurship tendency, at the same time, students predominantly take their fathers as a role model, in other words, students are influenced by the father's profession rather than the mother's profession in entrepreneurship. Polin et al. (2016) 's study on the subject has reached a different result. According to the results of the research; when compared to entrepreneurial mothers and entrepreneurial fathers, the effect of mothers on entrepreneurial intention is stronger than that of fathers. While the situation is the same for girls and boys if the single parent is an entrepreneur, differences were observed between girls and boys if both parents are entrepreneurs. When both parents are entrepreneurs, boys' entrepreneurial intentions are higher than if a single parent is an entrepreneur, whereas girls are the opposite. In girls; entrepreneurial intention is higher if only one parent is entrepreneurial than if both parents are entrepreneurs.

Conclusion and Discussion

The findings on demographic features obtained as a result of the research are given in the table.

Gender	Female	**%27,62**
	Male	**%72,38**
Age	18-26	**%46,5**
	27-35	**%36,92**
	36-44	**%12**
	45-53	**%4,07**
	54-62	**%0,29**
Education	High School	**%2,33**
	College	**%4,07**
	University	**%65,4**
	Postgraduate	**%27,99**
Sector	Software and Information	**%48,26**
	Computer and Electronic	**%11,92**
	Production	**%7,852**
	Other	**%13,08**
Company Age	In the establishment phase	**%48,84**
	Newly established (Last 5 years)	**%51,16**

Entrepreneurial Rank	Entrepreneurial activity in the past No Entrepreneurial activity in the past	%41,90 %55,52
Family's Entrepreneurial Rank	Entrepreneur in the family in the past No entrepreneur in the family in the past	%30,81 %68,90

Most of the start-up entrepreneurs participating in the study are university graduates, male and young entrepreneurs between the ages of 18-26. The sector they mainly operate in is the software and information sector. When we evaluate the entrepreneurs in terms of entrepreneurship rank, 41.90% of them had entrepreneurship rank, that is, there were entrepreneurship activities in the past; We see that 55.52% of them did not have the entrepreneurial rank, that is, they did not have entrepreneurial activities in the past. When the families of the entrepreneurs participating in the research are evaluated in terms of entrepreneurship rank; it is observed that 30.81% of the entrepreneurs are entrepreneurs in their families, while 68.90% are not entrepreneurs in their families. This research is a study that has reached a different result from previous studies in the literature. In other words, according to the findings obtained, the family's entrepreneurship rank that is being an entrepreneur in the family did not have an effect on the entrepreneurship activities of start-up entrepreneurs. Because the vast majority of those engaged in entrepreneurship activities are non-entrepreneurs in their family.

Start-up initiative also referred to as new generation initiatives. These are enterprises that mainly operate in the field of technology, focus on R&D studies, offer innovative ideas, produce innovative products and services, and have rapid growth. One of the most important features of entrepreneurs is that they can take risks. However, start-up entrepreneurs consist of technical people with a high level of education, and the risk taken by these entrepreneurs is a calculated risk. In other words, these entrepreneurs are not people who take risks by chance, they are people who can take calculated risks by using their skills, knowledge and training. They perceive risk as an opportunity and turn situations that normally seem disadvantageous to their advantage. These young entrepreneurs, whose technical features are also dominant, act with their own knowledge, education, courage, and affordable risk-taking characteristics while engaging in entrepreneurship activities, and their entrepreneurial experience, namely entrepreneurial ranks, support their activities to make new ventures. In this case, the entrepreneurial ranks of their families, that is, the entrepreneurial role models and entrepreneur profiles within the family, have not been effective on the entrepreneurial activities they have already carried out. A high rate of 68.90% young entrepreneurs who do not have an entrepreneurship story in their family are involved in new generation entrepreneurship activities with their own knowledge, education and entrepreneurship experiences.

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Heat and Mass Transfer Analysis in Unsteady Flow of Tangent Hyperbolic Nanofluid over a Moving Wedge with Buoyancy and Dissipation Effects

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Abstract

In manufacturing industries, the rate of fluid flow with heat and mass transfer characteristics has significant implications on cost of production and quality of products. The mathematical modeling of such phenomena is used to describe and predict the flow behavior of many industrially processed fluids. In this study, we construct and analyze a mathematical model for the flow characteristics of tangent hyperbolic nanofluids flowing over a moving wedge subjected to various thermo-physical effects. By using system of partial differential equations, we translate the flow phenomena into a boundary value problem. The governing equations along with the relevant boundary conditions further simplified to a couple of nonlinear differential equations via similarity transformation. We then employ a relatively recent and a more powerful mathematical method, namely the optimal homotopy analysis method to obtain analytic solutions. We prefer to use this method due to its efficiency as it combines the advantages of high accuracy of analytical methods and flexibility of numerical methods. The outcomes of this study are presented in graphical and tabular forms and up on comparison with previously published works under some restricted assumptions, they are found in excellent agreement. Analysis of the results revealed that the effect of buoyancy facilitates the flow velocity and the increase in the dissipation parameter is found to maximize temperature distribution and nanoparticle concentration near the surface of the wedge. The findings of this study are therefore believed to contribute in the efforts made by the scientific community to give more accurate predictions to such practically useful flow problems before doing costly and risky physical experiments. It will also serve as inputs for engineers to make knowledge-based decisions in evaluating and improving the working efficiency of their flow systems or in producing a more reliable and quality industrial products.

Key terms: Mathematical Modeling, Tangent hyperbolic, Nanofluid Flow, Moving Wedge

A NEW SCHIFF BASE and ITS METAL(II) COMPLEX: SYNTHESIS, CHARACTERIZATION and BIOMOLECULAR INTERACTIONS

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Abstract
Schiff bases are organic compounds containing an imine group (–RC=N–). They are usually prepared by the condensation reaction of a primary amine and a carbonyl compound (either aldehyde or ketone). Schiff bases are considered as a very important class of organic compounds because of their ability to form complexes with transition metal ions and of their pharmacological properties. The metal complexes containing Schiff bases have been of much interest over the last years, largely because of its various applications in biological processes and potential applications in designing new therapeutic agents such as antibacterial, antibiofilm, antifungal, antimalarial, antioxidant, anticancer, antiviral, etc.

In this study, a new Schiff base ligand and its metal(II) complex were synthesized. The structure of the Schiff base ligand and the complex was elucidated by elemental analysis, FTIR, NMR, ESI-MS and X-ray single crystal diffraction methods. Interactions of the Schiff base ligand and the complex with calf thymus DNA (CT-DNA) and bovine serum albumin (BSA) were researched using electronic absorption and fluorescence spectroscopy. The experimental outcomes demonstrated that metal(II) complex bind strongly on CT-DNA than Schiff base ligand. The results also indicated that hydrogen bonds and van der Waals interactions play a major role in Schiff base ligand+BSA and metal(II) complex+BSA binding process. Consequently, biomolecular binding activities of metal(II) complex was found to be higher than Schiff base ligand.

Keywords: Schiff base, Cu(II), DNA interactions, BSA interactions

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

YENİ SCHİFF BAZI ve METAL(II) KOMPLEKSİ: SENTEZİ, KARAKTERİZAYONU ve BİYOMOLEKÜLER ETKİLEŞİMLERİ

Özet

Schiff bazları bir imin grubu (–RC=N–) içeren organik bileşiklerdir. Genellikle bir birincil amin ve bir karbonil bileşiğinin (aldehit veya keton) kondenzasyon reaksiyonu ile hazırlanırlar. Schiff bazları, geçiş metal iyonları ile kompleksler oluşturma yetenekleri ve farmakolojik özellikleri nedeniyle çok önemli bir organik bileşikler sınıfı olarak kabul edilir. Schiff bazlarını içeren geçiş metali kompleksleri, büyük ölçüde biyolojik süreçlerdeki çeşitli uygulamaları ve yeni terapötik ajanların tasarlanmasındaki potansiyel uygulamaları (antibakteriyel, antibiyofilm, antifungal, antimalaryal, antioksidan, antikanser, antiviral, vb.) nedeniyle son yıllarda çok ilgi çekmiştir.

Bu çalışmada, yeni Schiff bazı ve bu Schiff bazının metal(II) kompleksi sentezlendi. Schiff bazı ve kompleksin yapıları elementel analiz, FTIR, NMR, ESI-MS ve X-ışını tek kristal kırınım yöntemi ile aydınlatıldı. Schiff bazı ve kompleksin Buzağı Timüsü DNA'sı (CT-DNA) ve sığır serum albümini (BSA) ile etkileşimleri elektronik absorpsiyon ve floresans spektroskopisi teknikleri kullanılarak incelendi. Deneysel sonuçlar, metal(II) kompleksinin CT-DNA'ya Schiff baz ligandından daha güçlü bağlandığını gösterdi. Sonuçlar ayrıca, hidrojen bağı ve van der Waals etkileşimlerinin Schiff bazı ligand+BSA ve metal(II) kompleksi+BSA bağlanma sürecinde önemli bir rol oynadığını gösterdi. Sonuç olarak, metal(II) kompleksinin biyomoleküler bağlanma aktivitelerinin Schiff bazı ligandından daha yüksek olduğu bulundu.

Anahtar Kelimeler: Schiff bazı, Cu(II), DNA etkileşimleri, BSA etkileşimleri

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Teaching the concept of energy in Morocco: The textbook and the teacher's conception

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Abstract

The objective of this work is to explain some of the difficulties encountered by new secondary school teachers in Moroccan teaching of the concept of energy. Previous work has enabled us to distinguish two opposing approaches, the universal approach (UA) and the specific approach (AP). In upper secondary physics programs, Energy is taught through both approaches. On the other hand, the universal approach is neglected in university teaching. This has led us to assume that there is a potential gap between the teacher's study in university and what they should teach about the concept of energy in upper secondary. This gap could be one of the reasons for the perceived difficulties of new teachers.

To demonstrate the potential gap, we compared the organization of energy knowledge in the two institutions, university education and secondary education. Our methodology is based on the study of habitat and energetic life according to the anthropological theory of knowledge. Based on the results of the ecological analysis, we developed a questionnaire for new teachers. The consistency between the results of the ecological analysis and the results of the survey allowed us to confirm that the difference between the two approaches used in the two establishments explained certain difficulties encountered by new teachers in teaching the concept of energy.

Regarding the results, we can say that the habitat study showed a noticeable difference in energy life. At the university, the energy habitat is broken up into several textbooks corresponding to different fields, only PA is present. In high school, energy is considered as a theme; the UA appears next to the PA. The energy life has shown that UA does not exclude PA, while the opposite is possible. Experimentation showed that the responses of the teachers interviewed, as well as their comments, never brought out the universal approach (UA).

Keywords: Teaching the concept of energy, Theories of Anthropology, Habitat and Energy Life

IN VITRO ANTIOXIDANT AND PHYTOCHEMICAL SCREENING OF ETHANOL LEAVES EXTRACT OF DETARIUM MICROCARPUM

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Abstract

Detarium microcarpum is used traditionally for the treatment of various ailments in Northern Nigeria traditional medicine. The phytochemical and antioxidant, free radical scavenging activity of aqueous leaves extract of this plant was investigated in vitro using spectrophotometer method against 1,1-dipenyl-2-picrylhydrazyl (DPPH) and hydrogen peroxide (H_2O_2). Free radical scavenging activity of the plant extract against DPPH and H_2O_2 was concentration dependent with IC_{50} value of 4.84 and 2.77 respectively as compared with those of standard ascorbic acid with IC_{50} value of 2.93 and 1.72 respectively. In this result, it was found that the aqueous leaves extract of *D. microcarpum* contains high phenolic content that might account for the strong activity observed against DPPH and H_2O_2 radicals. This scavenging activity may be due to the presence of hydroxyl group attached to the aromatic ring structures and thus help to quench the radicals. The presence results demonstrate that aqueous leaves extract of *D. microcarpum* has in vitro antioxidant activities due to the presence of phenolic compounds.

Keywords: in vitro, antioxidant, phytochemicals screen, IC_{50}

1.0 INTRODUCTION

D. microcarpum is an African tree of the Fabaceae family. Shrubs that grow up to 15 m tall but can grow up to 25 m in humid areas. On average growth, shoots can grow up to 1.5 m 2 m in height. It blooms during the rainy season (July) to September / November, It bears fruit from September January / May and November; the tree sheds its leaves and produces new leaves in March (African journal biotechnology, 2009). Source of a cure or treatment for certain diseases (Evans, 2008). The practice of traditional medicine in the field of science and the treatment of diseases and infections is rapidly increasing the world of science. The leaves are used to treat fatigue, paralysis, meningitis, cramps. Leaf powder is used in the treatment of diarrhea in Africa. In Senegal, seeds are used as an alternative to malaria. According to Phytomedicinally, parts of plants or pieces are used to treat illness in a person. It is a medicinal plant widely used for stomach problems, skin problems, snake

bites, colds and other diseases (Evans, 2008). Today there is a growing interest in bioactive chemical compounds based on plants. Many bioactive chemicals are isolated and studied for medicinal function. Over the past two decades, the pharmaceutical industry has invested heavily in pharmaceutical and chemical research worldwide in an effort to find the most potent drugs, rather than just a few new drugs. Plants have successfully passed the commercial testing test.

Antioxidants play an important role as health protection agents. Scientific evidence suggests that antioxidants reduce the risk of chronic diseases including cancer and heart disease. The main sources of antioxidants are naturally occurring in grains, fruits and vegetables. Plants found in antioxidants such as vitamin C, vitamin E, carotenes, phenolic acids etc. have been known to reduce the risk of disease. Most antioxidant compounds in the common diet are found in plant sources and fall into various categories (heran pharmacopoeia, 2008). Antioxidants are substances that soften free radicals and their actions. There are natural antioxidant enzymes such as superoxide dismutase (SOD), glutathione peroxidase, glutathione reductase, thioredoxin thiols, and disulphides bonding that form a baffling system in all cells. Alphatocopherols are an antioxidant chain that prevents the diffusion of free radicals in all cell-membranes in the human body. Ascorbic acid is also part of the normal immune system. Other non-enzymatic antioxidants include carotenoid, flavanoid and related polyphenols, alpha lipoic acid, glutathione (PK Ramamoorthy, A. Bono).

3.0 MATERIALS AND METHODS

3.1 Materials

Table 3.1: List of Materials and Reagents

Pestle and mortar
Electric blender
Shaker water bath
Dragendorff's reagent
Alcoholic KOH
1% HCL and dilute HCL
15% FeCl3 solution
Chloroform
Dilute ammonia solution
Distilled water
Methanol
Sprit
Ethanol
Hydrogen peroxide
Phosphate buffer (pH 7.5)
Acetate
Ascorbic acid
Mayer's reagent
Molish reagent
Fehling's solution
Filter papers

Methods

DPPH Scavenging activity

DPPH testing is a well-known method popular in natural studies of antioxidant products. One of the reasons is that this method is very sensitive and simple. This experiment is based on the idea that a hydrogen donor is an antioxidant. It measures compounds that are powerful monitors. The antioxidant effect is proportional to the disappearance of the most commonly used method due to its simplicity and the color changes from purple to yellow following the formation of DPPH in getting hydrogen from the antioxidant. This reaction is stoichiometric in relation to the number of acidic hydrogen atoms. The dried extracts obtained thus are used to test the antioxidant activity using various in vitro forms.

Sample Collection and Preparation of the Plant Extracts

The leaves of the plants are dried in the air under shade and cut into small pieces using a pestle and mud and ground into a powder using an electric blender. Two hundred grams of powdered herbs are added to 500 Ml of distilled water or 70% ethanol in separate 1.5 L separate barrels at room temperature. The same agitation was applied to the shaker bath water for 18 h. The contents are filtered through a piece of muslin cloth and then a Whatman filter paper. The filters were extracted from dry water and the resulting extracts were placed in separate clean dry bottles and stored in the refrigerator at 4oC (Ayankunle, et al., 2012).

Phytochemical Screening
Test for Carbohydrates:
Molish test (General test for Carbohydrates):

2g of extracted plant dissolved in 5ml of 70% Methanol in a test tube. Approximately 3ml of this solution was given to another test tube; a few 2SO4 drops are carefully inserted to form the bottom layer. The red color in the interface indicates the presence of carbohydrates (Sugars) (Evans, 2008).

Fehling Test (Sugar Reduction Test):

The levease plant extraction solution was prepared by dissolving 0.1g of leaves extracting in 5ml of water. 2ml of equal mixture of Fehling A and B solutions was added to about 5-6ml of the extraction solution and the mixture was boiled in a water bath for 5 minutes. The redness of the bricks indicates the presence of free sugar. If the above test was not available, 0.2g of the drug solution was hydrolyzed in water by boiling with 5ml of dilute hydrochloric acid for 5 minutes. 5ml of 10% sodium hydroxide was added to dilute solution A and B and boiled. The redness of the bricks indicates the presence of a reduced sugar content (Evans, 2008).

Test for Flavanoids

Ferric Chloride

The mixture (0.5g) is boiled in distilled water and filtered. In 2ml filtrate with a few drops of 10% ferric chloride solution and add. The appearance of a greenish-blue or Violet color is an indication of the presence of a phenolic hydroxyl group (Evans, 2002).

Sodium Hydroxide

The extracted leaves (0.5g) are dissolved in distilled and filtered water. In the filtrate, 10% aqueous sodium hydroxide 2ml (NaOH) was added to produce a yellow color. The change in color from yellow to color with the addition of dilute hydrochloric acid (HCl) is an indication of the presence of flavonoids (Evans, 2002).

Test for Alkaloids

Approximately 2ml of the extraction solution is mixed with 1 ml of 1% HCl, boiled in a water bath with 3 drops of Wagner reagents, Mayer reagents and Dragendorffs reagent included. The appearance of the orange precipitate was taken as the presence of alkaloids extracted.

The extracted leaves (0.5g) are diluted with 5ml of 10% aqueous hydrochloric acid (HCl) in a water bath and filtered. The filtrate (3.5ml) is taken and divided into three parts in test tubes.

Dragendroff test

In the first test tube, 3 drops of dragendroff reagent were added. A positive result was obtained with the formation of a bright red orange.

Mayor's test

In the second test tube, 3drops of Mayer reagent were added. Good results have been obtained with the formation of curly-colored skin as a present indication of alkaloids.

Wagner's test

In the third test tube, 3drops of Wagner's reagent are added. A good result was obtained by the formation of dark brown ice as an indicator of alkaloids. (Brain and Turner, 1975; Sofowora, 2008).

Flavanoid testing

Ferric Chloride

The mixture (0.5g) is boiled in distilled water and filtered. To filtrate 2ml a few drops of ferric chloride solution are added. The appearance of a greenish-blue or Violet color is an indication of the presence of a phenolic hydroxyl group (Evans, 2002).

Sodium Hydroxide

The extract (0.5g) is dissolved in distilled water and filtered. In the filtrate, 10% aqueous sodium hydroxide 2ml (NaOH) was added to produce a yellow color. The change in color from yellow to color with the addition of dilute hydrochloric acid (HCl) is an indication of the presence of flavonoids (Evans, 2002).

Test for Saponins

Two (2g) grams of extracts boiled in 10ml of water, filtered and filtered for the following tests.

Frothing test

The filtrate (5ml) is mixed with 10ml of water into a test tube. The test tube is suspended and vigorously shaken for 5 minutes. The occurrence of a bubble column that persists for more than 5 minutes indicates the presence of saponins (sofowora, 2008).

Fehling's Test

The filtrate 2ml is mixed with 2.5ml of equal volumes of Fehling's solutions A and B and then heated. Appearance of a brick-red precipitate is taken as the presence of saponins (Evans, 2002).

Test for Tannins

Two (2mL) of the extraction solution was mixed with 2mL of 15% FeCl3 solution. The appearance of blueblack precipitate was considered the presence of tannins in the sample.

Steroids Test

In the extract (2g), 2ml of acetic anhydride was added and cooked well in ice. The conclusion. H2SO4 is carefully added, color enhancement from violent to dark blue and dark blue is a modern indication of steroids eg aglycone component of cardiac glycoside (sofowora, 2008).

Triterpenoid test

Extraction (0.5g), 5ml of ethanol was added followed by the application of 1ml of acetic anhydride. After that in this 1ml of Conc. H2SO4 is carefully placed next to the test tube to form the lower layer. The color change from pink to violence indicates the presence of triterpenoids (sofowora, 2008).

Salkwoski Test

The extract (0.5 g) is dissolved in 2ml of chloroform. H2SO4 is carefully placed next to the test tube to form the lower layer. A reddish-brown or yellowish color on the interphase is an indication of the presence of a steroidal ring (sofowora, 2008).

Determination of DPPH radicals scavenging activity

DPPH is stable with free radical at room temperature and accepts electron / hydrogen radical to become a stable diamagnetic molecule (JM David et al, 2008). The reducing effect of DPPH radical is determined by the reduction of its absorption to 5l7 nm, which is caused by antioxidants. Decreased absorption of DPPH radical is caused by antioxidants, due to the reaction between antioxidant molecules and radicals, it persists, leading to mass loss through the hydrogen donation. It is most noticeable as a color change from purple to yellow. Therefore, DPPH is often used as a substrate to assess antioxidant activity. (R. Edamatsu et al, 2016). The results show that the emissions reduce radicals in the corresponding hydrazine when it reacts with hydrogen donors to the antioxidant target (LW Chang et al, 2007). DPPH radicals react with appropriate reducing agents, electrons are synthesized and the solution leaves color stoichiometrically depending on the number of electrons taken (L.S.

% = [(Ab-Ab) / Ab control × 100]

Statistical Analysis

Price data obtained from the study are presented as a mean ± standard deviation. Statistical analysis where applicable was performed using variance analysis (ANOVA) followed by Tukey's post test with the help of IBM Statistical Package software for Social Scientist (SPSS 20). The difference is considered significant when $P < 0.05$. The concentration of Halfmaximal inhibitory (IC50) was calculated from% inhibition compared with the release of the non-linear regression curve extracted individually.

RESULT

Table 4.1: Result for Phytochemical Screening

Phytochemical	Result
Carbohydrates	+
Flavonoids	+
Alkaloids	+
Tannins	+
Saponins	+
Steroids	+
Triterpenoids	+
Cardioglycoside	+

Key: + = Presence, - = Absence

Table 4.2: DPPH Scavenging Activity of the Plant Extract

Sample	Concentration (mg/ml)	% Inhibition	IC_{50}	r^2
Plant Extract	0.2	0.064±0.005	2.34	
	0.4	0.063±0.006		
	0.6	0.067±0.006		
	0.8	0.099±0.009		
	1.0	0.034±0.005		

Table 4.3: DPPH Scavenging Activity of the Ascorbic Acid

Sample	Concentration (mg/ml)	% Inhibition	IC_{50}	r^2
Ascorbic Acid	0.2	0.216±0.004		
	0.4	0.195±0.004		
	0.6	0.212±0.003	2.93	
	0.8	0.027±0.006		
	1.0	0.085±0.005		0.644

Table 4.4: Hydrogen Peroxide Scavenging Activity of the Plant Extract

Sample	Concentration (mg/ml)	% Inhibition	IC_{50}	r^2
Plant Extract	0.2	0.509±0.006		
	0.4	0.530±0.003		
	0.6	0.578±0.008		

| | 0.8 | 0.644±0.005 | 2.77 | |
| | 1.0 | 0.607±0.005 | | 0.7325 |

Table 4.5: Hydrogen Peroxide Scavenging Activity of the Ascorbic Acid

Sample	Concentration (mg/ml)	% Inhibition	IC_{50}	r^2
Ascorbic Acid	0.2	0.622±0.003		
	0.4	0.676±0.003	1.72	
	0.6	0.702±0.008		
	0.8	0.737±0.006		
	1.0	0.758±0.002		0.9722
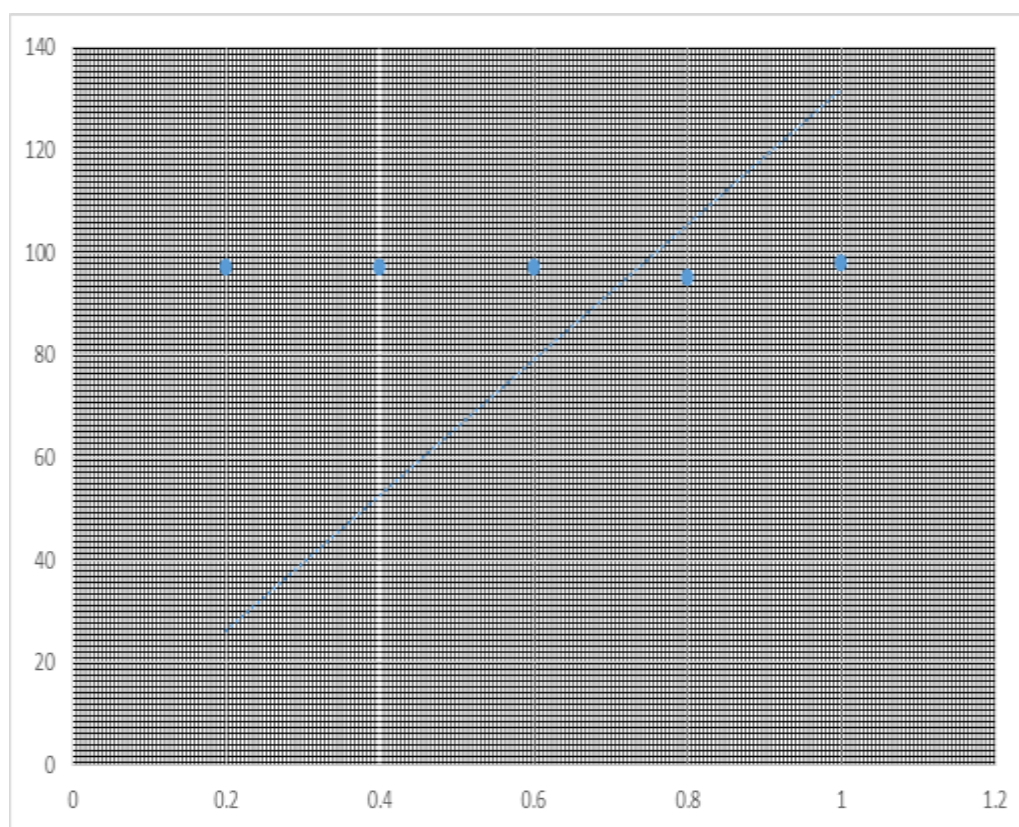
Figure 4.1: A Plot Percentage DPPH Scavenging Activity of Plant Extract against its Concentration

Concentration (mg/ml) of the Plant Extract
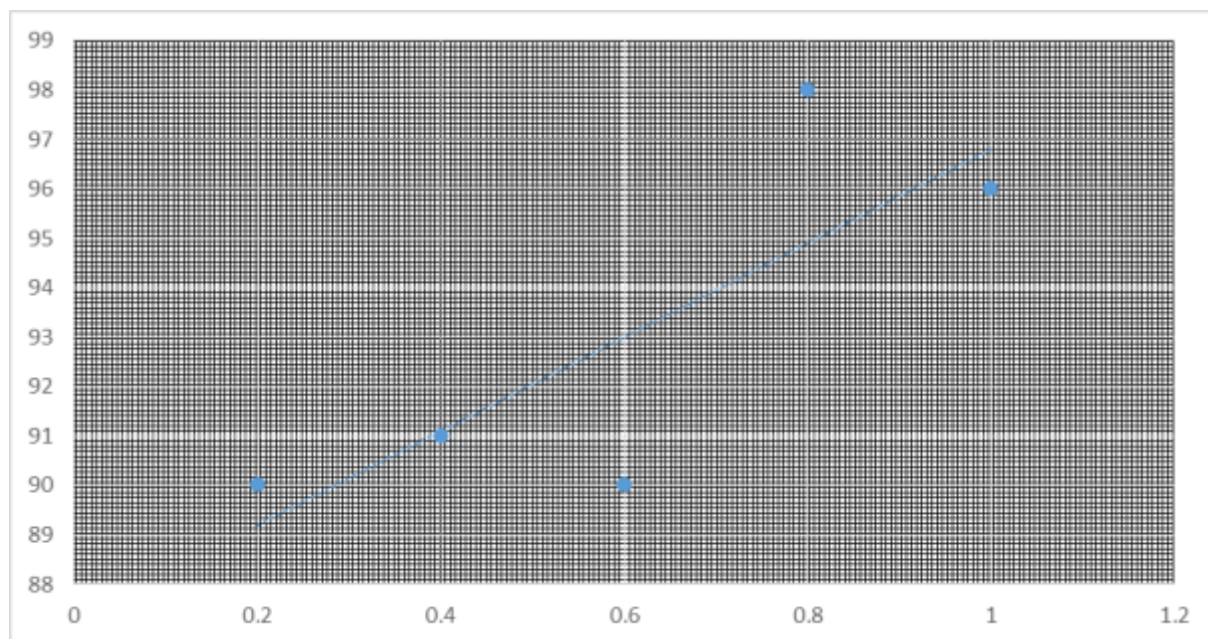
Concentration (mg/ml) of the Ascorbic Acid

Figure 4.2: A Plot Percentage DPPH Scavenging Activity of Ascorbic Acid against its Concentration
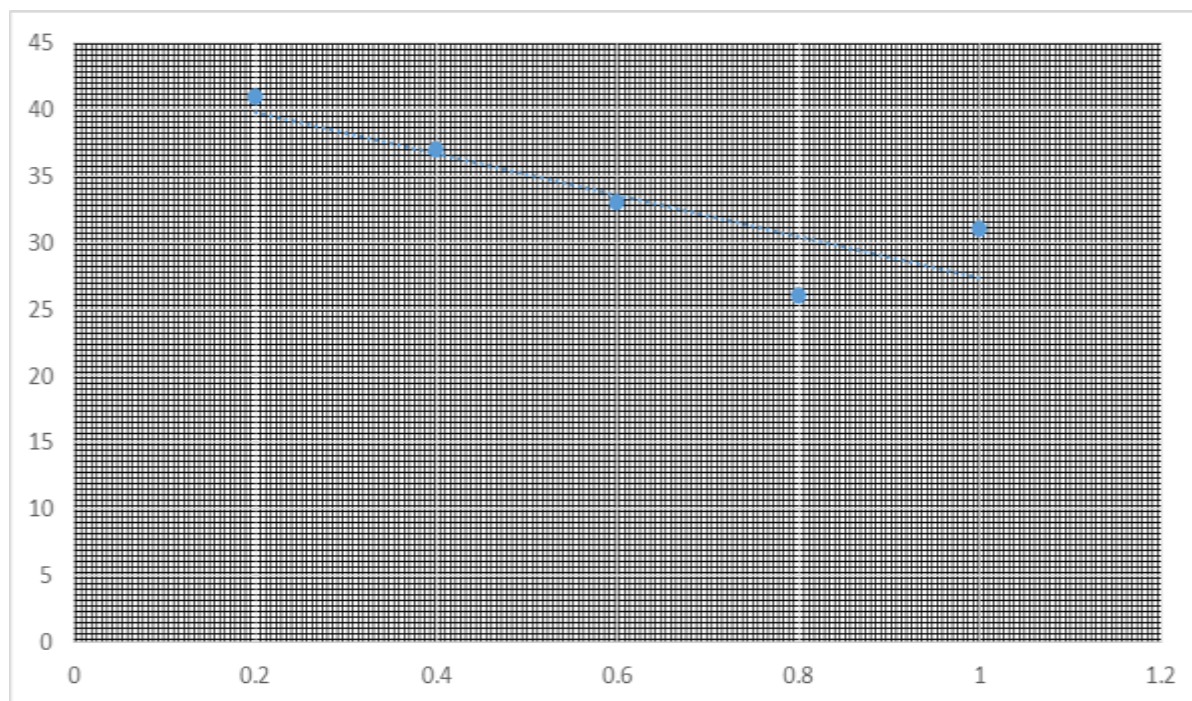
Concentration (mg/ml) of the Ascorbic Acid

Figure 4.3: A Plot Percentage Hydrogen Peroxide Scavenging Activity of Plant Extract against its Concentration
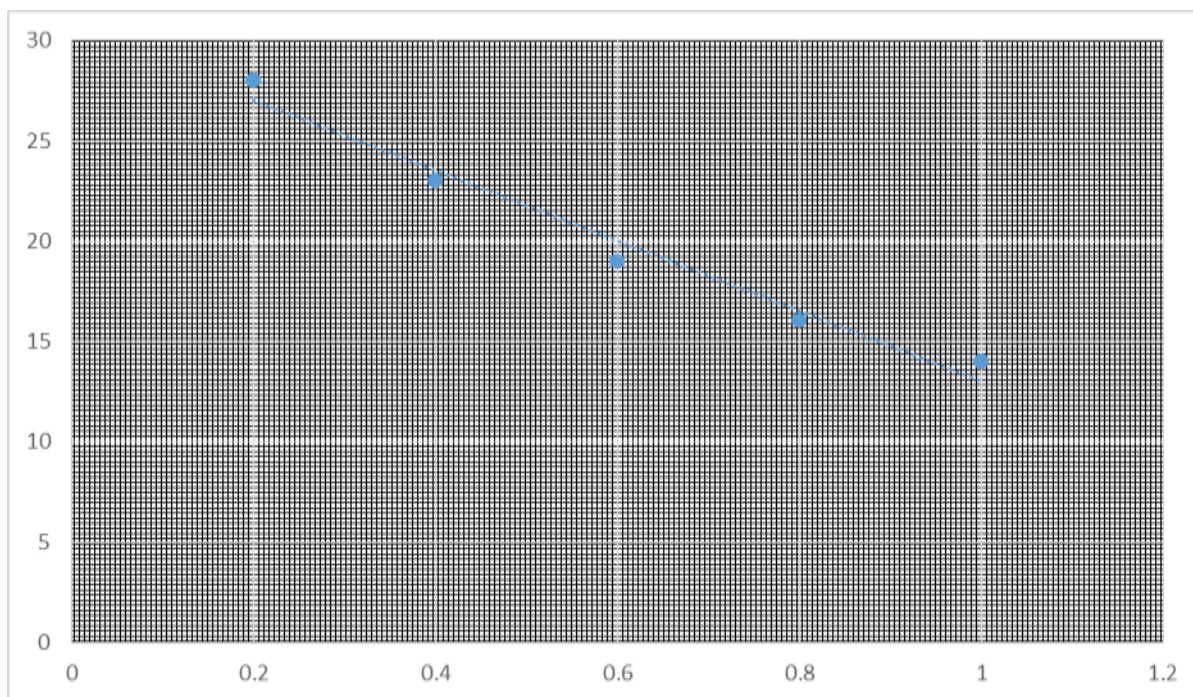
Figure 4.4: A Plot Percentage Hydrogen Peroxide Scavenging Activity of Ascorbic Acid against its Concentration

Discussions

The leaves extract of D. microcarpum are widely used for their diuretic and antioxidant properties. (Kouyaté and Damme, 2006). This wide application forms for the in vitro antioxidant and phytochemicals screening of the plant leaves extract. Increase in the amount of free radicals and reactive oxygen species (ROS) in the body without a corresponding strong anti-oxidant defence system leads to oxidative stress and this has been linked to the pathogical diseases such as cardiovascular disease, cancer, brain injury and diabetes mellitus (Halliwell and Gutteridge, 1999). In the present study, it was found that the leaves extract of D. microcarpum contains high level of phenol content that account for the strong activity observed against DPPH and H_2O_2 redicals. (Vinson et al., 1998). On the other hand, the results revealed that leaves extracts of D. Microcarpum scavenged DPPH to various extents. The leaves extracts showed good IC_{50} values of 4.84 respectively as compared with those of standard ascorbic acid with IC_{50} of 2.93 respectively. DPPH is a stable free radical and possesses a characteristic deep purple color in solution; antioxidantsmightt with it thereby making it lose its characteristic deep purple color, on accepting proton from antioxidants, leading to absorption decrease 517 nm). The degree of discoloration is therefore an indication of the scavenging ability of the antioxidant extract. Evidently, the leaves extract fraction had the strongest DPPH scavenging ability as shown by its IC_{50} values (Table 1). Phenolic compounds and flavonoids have been reported to be associated with antioxidative action in biological systems, acting as scavengers of singlet oxygen and free radicals (Rice-Evans et al., 1997; Johnson and Kroening, 1999). Hydrogen peroxide is highly important reactive oxygen species because of it ability to penetrate biological membranes. However, it may be toxic if

converted to hydroxyl radical in the cell by reacting with Fe^{2+} and possibly Cu^{2+} ions (Gulcin et al., 2003). This assay shows the ability of D. Microcarpum to inhibit hydrogen peroxide in the reaction mixture. From the results, it appeared that activities of the plant extract were nearly the same with the reference compounds. This could be due to the presence of phenolic compounds that donate electron to H_2O_2 and thus neutralizing it to water (Matthew and Abraham, 2006). Literature reviews confirm that triterpenoids, steroids, steroidal glycosides, flavonoids, and alkaloids are contained in this species (Jahan et al., 1995).

Conclusion

In conclusion, present results demonstrate that leaves extract of D. microcarpum has in vitro antioxidant activities due to the present of phenolic compound.However, it is recommended that further work be carried out in order to isolate and characterize the active principle(s) of the plant extracts.

Authors contribution

All authors contributed extensively to the work presented in this paper.

Conflict interest

The authors declares no conflict of interest

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EFFECTS OF CU/CO SUBSTITUTION ON ELECTRICAL PROPERTIES OF SODIUM MELILITE MATERIAL

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Abstract

The exploration and investigation of new sodium transition metal phosphates/arsenates have a promising field for various applications: electrical, piezoelectric, ferroelectric, magnetic, catalytic processes. Given their remarkable structural richness, in particular the melilite structure [1], these materials show several interesting physical properties, in particular ionic conduction and ion exchange. Many sodium-based materials have recently been prepared and tested for their electrical and / or electrochemical properties, such as sodium-based material with twisted-melilite structure [2]. These physicochemical properties are linked on the one hand to their structural wealth and on the other hand to the degree of openness of their anionic frameworks which can be dense, open or microporous. Thus, the investigation of this type of material requires a good correlation between crystal structure and electrical properties taking into account factors influencing electrical conductivity such as porosity and the temperature range of stability of the crystal structure of the sample.

In this work, synthesis and characterization of sodium cupper/cobalt diphosphate-diarsenate are carried out. The effects of Cu/Co substitution on structure and electrical properties were treated. Sodium pathways simulation are modelled using the Bond Valence Site Energy (BVSE) model to correlate structure and electrical properties. Thermal stability of cobalt material and copper compound using Thermal analysis are discussed.

Keywords: sodium-based material, Batteries, Ionic conductivity, Melilite structure

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

ELECRONEGATIVE MAGNETIZED PLASMA SHEATH WITH Q-NONEXTENSIVE ELECTRONS

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Abstract

Plasma sheath is the boundary region of charged particles between plasma and its surrounding wall. The study of this region in the presence of negative ions has lots of importance in many applications, in this work, we have investigated the structure of magnetized plasma consisting of q-nonextensive electrons, Boltzmann distributed negative ions and cold fluid positive ions. By using the Sagdeev potential method, we have derived the modified Bohm sheath criterion. It is shown that the modified sheath formation criterion depends on the degree of nonextensivity of electrons q, temperature of positive ions T_i, the normalized negative ion density c, the nonextensive electron temperature to negative ion temperature ratio β and the angle of the magnetic field θ. The sheath characteristics such as spatial profiles of charged particles density and electrostatic potential have been numerically investigated and examined by using 1D fluid model.

Keywords: negative ions, q-nonextensive electrons, magnetized sheath

Structural, magnetic and magnetocaloric properties of the $Sm_2Fe_{17-x}Ni_x$ solid solutions

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Abstract

Magnetic refrigeration could ultimately allow the replacement of the conventional refrigerator refrigerators, for obvious ecological factors and for its potentially greater efficiency. In the search of good magnetocaloric materials, the iron rich intermetallic Sm_2Fe_{17} compounds are considered to be very interesting candidates, due to their significant magnetocaloric properties. To that end, three samples with nominal compositions $Sm_2Fe_{17-x}Ni_x$ (x = 0; 0,25;0,35; 0,5) were synthesized by arc melting and subsequent annealing in a furnace at 1073K for a 7 days. Structural analysis by Rietveld method on X-ray diffractgrams have determined that these alloys crystallize in the rhombohedral Th_2Zn_{17}-type structure (Space group R-3m) and that the Ni substitute Fe in the 18h site.

Magnetic properties measurements revealed that the Curie temperature increases, while the unit-cell parameters decrease. For each sample, the isothermal magnetization curves have been measured, for different temperatures in the vicinity of the Curie temperature, with an applied field up to 1.5 T. Based on the Arrot plot, these analyses show that $Sm_2Fe_{17-x}Ni_x$ exhibits a second-order ferromagnetic to paramagnetic phase transition around the Curie temperature. These curves were also used to determine the magnetic entropy change ΔS_M and the relative cooling power. For an applied field of 1.5 T, ΔS_M increase from 1.5J/kg.K for x=0 to 4.9 J/kgK for x = 0,5. In addition the RCP increases monotonously. This is due to an important the temperature range for the magnetic phase transition, contributing to a large ΔS_M shape. Mossbauer spectra analysis was also performed, in order to confirm the site 18h as the location of Ni atoms in $Sm_2Fe_{17-x}Ni_x$ and the magnetization at saturation.

Keywords: Rare earth, Magnetization; Magnetocaloric effect, Mossbauer spectrometry

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

PHYSICOCHEMICAL STUDY OF NEW BROMO-COUMARIN DERIVATIVES

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Abstract

The 3-substituted-4-hydroxycoumarins present a class of fused-ring heterocycles and occur widely among natural products. Several natural products with the coumarinic moiety exhibit interesting biological and pharmacological properties. The bromination of these compounds increases their anticonvulsant activity which gives them pharmacological importance. Thus, as part of a study of the effects of substituents on the crystal structures of 3-acetyl-4-hydroxycoumarins, the structure of 3-(2,2-dibromoacetyl)-4-hydroxy-2H-chromen-2-one, has been determined. This compound is a new coumarin derivative obtained from the reaction of 3-acetyl-4-hydroxy-2H-chromen-2-one with bromine in acetic acid and characterized using spectroscopies methods. The crystal structure of the mentioned compound was resolved from single crystals. This structure crystallizes in monoclinic space group P2$_1$/n. In this crystal, the molecules are assembled in a head-to-tail overlapping manner as a result of the π–π interactions between the rings of the bicycle pack molecules into stacks along the b axis, and weak intermolecular C–H…O hydrogen bonds further link these stacks into layers.

Keywords: Coumarin derivatives, Bromination, structural study

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

MEASUREMENT OF NATURAL RADIOACTIVITY IN MAIZE AND ESTIMATION OF CORRESPONDING COMMITTED RADIATION DOSE TO AGE GROUPS

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Abstract

A major route through which radionuclide enter the human body is the food-chain. Consuming food that has been contaminated by this particles poses severe risk to human health. Measurement of natural radioactivity with corresponding estimation of committed radiation dose to age groups from consumption of maize crops cultivated in selected local government areas in Ekiti State, Nigeria has been carried out with the aid of a 76 mm by 76 mm Sodium Iodide detector doped with Thalium (NaI(Tl)), at the Center for Energy and Research Development, Obafemi Awolowo University, Ile-Ife, Nigeria. The mean activity concentration of ^{40}K, ^{238}U and ^{232}Th in the food samples were found to be 150.81 ± 12.43, 5.18 ± 0.15 and 8.04 ± 0.16 Bq kg^{-1} respectively while the committed annual radiation dose to infants, children and adults were 156.74, 176.90, 132.80 μSv yr^{-1} respectively. The Excess Life time Cancer Risks (ELCR) calculated were 0.55 x 10^{-3}, 0.62 x 10^{-3} and 0.47 x 10^{-3} for infants, children and adults respectively. All the values obtained in the study were within the limit set by UNSCEAR 2000. Consumption of maize crops cultivated in the study area therefore poses no severe risks to the consumers.

Keywords: Natural radioactivity, maize, effective dose, age groups, Nigeria

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

EXAMINING THE ORIGIN OF POLITICAL MARGINALIZATION OF WOMEN IN IGBO CULTURE

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Abstract
Contemporary and traditional Igbo society is said to be patriarchal. As a result, it has been claimed that it is a society where women are marginalized by men. While some scholars endorse this position, there are scholars who contest it. This study examines the claims of the later with specific reference to politics and culture. Particularly, it reviews the works of those authors who claimed that the active participation of women in the politics of traditional Igbo society before colonization introduced what they described as the perversion of pristine Igbo culture, showed that women were not marginalized in that society. The aim of the review is to ascertain firstly, whether traditional Igbo society treated women equal with men as these authors alleged. Secondly, to determine whether the marginalization that exist today in contemporary Igbo society is the consequence of colonial imposition. Based on the analysis, it was discovered that women were politically and culturally marginalized in both traditional and contemporary Igbo society, and that why colonization might have contributed to this, it was not the origin of the marginalization in current Igbo society. In the light of these findings, it was recommended that unjust political and cultural practices that are oppressive to women should be dismantled to encourage a better political and cultural participation of not only contemporary Igbo women but women the world over.

Key Words: Feminism, marginalization, Igbo society, women, politics and culture

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Analyzing Speech Act Patterns in President Akufo-Addo's Speech on Ghana's Enhanced Response against the Spread of Coronavirus

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Abstract

The world is facing a far graver medical emergency declared by the World Health Organization as a global pandemic (WHO, 2020). Grappling with that health crisis, the governments of all nations have taken strenuous measures to reduce or end up with its damaging effects. The current article intends to investigate into the speech acts patterns of the Ghanaian president, Akufo-Addo's sixth national address about his country's response to COVID-19 outbreak. Drawing on the Speech Acts Theory put forth by Austin (1962) and revised by Searle (1969, 1976), it specifically seeks to (i) identify the speech acts features encoded in the discourse at stake, and (ii) account for how the speech patterns deployed unravel the inner intentions of the president. The analysis proper carried out on the aforementioned discourse has disclosed outstanding insights about the way the Ghanaian president uses the English language to convey his message on his government's measures against the spread of coronavirus. As a matter of fact, it is discovered that the speech at stake contains four speech acts: Representatives, Expressives, Directives and Commissives. Declaratives are therefore nonexistent. It has also unveiled an overriding proportion of Representatives (31/61= 50.80%) over the other speech acts. The remaining three illocutionary acts follow in the aforementioned order with 16, 11, and 3 locutions of occurrence correspondingly. It can be inferred from the interpretation of the typified speech acts that President Nana Akufo-Addo has chiefly laid emphasis on two main categories of measure. These are preventive measures (tracing, testing, treating, protecting Ghanaians) and social and economic measures (absorbing electricity and water bills, supporting industry, enterprises and the service sector, distributing food items to the vulnerable and the needy).

Key words: Coronavirus, illocutionary act, pandemic, Speech Acts Theory

1. INTRODUCTION

The world is facing an unprecedented health crisis. Declared a public health emergency of international concern by the World Health Organization (WHO, 2020), the coronavirus pandemic is challenging governments worldwide, resulting in thousands of hundreds of deaths over the months. While several European nations (Italy, Spain, France, etc.) were overwhelmed by the crisis, African countries remained less affected. Based on that evidence, many African populations have ceaselessly likened the pandemic to a hoax; some arguing even that this is a new invention from western nations to keep holding control over the world. Boutaleb (2020) warns subsequently that "as in major global crises, misinformation can be a determining factor in the outcome of the crisis" (p.4). Yet, the worst has been predicted for Africa at the outbreak of the crisis. In this sense, Boutaleb (ibid) avers thus that while some international experts say that African countries do not have sufficient and appropriate resources to meet the demand, the WHO invited African countries to prepare for the worst. For the experts, the only chance Africa has to limit the rapid spread of the virus is to push populations into containment. Faced with the skepticism of their populations (mostly

illiterate), African governments use various channels of communication to spur people to take the current pandemic seriously and abide by the measures taken or envisioned as a response against the virus. In that perspective, many heads of states personally deliver official speeches to arouse their citizens' attention. In this paper, we endeavor to cautiously scrutinize the Ghanaian president, Nana Akufo-Addo 's sixth national address about his measures against the spread of the coronavirus. To reach that purpose, we choose to apply the Speech Acts Theory devised by Austin (1962) and revised by Searle (1969, 1976) to the above-mentioned speech. We intend, through this, to (i) identify the speech acts features encoded in the discourse and (ii) account for how the speech patterns deployed unravel the inner intentions of the president. Only a practical pragmatic analysis of the speech under study will help meet the aforementioned objectives. However, the conceptual and theoretical frameworks that underpin the current research work need to be touched on.

2. AN OVERVIEW ON THE CORONAVIRUS PANDEMIC
It should be noted, before any analysis whatsoever, to get insightful information on the health emergency that is the concern of the speech at stake. Therefore, such background knowledge about the virus, namely its epidemiology and causes, its symptoms and prevention/treatment, is a necessary condition to efficiently indulge in the analysis proper.

2.1. Epidemiology, Causes, Transmission, and Symptoms
Conronaviruses (CoVs) belong to the Coronavirinae subfamily in the family Coronaviridae of the order Nidovirales, and this subfamily includes four genera: alphacoronavirus, betacoronavirus, gammacoronavirus, and deltacoronavirus (Rodriguez-Morales et al., 2020).

This new virus seems to be very contagious and has quickly spread globally. Declared a Public Health Emergency of International Concern by WHO on 30 January 2020, the outbreak has spread to 18 countries. An additional landmark occurred on 26 February 2020, as the first case of the disease, not imported from China, was reported in the United States. On March 11, the number of COVID-19 cases outside China increased 13 times and the number of countries involved has tripled with more than 118, 000 cases in 114 countries and over 4, 000 deaths (Cascella *et al*., 2020). Drawing on this, WHO declared the COVID-19 a pandemic.

Turning to the situation on the African continent in particular, it has been reported that a steady increase in the number of cases has been observed in the WHO African Region since the first case of COVID-19 in Algeria on 25 February 2020. All Member states have since been affected, except Comoros and Lesotho where there have been no official reports of confirmed cases to date. Figure 1 below displays the daily distribution of cases by date of reporting.
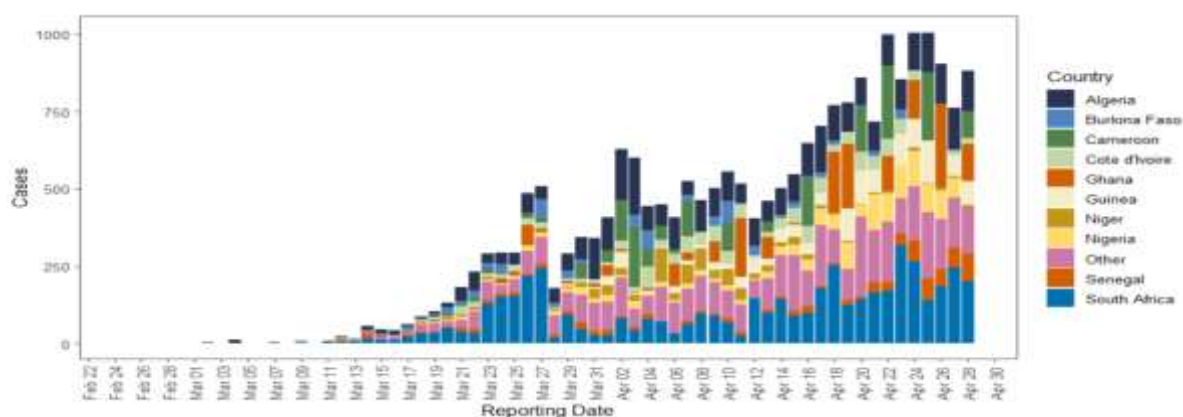
Figure 1: Daily number of confirmed COVID-19 cases in the WHO African Region by country, 25 February –28 April 2020 (*n*=22 376) (*External Situation Report 9*: 4)

Out of the 45 affected countries, WHO African Region *External Situation Report 9* notes, 10 (22%) reported over 500 cases, 14 (31%) reported between 100 and 499 cases and 21 (47%) reported fewer than 100 cases. Seven countries have registered more than 1 000 confirmed COVID-19 cases, including, South Africa (4 996), Algeria (3 649), Cameroon (1 705), Ghana (1 671), Nigeria (1 337), Guinea (1 240) and Côte d'Ivoire (1 164).

Among the countries with widespread transmission, the reports mentions, the highest case fatality ratios were observed in Algeria (12.0%), Liberia (11.3%), Burkina Faso (6.6%), Democratic Republic of Congo (6.1%) and Mali (5.7%). It is however important to seek to know how the virus is caused, transmitted, and manifested clinically.

As a matter of fact, it is stated that the disease is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Sustained human-to-human transmission of 2019- nCoV is claimed to be one of the most important issues that could explain the scale of the Wuhan outbreak.

According to Adhikari et al. (2020), three main transmission routes for the COVID-19 were described by the latest guidelines from Chinese health authorities: (1) droplets transmission, (2) contact transmission, and (3) aerosol transmission.

Talking of the symptoms, they are similar to those from other respiratory viruses, and include fever, cough, myalgia or fatigue, pneumonia and complicated dyspnea as the most commonly reported ones. On the other hand, less common reported symptoms consist of headache, diarrhea, hemoptysis, runny nose and phlegm-producing cough. Patients with mild symptoms were reported to recover after 1 week while severe cases experience progressive respiratory failure due to alveolar damage from the virus, which may lead to death.

2.2. Prevention and Treatment

In view to handling the Coronavirus Disease 2019, a series of public health measures that may prevent or slow down the transmission of the virus has been put forward. These include case isolation, identification and follow-up of contacts, environmental disinfection, and use of personal protective equipment. From these, Biscayart *et al.* (2020) claim that contact and respiratory precautions are the only effective measures to prevent the virus. This suggests that the use of isolation is the best weapon to contain this pandemic.

As for the treatment, to date, there is no specific antiviral treatment recommended for COVID-19, and no vaccine is currently available. The treatment is symptomatic, and oxygen therapy represents the major treatment intervention for patients with severe infection. After this glance at the dreadful virus and common enemy, let us now look at the theory that underpins the current research endeavor, as well as the methodology that guides it.

3. THEORETICAL UNDERPINNING AND METHODOLOGY

3.1. Theoretical Framework

Pragmatics is the linguistic backcloth of the present scholarly work. Although there is a wide range of definitions of the concept, it is agreed upon that pragmatics is one of the major fields of linguistics that disclose meaning in language use. According to Thomas (1995), pragmatics is meaning in interaction. It follows then from this, as buttressed by Green (1996), that pragmatics is the branch of linguistics which deals with the relation between signs and users and interpreters. In other words, pragmatics is concerned with the study of the relationships between linguistic forms and users of these forms. Yule (1996) rather provides in four points a synthetic account of the areas pragmatics is interested in:

(i)   Pragmatics is the study of speaker meaning;
(ii)   Pragmatics is the study of contextual meaning;
(iii)   Pragmatics is the study of how more gets communicated than is said;
(iv)   Pragmatics is the study of the expression of relative distance (between speakers and listeners).

From the above, it can rightly be claimed that pragmatics, as a whole, has to do with the analysis of what people mean by their utterances. In a more precise way, speech act theory is the linguistic framework that specifically deals with utterances. Developed in the 1960s by a group of British language philosophers, and more particularly J. L. Austin, speech act theory focuses on acts performed in making utterances. As the name implies, speech act theory treats a given utterance as an act performed by a speaker in a context with respect to an addressee. Thomas (Op.cited) stresses that the term 'speech act' was originally used by Austin to refer to an utterance and the 'total situation in which the utterance is issued' (p.51). As for Cutting (2002: 16), speech acts were initially defined by Austin (1962) as the actions performed in saying something. In fact, Austin (1975) reasonably states that "the issuing of an utterance is the performing of an action" (p.7). From this, Austin makes a three-fold distinction, claiming that performing a speech act involves performing:

(a) A *locutionary act*: the actual words uttered, what is said, the form of the words uttered:
(b) An *illocutionary act*: the force or intention behind the words, the act of saying something, what the speakers are doing with their words:
(c) A *perlocutionary act*: the effect of the illocution on the hearer, what is done by uttering the words, the hearer's reaction.

Austin (1962) typified illocutionary acts into five classes. Later on, Searle (1975) "think[s] that the taxonomy needs to be seriously revised because it contains several weaknesses" (p.7). He then suggests an alternative classification as follows:

❖ Representatives (Assertives): the point or purpose of the members of the representative class is to commit the speaker (in varying degrees) to something's being the case, to the truth of the expressed proposition. They are acts in which the words state what the speaker believes to be the case such as *describing*, *claiming*, *hypothesizing*, *insisting*, *predicting*, etc.

❖ Directives: the illocutionary point of these consists in the fact that they are attempts by the speaker to get the hearer to do something. Verbs denoting members of this class are *ask*, *order*, *command*, *request*, *beg*, *pray*, *entreat*, *invite*, *permit*, *advise, suggest, forbid*.

❖ Commissives: they are those illocutionary acts whose point is to commit the speaker (again in varying degrees) to some future course of action such as *promising*, *vowing*, *offering*, *threatening*, *refusing*, *volunteering*.

❖ Expressives: the illocutionary point of this class is to express the psychological state specified in the sincerity condition about a state of affairs specified in the propositional content. The paradigms of Expressive verbs are *thank*, *congratulate*, *apologize*, *condole*, *deplore*, and *welcome*.

❖ Declarations; it is the defining characteristic of this class that the successful performance of one of its members brings about the correspondence between the propositional content and reality, successful performance guarantees that the propositional content corresponds to the world: if I successfully perform the act of appointing you chairman, then you are chairman. Declarations are included in the class of performatives (as opposed to constatives).

It is expedient, at this level of the study, to shed light on the methodology adopted in the frame of this research work.

3.2. Methodology

In a bid to reach the objectives assigned to this work, I select the speech delivered to his country citizens by president Akufo-Addo about COVID-19 on 9th April 2020. The speech is downloaded from the internet and analyzed to disclose the speech acts performed by the president in the course of delivering it. In that sense, the speech has been parsed into constituent locutions. As above mentioned, the linguistic approach that underpins the current study is pragmatics, and more specifically the Speech Acts Theory put forth by Austin (1962) and revised by Searle (1969/1976). So, the locutions are numbered and labelled following Searle's (1969/1976)'s taxonomy. It should be stressed here that the following abbreviations are used for the

identification of the locutions: Rep (Representatives), Dir (Directives, Com (Commissives), Ex (Expressives), Dec (Declaratives).

In addition, the mixed methodology as suggested by Dörnyei (2007) has been adopted. It combines both qualitative and quantitative methods. As far as the quantitative method is concerned, the different speech acts are identified and their corresponding statistics are carefully displayed. These statistical results are qualitatively analyzed and interpreted to account for the 'speaker meaning' (Yule 1996/2010, Thomas 1995) of the discourse. The next section will be devoted to the practical analysis of the speech under study and the interpretation of the results.

4. PRAGMATIC ANALYSIS AND INTERPRETATION OF THE FINDINGS
4.1. Analysis and Comments

At the outset, it should be noted that for space constraints, the detailed thorough analysis of the speech cannot be displayed here. However, the utterance-to-utterance analysis of president Akufo-Addo (April 9th, 2020)'s address, is summarized in table 1 below.

Table 1: Speech acts Identified in the Address

Speech acts	Representatives (Rep)	Directives (Dir)	Commissives (Com)	Expressives (Exp)	Declaratives (Dec)	Total
Locutions of utterances	(1), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (20), (21), (25), (26), (27), (28), (31), (32), (34), (38), (39), (43), (48), (50), (51), (56)	(22), (23), (33), (35), (36), (49), (52), (53), (54), (55), (57)	(17), (29), (30),	(2), (18), (19), (24), (37), (40), (41), (42), (44), (45), (46), (47), (58), (59), (60), (61)		
Total	31	11	03	16	0	61

A cursory analysis of the above table exudes four speech acts among the five put forth by Searle (1969/1976). They are representatives, directives, commissives, and expressives. Declaratives are absent from the speech. In order to facilitate the reading of the table above, the following graph is conceived of.
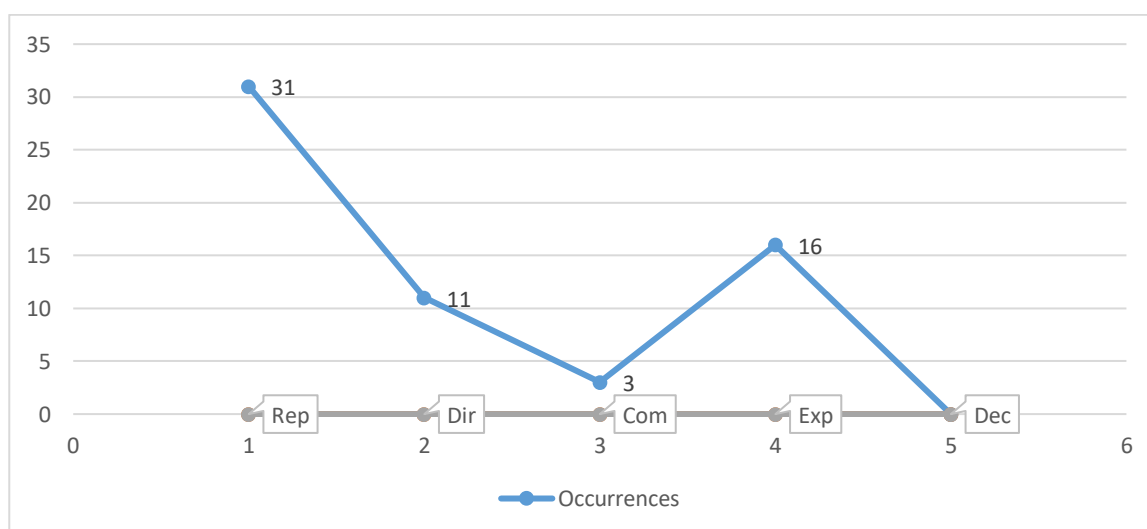
Figure 2: Graphological Representation of Speech Acts in President Akufo-Addo's Adress on COVID-19

It is discernible from the graph and table1 above that Representatives top in the president's speech with 31 occurrences. They are followed with Expressives which rank second with 16 instances. Directives occupy the third position, turning up 11 times. At last, Commissives take up the rear with only 3 utterances. As signaled earlier, Declaratives are non-existent. It logically follows from this that only the four recorded speech acts are going to undergo the interpretive phase below.

4.2. Interpretation of the Findings

It should be underscored that the interpretive stage will take account of the numerical importance of the speech acts. That is, Representatives will be interpreted first; then will follow Expressives, Directives, and Commissives in that order.

4.2.1. Interpretation of Representatives

The high proportion of Representatives (31/61= 50.82%) indicates that the Ghanaian president's address is mostly made of assertions of proposition. A cautious scrutiny of the recorded Representatives discloses that they are made of five different kinds: stating (1, 3, 11, 12, 20, 32, 38, 39, 43, 48, 51, 56), announcing (4, 6, 7, 8, 9, 10, 13, 14, 15, 16, 21, 27, 28, 31, 34), describing (50), claiming (5) and reporting (25, 26). Stating and announcing (the most dominantly representative locutions) are referred to by the president to stress, argue, contend, or inform about (i) the efforts made to combat the Coronavirus, and (ii) the implemented measures aiming at containing and defeating the disease.

Talking of actions taken in view of reducing the spread of the epidemic, the orator starts clarifying that government's policy will mostly be supported by science (3), i.e., they will rely on data, with a special attention on the 3-Ts, viz. tracing, testing and treatment (4). Having said this, the president evidenced his remaining assertions with statistical figures. As a matter of fact, 105 of the confirmed cases are recorded from those who were mandatorily quarantined and tested on their arrival (6), 192 of the cases came from travelers and their contacts (7), meaning 79% of the 378 confirmed cases are thus imported (8). Drawing on those data, it is cogently decided that borders still remain shut until further notice (10).

Moreover, it has been argued that a more aggressive programme of enhanced contact tracing has been facilitated by the partial lockdown of Accra and Kumassi (11). Thus, of some samples taken in these two cities, 77 positive cases were counted, which amounts to 0.53% of the 14 611 tested (16). Acknowledging that the results are encouraging (17), the speaker nevertheless avers that the fight is not yet over (20). To account for his claim, he reminds his compatriots of the current endemic situation in the country: over the 378 confirmed cases, there are 6 deaths, 4 recoveries, and the remaining 370 are mild cases put in isolation (21).

As for the "measures to mitigate the effects of the pandemic on the social and economic life" (26), Akufo-Addo has enumerated a series of them. In actuality, water bills will be supported by Government for the next three months (26), water tankers will supply water to vulnerable communities (27), electricity bills are entirely going to be fully absorbed for the poorest of the poor (29), fifty percent of all other consumers' electricity bills will also be absorbed by Government (31). These alleviating measures ultimately aim at "support[ing] industry, enterprises and the service sector... to provide some relief to households for lost income" (32). Besides, the food items being distributed in Accra and Kumasi to the vulnerable and needy are well remembered (34).

As far as reporting is concerned, it is concerned here with restating what has been decided, not by an individual, but by an organ or an institution. Thus, Akufo-Addo reports in locution (25) the decision taken, through the issuance of an Executive Instrument, to extend the restrictions on movement in the Greater Accra Metropolitan Area and Kasoa and the Greater Kumasi Metropolitan Area and its contiguous districts by one more week (25). By the same token, he passes on the information of the Government to "absorb water bills for all Ghanaians for the next three months, i.e., April, May, and June (26).

Turning to describing, it has been deployed to relate, as a flashback, people's actions in times of normalcy, i.e., the period before the outbreak of coronavirus. Hence, the speech producer reminds that "we are used to attending Easter Conventions, making-merry, visiting friends and family, and having a good time" (50). At last, drawing on the available reliable statistics, the president lucidly claims in (5) that the Government is right to take the decision to close down the borders.

Conscious of the sacrifice from/by everyone at such a critical moment, the president merely gives voice, whenever need be, to his inner feelings via expressive speech acts.

4.2.2. Interpretation of Expressives

Expressive locutions are meant to indicate the "speaker['s] attitude towards a state of affairs" (Croft, 1994). They are deployed in the speech to express pleasure (2), satisfaction (18, 19), hope (24), sorrow (37, 40, 41, 42), gratitude (44, 45, 46, 47,), wish (58, 60), gratefulness and wish (59, 61).

As a good politician, president Nana Akuffo-Addo begins his address, telling his compatriots "how proud and privileged" (2) he is as their President to fight for and with them to contain the spread of covid-19. This is a strategic move to give his countrymen assurance that this a priori harmful health crisis can be overcome. Then, in the light of the progress registered in terms of the scientific delivered data about the pandemic, he displays his satisfaction to "have been modestly successful in containing the virus and minimising its spread" (18). This, according to him, is the result of the hard restrictions measures taken from the first day, which have contributed to "have saved a lot of lives" (19). Reminding however his addresses of the necessity to keep on complying with the restrictive measures, he nevertheless showcases his hope to get "freedom from the virus" (24) in the last resort.

Yet, the speaker openly deplores the unfortunate incidents of those who have attempted to flout the regulations "to the extent of confronting members of the security services" (37). He then regrets the absence of some of 'the blessings of normalcy': "the health of those we love, the freedom to work and to congregate, the luxury of spontaneity, and the simple comfort of a handshake or a hug" (42). Then, those who have shown a sense of solidarity have been thanked for their kind and heartfelt action. These are "the People's Republic of China, the United States of America, the African Union, the African Development Bank, the International Monetary Fund, the World Bank, the European Union, and the Jack Ma Foundation" (44). Besides, all the donators via the COVID-19 National Trust Fund have been expressed acknowledgement "for th[eir] kind gesture" (47). Finally, the president wishes, on behalves of his entire family and the members of his Government, "a joyous and happy Easter" (58) to everybody. A special wish and gratefulness has gone to the direction of "our amazing health workers and … the members of our security agencies" (59). In the same vein, the president expresses everyone "a good evening" (61) and meanwhile thanks them for their attention.

4.2.3. Interpretation of Directives

Viewed by Searle (1976) as attempts by the speaker to get the hearer to do something, Directives appear in the speech to denote ordering (22, 53, 54, 55, 57), inviting (23, 33, 35, 52), and requesting (49).

Ordering or commanding are imperative sentences directed at asking Ghanaians not to get fed up of observing their "continued patience" (22) as regards the restrictions. Therefore, they have to "stay at home" (53), "keep [their] distance from [their] parents, grandparents and extended family, and celebrate this holiday apart" (54). They must not also "host a big family gathering, and sternly refuse to attend one if …invited" (55) to.

Inviting, as one could guess, appears as an appeal to everyone to willingly carry out the right actions required by the prevailing situation. In that respect, and referring to the sacrifices to make, the president is humbly calling on every Ghanaian to "stay the course and bear with the difficulties [associated] with it" (23). Ghanaians are also urged "to exercise discipline in their use of water and electricity" (33) once they've been told these basic needs are going to be subsidized by the Government. Focusing on the limitations the health

crisis is imposing on everybody, the speaker urges every citizen "to do the exact opposite of what [they] have been used for many years" (52). Eventually, the president attempts to alleviate the effect of the order in (35) through the use of the entreating clause "I appeal to you", and nonetheless authoritatively asks his compatriots "to comply with the measures", to "maintain good hygiene and respect the social distancing protocols, even" while "going out to receive the food".

Requesting is a type of directive speech act which aims at getting the hearer to do something in a polite way. It is an indirect speech act. For Searle (cited in Cutting 2000: 19), someone using an indirect speech act wants to communicate a different meaning from the apparent surface meaning. Thus, the declarative form "the season is a good opportunity for all of us to reflect on that ultimate sacrifice, and for each one of us also to make a sacrifice for the sake of humanity's survival" (49), actually suggests an order, meaning 'let's reflect on that ultimate sacrifice, and make a sacrifice for the sake of humanity's survival". Here, the order takes the form of a *suggestion* as it is concerned with both the listeners and the speaker. There are, however, specific cases where the producer of the speech decides to take some actions by himself. These speech acts known as Commissives are examined on in the next subset.

4.2.4. Interpretation of Commissives

Although not so outstanding in the speech as the foregoing illocutionary acts (3/61=4.92%), Commissives are nevertheless worth exploring. Regarded as acts whose point is to commit the speaker to a course of action (Horn & Ward, 2006: 64), Commissives are resorted to in the discourse to "express what the speaker intends" (Yule, 1996: 54). They are mainly used to indicate promise (17, 29, 30). As a matter of fact, spurred by the encouraging results which lead to the decrease of the number of positives and community spread, president Akufo-Addo proudly voices his intention "to test some ten thousand additional samples in the coming week" (17). Later on, he takes advantage of the Government's decision about further measures of mitigation, to make the oath to "fully absorb electricity bills for the poorest of the poor" (29) and "absorb, again, fifty percent of [all other consumers, residential and commercial's] bill for this period" (30). It follows then that commissive locutions in the address refer on the one hand, to what the president is planning to do to stop the epidemic from wreaking havoc, and the social and economic actions he envisions to take on behalf of the populace.

5. CONCLUSION

Drawing on the Speech Acts Theory devised by Austin (1962) and improved by Searle (1969, 1976), this study was undertaken with the purpose of exploring the speech acts features of the Ghanaian president, Akufo-Addo's sixth national address about his country's response to COVID-19 epidemic. A cautious utterance-to-utterance analysis based on Searle's taxonomy has disclosed in all four speech acts in the speech at stake: Representatives, Expressives, Directives and Commissives. Declaratives are therefore nonexistent. It has also unveiled an overriding proportion of Representatives (31/61= 50.82%) over the other speech acts. The remaining three illocutionary acts follow in the aforementioned order with 16, 11, and 3 locutions of occurrence respectively.

Overall, it can be assumed from the whole study that in his sixth address to the nation about the novel coronavirus 2019, President Nana Akufo-Addo has mainly laid emphasis on two main types of measure. These are preventive measures (tracing, testing, treating, protecting Ghanaians) and social and economic measures (absorbing electricity and water bills, supporting industry, enterprises and the service sector, distributing food items to the vulnerable and the needy). Such measures are rightly in line with Zhou (2020)'s claim that: "given the fact that no effective medicine is available for viral infectious diseases, the preventive measures including control of the source of infection, early detection of patients, cutting off transmission, and protecting susceptible population are paramount" (foreword). They are also consistent with

the WHO Director-National, Tedros Ghebreyesus (2020)'s appeal to "come together in solidarity to fight this common enemy".

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

ARE LEADERS BORN OR MADE? A DISQUISITION ON THE TRAIT AND CHRISTOLOGICAL PARADIGMS OF LEADERSHIP

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Abstract
The scientific study of leadership actually begun in the 20th Century, though, the word "leader" has been in public lexicon since the 1300s. In spite of the fact that people have exhibited leadership in various climes and times, the development of scientific understanding of leadership was actually initiated with the emergence and evolution of the different theories of leadership. The Trait and the Christological models of Leadership which constitute the subject of our examination are some of the paradigms propounded to explain the concept of leadership. The trait model of leadership avers that the possession of certain innate traits is what qualifies for leadership, hence a person is potentially a leader if he or she is born with some predisposing traits. The Christological model, in the alternative, posits that a leader is made via serving as a servant. Thus, leadership in the Christological model is synonymous with servanthood. The prime foci of this paper include doing a thorough discursive unveiling of the tenets of these leadership models and subsequently subjecting those tenets through the anvil of philosophical scrutiny so as to test their reasonableness in the light of philosophical disquisition.

Key words: Leadership, Traits, Christological, Model, Disquisition

DECOLONIZING EDUCATION; A CRITIQUE OF THE COLONIAL UNDERPININGS OF NIGERIAN EDUCATION POLICIES

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Abstract
The paper engages in a historico-critical appraisal of Nigerian education policies to show how it has not broken links with its colonial past, even after years of political independence. It divides Nigerian educational policies into the pre-colonial, colonial and post-colonial. It is argued that the colonial education policies where based on the philosophy of cultural exclusion, dehumanization and economic exploitation. It is further argued that the Nigerian post-colonial education policies with its over emphasis on basic education without a commensurate emphasis on higher education and research, especially into local contents for self rediscovery after many years of dehumanizing colonial encounter is a continuation of the colonial policy of education. This policy which is geared towards making the student literate enough to read and write is not enough to form critical thinkers who can develop innovative ideas and technology to propel a genuine development of the Nigerian society. The conclusion is that our education policy should emphasize more on developing of local contents through higher education research and teaching. Our understanding of basic education should be reversed from the imperialist model that inculcates western values as a basic universal value that should be embraced by all, to one that fosters the relevance of local values and indigenous heritage.

Keywords: Education, policy, decolonization, indigenous values, cultural exclusion

1. Introduction:

Some years ago, when this researcher studied African Philosophy as a first year student, he was fascinated by this topic "the Great Debate". He was particularly impressed with the way indigenous African scholars such as T. Okere and A. Uduigwomen held their grounds and marshalled out their reasons on the existence of a reality called African philosophy. For instance, in a particularly telling note of victory, Uduigwomen declared that the Great Debate ended in favour of the existence of African Philosophy. Accordingly, (Uduigwomen 2002:3) argued that:

> The debate or controversy on whether or not there is an African philosophy is dead and buried. At best it is a matter of mere historical interest. When the history of African philosophy shall be properly articulated, a chapter or two will do justice to it, since there is now an established tradition of African philosophy. The subject 'African Philosophy' is presently being taught either as self-subsisting course or as part of comparative philosophy in many African universities. A number of theses have been written on it by both undergraduate and postgraduate students. In addition, a good number of journal articles and

textbooks have been or are being published on it. We acknowledge the pioneering efforts of such African scholars as P. O. Bodunrin, J. O. Sodipo. J. I. Omoregbe. K. Wiredu, K. C. Anyanwu, Odera Oruka, P. Hountondji, C. S. Momoh, B. C. Okolo, I. Onyewuenyi, Sophie Oluwole, and a host of others. These scholars have done a lot to promote African philosophy.

However, in spite of this declaration, Uduigwomen still acknowledges that "… a major area of disagreement among African philosophers is what really is African philosophy?" (*Ibid*). During this period that immediately preceded the 'great debate', Uduigwomen and advocates of African philosophy devoted their intellectual energy trying to define the nature and meaning of African philosophy.

Basically, the controversy was between the Universalist or Professional and the Particularist Schools of African philosophy. The universalist or professional school ably represented by P. O. Bodunrin, Kwasi Wiredu, Odera Oruka and Paul Hountondji is of the view that philosophy is the same everywhere, using the same methodology. Hence, they advocate that for a thing to be considered as philosophy it must fulfil at least three basic canons, namely, (a) it must be universally applicable. By this they mean that the issues it must discuss must have universal relevance. In other words, it must treat fundamentally problems that cut across geographical boundaries. (b) In addition, for something to be characterized as philosophy, it must be self-critical. In other words, it must adopt criticism and argumentation as method of assessing problems. (c) Once more, they advocate that analysis should be adopted as a tool of doing philosophy. By this they mean that as a philosopher one should be able to state his/her case analytically to avoid confusions.

On the other hand, the Particularist school averred that for philosophy to worth its salt, it must be culturally oriented. In other words, they contend that local relevance should be the guiding principle in philosophy. This school goes on to argue that the absence of documentation or writing in African history is not enough ground to deny African philosophy. For them, people like Socrates did not leave evidence of writing, yet they are still credited with certain philosophical achievements. They pointed out that despite the fact that writing is the best means of transmitting information; it is not the only channel of articulating information. Such means include proverbs, religion, folklores, mythologies, oral and so on.

On the whole, the basic argument of these African scholars was that Africa as opposed to the individualistic anthropology of Europe has a communalistic understanding of Personhood. An instance of people who propagated this communalistic understanding of Personhood is J S Mbiti. Mbiti sums his view of Personhood, thus:

> In traditional life, the individual does not and cannot exist alone except corporately. He owes his existence to other people, including those of past generations and his contemporaries. He is simply part of the whole. The community must therefore make, create or produce the individual; for the individual depends on the corporate group. (Mbiti, 1997:107)

The problem with this understanding of personhood is that it champions a notion of personhood where the individual is diffused into the community being that he is not identified as a single entity. In other words, the individual cannot be distinguished from the community. As such there is no

autonomy of the individual person. It is this discovery which the researcher saw that ignited the desire to fashion out an understanding of personhood which is all inclusive.

In the light of the foregoing this work will address these and more questions: 1. Does Mbiti's communalistic understanding of personhood represent a true notion of personhood for Africans? **2.** Is the denial of individual autonomy in this communalistic understanding properly African?

2.   Afrocentric notion of personhood

The construction of the notion of African personhood is a consequence of the demeaning stance of the Europeans against Africans. Most Europeans advanced and propagated the notion of personhood that is anti-African. For instance, some scholars were of the opinion that Africans are subhuman, while others opined that Africans lacked the power of rational thought. These demeaning stance were the non-philosophical wonder that triggered the notion of African personhood. Ike Odimegwu rightly affirms that "the question of what is a human person for the African philosopher is a development from the more particular question of whether the African is a human person…" (Odimegwu, 2008: 113).

The African model of personhood can be approached from two perspectives as theorized by Kwasi Wiredu. On one side is the normative approach, on the other hand is the descriptive approach (Onah, 2004:74). While the descriptive or ontological aspect classifies and describes the attributes and qualities i.e. the constituent parts – physical aspects of the person, the normative seeks to prescribe the norms or standards that qualify for personhood within the African purview. Asadu, G.C in his work *A Critical Examination of African Normative Notion of Personhood: Implications for Abortion* is of the view that the normative notion of personhood can be summarised under three sub-themes thus, "1. community defines a person, 2. Personhood is achieved through performing worthy social obligations, 3. personhood does not depend on being born of human seed." (Asadu, 2020)

Africans have no unified model of what constitutes the person since there exists some discrepancies across the different cultural contexts. Yet, there are some basic similarities, while these discrepancies are negligible since they bother on the primacy of the constituting elements.

However, it is pertinent for us to note that whether it is descriptive or normative notion that one adopts, it finds meaning within the community, hence the essence of the community in understanding the concept of personhood cannot be overemphasised. Again, scholars argue that a person can be fully understood and is animated through communal relations as well as attainment of moral worth. A person who operates outside his community, it is argued, is not a full person. African philosophy presents the African view of a person in a way that is essentially communitarian.

3.   Mbiti`s Communalistic notion of Personhood

Ike Odimegwu while reviewing Mbiti`s notion of personhood in his work "*Integrative Personhood: A Communalist Metaphysical Anthropology*" pointed out that many scholars are of the opinion that Mbiti is the foremost African scholar to propagate the idea of communalistic notion of personhood. Whether this is true or not is not within the scope of this essay. John Mbiti in his work *African Religions and Philosophy* expounds the idea that African Person is a community-being. He stated that it is within the community that the African finds meaning. He asserts:

> In traditional life, the individual does not and cannot exist alone except corporately. He owes his existence to other people including those of past generations and his contemporaries. He is simply part of the whole. The community must therefore make, create or produce the individual; for the individual depends on the corporate group. Physical birth is not enough: the child must go through rites of incorporation so that it becomes fully integrated into the entire society. These rites continue throughout the physical life of the person, during which the individual passes from one stage of corporate existence to another. The final stage is reached when he dies and even then he is ritually incorporated into the wider family of both the dead and the living (Mbiti, 1997).

Thus, Mbiti thinks the individual's links to the community are of such an enduring nature that they cannot be separated from her own existence. The community also has a role in ensuring that the individual is indeed transformed into a real person. For Mbiti, biological birth alone is not enough. There has to be some induction into all the stages that he calls 'corporate existence', and an individual cannot do that induction on her own, she requires the assistance of her fellow human beings in her community to attain that existence. "It is a deeply religious transaction. Only in terms of other people does the individual become conscious of his own being, his own duties, his privileges and responsibilities towards himself and towards other people" (*Ibid*)

The emphasis that Mbiti frequently points out is that the individual is never alone. He is a communal being who finds oneself in a community of people who share with him in his agonies and joys. Mbiti opines that when the individual suffers he will not be alone, and when he marries, his kinsmen are there to celebrate with him, even the children that he bears are never just his alone but belong to the whole community. The place of the individual in the community is a strong membership of that community which is constitutive of his identity and governs the way he leads his life. One cannot think of the individual without thinking of the community. The symbiotic relationship that exists between the individual and the community is inseparable and neither can do without the other. It appears as if it would actually become incoherent to speak of either without speaking of the other as this quote from Mbiti shows: "Whatever happens to the individual happens to the whole group, and whatever happens to the whole group happens to the individual. The individual can only say: `I am because we are; and since we are, therefore I am.` This is a cardinal point in the understanding of the African view of man" *(Ibid)*. Consequently, Ike Odimegwu suggests that, "Mbiti sees the African person as a product of the community, as a part of the whole which owns and regulates him from birth to death, and even to after death, through its rites and norms. The African person is defined by being-in-the-community, and personhood is realized through progressive incorporation and integration into the life and being of the community" (Odimegwu, 2008).

4.   The Integrative Notion of Personhood

The aim of the integrative notion of personhood is to mediate between the western individualistic anthropology and the African communalistic anthropology. In view of this, Ike Odimegwu posits that "a number of African philosophers have criticised western Metaphysics of over-emphazing the individual, while a number of western scholars have viewed the African communalist personhood

as deprived of individuality and autonomy. We seek to develop a theory of the human person that does not get suffocated in his individualistic cocoon or another who becomes diffused in the community being so much so that he is not identifiable as such therefrom" *(Ibid)*. Having said this, let us look at the constitutive elements of integrative personhood to see whether it can resolve the challenges pointed out above.

5.1 The basic constitutive elements of personhood
There are three basic constitutive elements of personhood viz; individuality, communality and presencing.

5.1.1 Individuality
The human person is basically an individual being whose awareness of himself is that of unique and separate being. The uniqueness and individuality of the being of the human person is constituted by the essential factors of situatedness, circumstance, existence, corporeality, particularity, unity, reflexivity of presence and possessiveness of being. All these attributes in an inter-inclusive manner make the individual or the self. Situatedness reflects the fact that the human person finds himself in the spatio-temporal realm, he finds himself occupying a space at a particular time. This consciousness is established in and comprises the intersection between space and time. Significant is the fact that the situatedness of the human person is essentially different from the situatedness of a thing; for, while the situatedness of a thing is unknown to it and is just a mere location within the ambit of the spatio-temporal realm that of the human person is a conscious situatedness. The consciousness of the situatedness brings to the fore the reality of the circumstance of his existence, which is an event of his being. Circumstance in this wise becomes the person`s creation i.e. what the human person makes of his situation. Being situated is presupposed and is consequent upon the human person`s corporeality. To be corporeal means not to be divine or infinite but to be mortal, having a body and extension which occupies space and exist in time yet not being coterminous with them. In perceiving or presencing of other beings to it, the human being is awakened into the reality of his particularity while the coordination of the afore-mentioned activities of presencing and perception shows the unity of being of the human person.

5.1.2 Communality
The individuality of the person makes more meaning and is realized within the context of a community. This is because, a human person`s being is made more real and is defined through subsequent interaction with other beings within the community around. Through such interaction, the being forms another basic constituent of himself which is self-consciousness. Indeed, one can argue that one`s consciousness of oneself is acquired and derived from the awareness of other beings. Hence it would seem that the 'I' which I perceive as constituting 'me' is reflected from yourself or from the self that is you or in you (*Ibid*). The community into which the human person is born is essentially a spiritual communion and as such extends into the psychological and psycho-spiritual realm thus, bringing the human to the awareness of his physical and mystical features. Within this context community becomes characterized by the union, possession and belonging, vitality and outgoing activity. Little wonder Aristotle talks of the human as a *homo politikos*. Consequently, the communal aspect of the human person is indispensable.

5.1.3 Presencing

Presencing is an indispensable and conclusive defining factor of the human person. This is because it is through the act of presencing that the human being comes to the realization of his individual and communal natures. Precisely, presencing is a conscious act through which the self becomes aware of itself and other beings by stepping out from and returning to itself in an inter-inclusive relationship with other being. By presencing we mean in simple terms just consciousness. The act or element of presencing is revealed by the intendency of human existence. Intendency here is "the vital truths about the human person revealed and implied by his situatedness – his limitedness or what has been aptly described as the neediness of the human person" (*Ibid*, 121). The neediness or limitedness of the human person brings to the fore the insufficiency that pervades the human self; hence, the self is always outgoing or reaching out, going into relations with other beings and is forward–looking and always transcends the present. For these reasons, intendency (insufficiency and neediness) is both a cause and a consequence of the communality of the human individual. It develops in three stages that includes neediness, futurity and intentionality. These processes distinguish intendency from mere tendency or abstract intentionality which is devoid of choice or purpose.

5. Critique of Mbiti`s notion of personhood

So far, we have been trying to sketch an integrative person whose being transcends the hitherto communal being, that is created, produced, defined and owned by a given community. Bearing in mind the vision of this work, the effort here is to establish the superiority of integrative person over Mbiti`s notion of communal personhood. Thus, the basic questions become, to what extent is this new concept feasible in the new world order? What ways can this new African concept of person in line with reality be projected as its authentic form?

The Mbitian African communalistic notion of personhood features a person who is subjected to a traditional practice hinged upon the principles of family-hood, being-with, communion and unity of being as well as communal spirits. Be that as it may, the concept and principles issuing from these constitute ontological, epistemic and existential problems for the African man since the reality of the communal world takes precedence over the reality of the individual life histories and predispositions. In the Western *weltanschaung,* the importance of the community is noted in that it is a space where each individual rights and freedom need recognition and respect, as against the African community where the individual is subordinated. Whatever advantage this primacy is set to achieve, the fact is that this communalism in its extreme form is incompatible with the individuality, autonomy and subjectivity that are true characteristics of the human species. Therefore, one may advocate for some sort of moderate communalism where there is an interaction between the individual and the community – a sort of context wherein the integrative personhood can consistently and authentically thrive.

In addition, deducible from our earlier exposition and study is the fact that based on the definitive and active element of presencing, the Integrative Person transcends a given community. Prior to our study, Mbiti defined person with reference to a given human community. Therefore, being human consisted of belongingness to a community. Consequently, a given community is thus the defining element in this form of personhood. There is however, at least, a problem in this definition which is thus: one is and remains a person in so far as one is within one`s community, and individuality can be done away with or ill-treated once such a human is not a kin; human dignity, respect and worth

are dependent upon a specific community that confers it. This is even more evident in the recurrent emphasis on "WE" in the various definition of community in the African context (Menkiti, 1984:171). This calls to mind Asouzu`s theory of *the illusion of "the nearer the better and safer" and the passion for exclusiveness* (Asouzu, 2004). For him, to survive and achieve better, actors tend to promote such things imagined to be peculiar and exclusive to them which for them gives some sort of advantage to them over other groups. Such actors often proceed in the thought that other humans and human groups can be done away with since they are not of the same stock. Under strict adherence to the above implications, there could be chaos since issues of individual rights and notions of liberty are only feasible in one`s community where he/she is known. By implication, ethnic groups and tribes would be free to despise and reckon as non-human species and alien people who are not of their stock. Individuals and groups in such a dysfunctional concept can validly pursue their own interests in so far as their activities do not breach or infringe on the rights and privileges of their kin. In this wise, lack of recognition of "others" results in discrimination and diminishment of personhood, both of the actor and the discriminated party.

Nevertheless, with the integrative personhood the above negativities are surmounted in that with/in the active element and phenomenon of presencing, the elements of individuality and communality are coordinated, activated, projected and integrated. In the presencing, the Integrative personhood recognises the beingness and personhood of the other irrespective of a given community. In presencing and inter-presencing, there is a communion realized with/in individuals of other stocks hence, leading to the recognition of a higher and larger community which transcends race, tribes, ethnicity and ideological differences. In the act of presencing, the recognition of "others" and the intersubjectivity (Levinas, 1965), ensuing forthwith enriches the personhood of both parties. Therefore, in the integrative person, the mind seeks to understand missing links of reality for what they are and this determines the way it relates concretely or authentically to the world.

6. Conclusion

The central aim of this study was to contest and destabilize the Mbitian-African communalistic concept of personhood. Thus, testifying that this does not represent a holistic African understanding of personhood the advocates of 'great debate' and their followers presume. Contrary to Mbiti's African received view, the paper in its investigation shows that Africans have an understanding of the person that is complex so much so that it cannot be collapsed into the so called communalistic system. The paper consequently develops what it called "integrative personhood" as a better representation of the African communalistic worldview.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Effects of Bullying on the Psychological Functioning of Victims

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Abstract

The violation of learners in schools has gained substantial media attention across South Africa in the 20th century. The attitudes of learners have changed and the value attached to education diminished. There are increasing concerns within South Africa that schools are the sites of widespread violence. The aim of this paper was to explore the effects of bullying in schools on the psychological functioning of victims. The study was conducted in the Sarah Baartman District Municipality in the Eastern Cape, South Africa. A qualitative approach and an exploratory research design were used in conducting this study. A purposive sampling technique was employed to select 40 participants for the study, made up of 25 learners, 5 social workers, 5 educators, and 5 community members from schools mostly affected by school-based bullying. The data were obtained through semi-structured interviews with the participants and thereafter the data were analysed thematically. The findings revealed that bullying within the school environment negatively affects the psychological functioning and academic progress of learners. Exposure to bullying impairs learners' emotions and cognition and it ultimately leads to increased levels of anxiety and depression. Hence, it was revealed that low self-esteem, thoughts of self-destruction and severe behavioural conditions are long-term effects that victims face. One conclusion drawn from this study is that victims of bullying often opt to stay absent from school because of fear. One pertinent recommendation made was to establish support groups for victims that will equip them with skills of empowerment.

Keywords: bullying; schools; exposure; psychological functioning; victims

A CRITIQUE OF MBITI'S AFRICAN COMMUNALISTIC UNDERSTANDING OF PERSONHOOD

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Abstract

Many African scholars, particularly the generation who participated in the great debate are dogmatically attached to the view that the unique characterization of African Philosophy is its communalistic concept of personhood. The chief exponent of this position and who to a great extent influenced the understanding of many generations of African scholars is the renowned and foremost African scholar, J. S. Mbiti. In fact, Mbiti so popularized the communalistic concept of personhood as the universal African view that his famous aphorism "I am because we are and since we are therefore I am" has become a refrain among every generation of African anthropologists. This paper is convinced that the reason for this state of affair is that the issue of African personhood has not been given the attention it deserves as it has been somehow occluded by the bland assertion of communalism that has fast turned into a clique. This neglect also lies at the root of some of the continent's most intractable problems since a people's anthropology certainly influences their political and economic systems. Thus, the paper employs the method of hermeneutics to contest and destabilize the Mbitian-African communalistic concept of personhood. Contrary to Mbiti's African received view, the paper in its investigation discovered that Africans have an understanding of the person that is so complex so much so that it cannot be collapsed into the so called communalistic system. The paper consequently recommended and developed what it called "integrative personhood" as a not only a better representation of the African communalistic worldview but most importantly, the worldview that Africans require to free Africa from the stranglehold of tyranny and self-perpetuation in leadership.

Key words: Personhood, African personhood, Communalism, Integrative personhood

THE HERDSMEN AND FARMERS' CONFLICT IN NIGERIA: THE OBLIGATION OF NIGERIA IN INTERNATIONAL HUMAN RIGHT LAW

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Abstract

The greatest problems facing Nigeria as a nation today, on the one hand, and legal scholarship in Nigeria, on the other hand, are how to develop a justifiable legal framework that would enable the country navigate the ongoing bloody violence between herdsmen and farmers and prevent the conflicts from spiralling out of hand and constituting a threat to local and international peace. Although, always there, the conflict assumed an alarming proportion in recent years resulting in the type of killings, maiming and sacking of villages that many in the academic and political circles are beginning to describe as ethnic cleansing or intent to commit genocide. The most alarming part of the problem is that the Nigerian Government saddled with the responsibility of protecting her citizens has been looking on, either helplessly or unwilling to do something, while her citizens are being slaughtered and their hard earned properties destroyed on regular basis. Legislators and legal scholars in the country have been making numerous efforts, including enactment of anti-open grazing bills, pushing for laws that would establish graze reserves throughout the states of the federation, calling on the security agents to be more proactive in intelligence gathering in other to prevent the killings etc., but none of these seems to be working and the bloodshed has continued both in intensity and scope. Using the doctrinal method of research, this investigation applies the Principle of Responsibility to Protect (R2P), in international human right law to examine the ongoing conflict. The paper discovered that the Nigerian Government has an obligation to protect her citizens in international human right law. However, since the Nigerian Government so far has seemed unwilling or unable to discharge this obligation, the study argues that it is the responsibility of the international community to assist the Nigeria Government through available framework in international law to protect human lives and prevent the killings from becoming another international disaster like Rwanda and Sudan.

Keywords: Conflicts, Responsibility to protect, farmers, herdsmen, human rights, international law

REAL TIME SENTIMENT ANALYSIS FOR DETECTING KIDNAPPING ACTIVITIES IN NIGERIA

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Abstract

Kidnappings has become a subject of great concern to many people in Nigeria today especially the northern region. Majority of people are worried because they don't know when they will become the next victim. Meanwhile, the manual crime reporting systems to detect crimes is no longer effective as its bound to errors and causes much delay in crime analysis. But computer data analysts have started lending hands to support law enforcement agencies to speed up the process of solving criminal cases, by analyzing the data in an automated manner. Also, in this computerized world, real time analysis is essential in decision making and fight against crimes. Consequently, sentiment analysis of twitter data may be of interest especially in crime and law enforcement sectors. This research presents a new lexicon-based sentiment analysis algorithm for detecting kidnapping activities in Nigeria. The study analyzed 390 tweets related to kidnappings in Nigeria and achieved an accuracy of 73%.

Keywords: kidnappings, sentiment analysis, lexicon based, security

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

COVID-19 OUTBREAK RESPONSES: THE PANDEMIC OF RACISM AGAINST AFRICANS LIVING OUTSIDE THEIR CONTINENT

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Abstract

The outbreak of the coronavirus pandemic has caused many impacts which are both positive and disproportionate in some ways against humanity and fundamental human rights. The disproportionate impacts includes increase in racism and xenophobia against indigenous people and ethnic minorities. Unfortunately, the coronavirus has been a pandemic of racism where some kind of people believe that they are better than other people who look differently and this undermines international human right laws. Many racist movements, white supremacist, Chinese people, European elites have used this pandemic to attain their racial goals and policies sustaining their claims as superiors. This has heightened racial discrimination and these discriminations are mostly directed toward Africans living outside the continent. In a nutshell, one of the dark spots of the pandemic is that it has been a pandemic of racism in which the fundamental rights and freedoms of Africans are trampled upon. Aside from the health challenges and deaths associated with the COVID-19, Africans are the ones suffering the racial abuses, harassment and violent events in public spaces than any other race. The united nations through the General Assembly have emphasized that there is no space for any form of racism, xenophobia and discrimination in response to the pandemic. This paper highlights and examines the racial discriminations levelled against Africans living in Asia, the main factor that made them vulnerable during the pandemic, how the trend can be controlled and the valuable lesions Africa must gathered from the pandemic.

Keyword: Africans, COVID-19 Responses, Racial Discrimination, Pandemic

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

TURKEY AS A HUMANITARIAN ACTOR IN SOMALIA

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Abstract
Somalia is located in a region that includes Djibouti, Eritrea and Ethiopia, which is called the Horn of Africa, but also includes Sudan, South Sudan, Kenya and Uganda from a political and economic perspective. The Horn of Africa, located in the northeast of the African continent; It has geostrategic importance as it controls the Red Sea, which is the global maritime trade route connecting Africa, the Middle East and Asia. The geostrategic importance of Somalia has whetted the appetite of many countries and has caused it to become the ring of hegemonic struggle throughout history. The historical ties between Turkey and Somalia has gained a new dimension after Turkey's official visit to distribute aid to Somalia which it was facing a crisis too big to cope with hunger and drought in 2011. Identified as failed state, Turkey has launched humanitarian intervention in Somalia. In this context, first of all, it reopened Mogadishu Embassy on 1 November 2011, which was closed in 1991 due to security problems and civil war in the country. Over time, the developing political relations between the two countries have gradually developed. As a result of these developments, Turkey's humanitarian and development intervention in Somalia is particularly noteworthy. With the World Health Organization declaring a global epidemic on March 11, 2020, the world has entered a different process. Following the rapid spread of COVID-19 on the African continent, Turkey has been supporting the fight against the epidemic by sending medical supplies to Somalia. This study aimed to discuss the controversial concept of humanitarian intervention in the concept of Turkey's humanitarian intervention in Somalia which is struggling with hunger, drought, migration, conflict and unemployment

Keywords: Horn of Africa, Turkey, Somalia, Humanitarian Intervention, COVID-19

Secret Terror, Public Crisis: An Assessment of the Communication Media Strategies Employed by NGOs in the Campaign against Rape in Nigeria

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Abstract
Rape is a secret terror that has literally spiralled into a public crisis in Nigeria and elsewhere. It is in view of this that this study empirically assesses the communication media strategies employed by selected nongovernmental organisations (NGOs) concerned with rape in the country. Anchored on the Uses and Gratifications theory of mass communication, the article appraises the degree of influence of the communication strategies adopted by the NGOs on their target audience and the level of awareness created by these strategies. Communicating effectively requires effectual communication strategies and effective communication of rape to audience of a rape campaign, therefore, demands the application of accurate strategies communicating rape to the target audience. To do this, the target audience of the NGOs during campaigns against rape would be looked at. The reason for the choice of audience and the availability of this audience would also be examined. And, since the purpose of any campaign is to bring about a change, the effectiveness of the communication strategies employed on the target audience of campaigns against rape would also be investigated. At any rate, the huge question staring everyone in the face is that with the purported awareness of anti-rape, how come the incidences of rape have not subsided? Could it be said that the increase in rape incidences is as a result of the medium by which NGOs communicate their messages to their audience? Are the messages appropriate for their target audience? Has the legal system of Nigeria been of any help to anti-rape campaigns? Could culture or cultural factors be responsible for the increase in rape occurrences in spite of NGOs' campaign against rape in Nigeria? Appraising the effectiveness of the communication media strategies employed by NGOs will be done by eliciting information via direct observation, questionnaire, and key informant interviews among selected populations in selected areas of Lagos and Ibadan in Nigeria.

Keywords: Rape, Communication media strategies, Nigeria, NGOs, Target audience, Campaign

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

"POVERTY IN THE MIDST OF WEALTH A PARADOX IN NIGERIA : FOURTH REPUBLIC ANALYSIS 1999-2020. ABUJA, NIGERIA.

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Abstract

It is unbelievable but credible that a nation like Nigeria with all her resources, both material and human is enveloped with unbearable poverty that is pandemic and endemic. Resources available in Nigeria are cable of transforming and catapulting her from developing to developed nation within a very short period of time if judiciously utilized but sad to note that Nigerians wallows in perpetual poverty and other excruciating features of underdevelopment namely, poverty, unemployment, low capita income, lack of infrastructural facilities, social amenities, high death rate and insecurity among others. The paper made use of secondary data and adopted system approach and prebendalism theory as theoretical framework for the study, using content analysis. The paper examined why the nation is engulfed with poverty despite resources available. The prevalent and endemic rate poverty in the midst of huge wealth calls for sober reflection and a rethink. Hence the paper addressed the following questions. what are the courses of poverty? What are the constraints to poverty eradication / alleviation? Why anti poverty policies and programme have failed to yield positive result? What and where do leaders spend the national patrimonial wealth? The aims of this paper are to address the use of resources judiciously, and ex-ray why anti poverty measures failed to achieved its goal. The paper identified constraints to poverty reduction which includes lack of political will, corruption, unemployment, lack of planning, poor policy to mention but few .The relationship between poverty and crime was also established. The finding revealed that poverty is the mother of many crimes as poverty and criminality go in the same direction. That corruption and bad leadership are major reason why poverty is endemic. Conclusively the paper made the following recommendations on how poverty can be reduced in Nigeria; they are good governance, quality education, proper policy formulations and implementations, proper evaluation and monitoring, active and dynamic independent institutional framework, strong working anti graft agency, good governance, enabling environment and provision of basic essential services to the masses.

Keywords: Poverty, wealth, paradox, Nigeria

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

GELENEKSELVE ZARARLI BİR UYGULAMA OLARAK KADIN SÜNNETİNİN MEDYADAKİ ELE ALINIŞI

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Özet

Kadınlara ve kız çocuklarına yönelik cinsel ve toplumsal cinsiyete dayalı şiddet ülkeden ülkeye farklı biçimlerde ortaya çıkmaktadır. Kadın sünneti, Afrika, Orta Doğu ve Asya'daki çoğu ülkede kadınlara ve kız çocuklarına yönelik en yaygın görülen toplumsal cinsiyete dayalı şiddet türüdür. Birleşmiş Milletler ve daha birçok ülke tarafından insan hakları ihlali olarak kabul edilen bu geleneksel uygulama küresel boyutta endişe vericidir. Buna karşın, kadın sünneti halen çok bölgede uygulanmaya devam edilmektedir.

Erillik ve dişilik aslında sosyal bir inşadır. Bu konumlandırma tarihsel, kültürel, siyasal ve toplumsal olarak üretilmektedir. Bu durum çoğu ülkede erkeği avantajlı kadını ise dezavantajlı bir duruma sürüklemektedir. Birleşmiş Milletlerin kadına karşı şiddet ile ilgili yaptığı protokol ve sözleşmelerde yer alan ve insan hakları ihlali olan kadın sünneti, küçük kız çocuklarının sadece bedenlerine zarar vermek ile kalmaz aynı zamanda yaşam boyu sürecek travmalara, acılara ve hatta ölümlere neden olmaktadır. Bu uygulamanın küresel çapta son bulması için medyanın önemi daha da görünür olmuştur. Güçlü bir araç olarak medya, bilginin yayılmasında, bir konu hakkında farkındalık yaratmada ve olayları görünür kılmada çok önemli bir rol oynamaktadır. Ayrıca, gündem belirleyici rolü ile halkın algısını yönlendirmektedir. Bu çalışma medyanın kadın sünneti konusunu nasıl ele aldığını ve kamuoyuna nasıl sunduğunu araştırmaktadır. Yakın zamanda gerçekleştirilen farklı bir analizde, İngiltere'nin en saygın kabul edilen gazetesi olarak öne çıkan The Guardian gazetesi çalışmanın odak noktası olarak seçilmiştir. İngiltere'nin ulusal gazetesi The Guardian'da kadın sünneti konusunda 1 Ocak 2020 ile 1 Eylül 2020 tarihleri arasında yer bulan haberler eleştirel söylem analizi yöntemi ile araştırılmıştır.

Anahtar Kelimeler: Zararlı Geleneksel Uygulama, Medya Analizi, The Guardian, Kadın Sünneti

MEDIA PORTRAYEL OF FEMALE GENITAL MUTILATION/CUTTING AS A HARMFUL TRADITIONAL PRACTICE

Abstract

Sexual and gender-based violence against women and girls takes different forms varies from country to country. Female Genital Mutilation/Cutting (FGM/C) is one the most common gender-based violence against women and girls in most of the countries in Africa, Middle East and Asia. Although this Harmful Traditional Practice which is addressed as a global concern and human rights violation by United Nations and many more countries, it still continues to perform. Masculinity and feminity are actually social constructions. This positioning is historically, culturally, politically and socially constructed. It has become disadvantageous to carry out this situation while making men advantageous. Female Genital Mutilation which was mentioned at the United Nations protocol and declarations is a violation of human rights not only harms the bodies of young girls but also causes lifelong trauma, pain and eve death. To end this harmful practice globally the media has become more critical and crucial. Media as a powerful tool plays a crucial role in disseminating the information, create awareness about an issue and make things visible. Thus, with its agenda-setting role it directs the perception of public. This study tried to understand how media presents Female Genital Mutilation/Cutting and problem of victims. According to a study by a non-partisan media research organization, The Guardian is the most respected newspaper brand in the UK. That's why we chose to review The Guardian newspaper (one of the top UK national newspapers) between January 1, 2020, and Semptember 1, 2020 referencing Female Genital Mutilation/Cutting has been analyzed in accordance with critical discourse analysis method.

Keywords: Harmful Traditional Practice, Media Portrayel, Female Genital Mutilation/Cutting, The Guardian

INVESTIGATION of OPTIMUM INSULATION THICKNESS via DEGREE DAY METHOD

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Abstract

It is possible to collect Turkey's energy consumption under 4 main headings: industrial, residential, transportation and agriculture. Factors such as limited energy sources and environmental problems that arise after unconscious use of these limited energy resources, as well as external dependence on energy, make efficient use of existing energy sources inevitable. For this reason, insulation is one of the most appropriate approaches to increase energy efficiency in the air conditioning needs of the housing sector, which has a very important value in Turkey's energy consumption.

In this study, efficiency and cost analysis of insulation materials to be applied to the outer walls of buildings in the city center of Tekirdağ province, located in the north west of Turkey, was performed. Using the degree day method in the calculations, optimum insulation thickness, insulation cost and payback period were calculated for three different insulation materials. The insulation materials inspected are extruded polystyrene foam (XPS), polystyrene-particulate foam (EPS) and polyurethane hard foam (PUR), which are the most preferred thermal insulation materials in the construction industry. According to the information obtained from the study in which the heating season and the use of natural gas are taken into account, it has been determined that there is a heating cost of 105 TL per unit area for heating an uninsulated building in the selected region. If insulation is applied to the building with XPS insulation material, it has been determined that the annual heating cost per unit area will decrease to 45.5 TL, the optimum thickness of the XPS material to be applied will be 0.021 m and this investment will pay for itself in 0.43 years. Similarly, if EPS material is used, it has been determined that the heating cost will be 41.3 TL, the optimum insulation thickness will be 0.030 m and the payback period will be 0.39 years. In addition, it was found that if PUR material is used, the heating cost will be 30.3 TL, the optimum thickness will be 0.014 m and the payback period will be 0.73 years. Compared to the values obtained, it was concluded that EPS is the most suitable insulation material to be applied to the external walls of buildings in the selected area.

Keywords: Degree Day Method, TS 825, Thermal Insulation, Thermal Insulation Material

DERECE GÜN METODU İLE OPTİMUM YALITIM KALINLIĞININ ARAŞTIRILMASI

Özet

Türkiye'nin enerji tüketimini, endüstriyel, konut, ulaşım ve tarım olmak üzere 4 ana başlık altında toplamak mümkündür. Enerji kaynaklarının sınırlı olması ve bu sınırlı kaynakların bilinçsizce kullanımı sonrası çıkan çevresel sorunlar ile enerjide dışa bağımlılık gibi etkenler, var olan enerji kaynaklarının verimli bir şekilde kullanılmasını kaçınılmaz kılmaktadır. Bu sebeple, Türkiye'nin enerji tüketiminde oldukça önemli bir değere sahip olan konut sektörünün iklimlendirme ihtiyaçlarında, enerji verimliliğini arttırmak için yapılabilecek en uygun yaklaşımlardan biri yalıtımdır.

Bu çalışmada, Türkiye'nin kuzey batısında bulunan Tekirdağ ilinin şehir merkezindeki binaların dış duvarlarına uygulanacak yalıtım malzemelerinin verimlilik ve maliyet analizi yapılmıştır. Hesaplamalarda derece gün metodu kullanılarak, üç farklı yalıtım malzemesi için optimum yalıtım kalınlığı, yalıtım maliyeti ve geri ödeme süreleri hesaplanmıştır. İncelenen yalıtım malzemeleri, inşaat sektöründe ısı yalıtım malzemesi olarak en çok tercih edilen, ekstrüde polistren köpük (XPS), polistren-partiküler köpük (EPS) ve poliüretan sert köpük (PUR)'dür. Isıtma sezonu ve doğalgazlı kullanımın dikkate alındığı çalışmadan elde edilen bilgilere göre, seçilen bölgede bulunan yalıtımsız bir binanın ısıtılması için birim alan başına yıllık 105 TL'lik ısıtma maliyetinin olduğu belirlenmiştir. Binaya XPS yalıtım malzemesi ile yalıtım uygulandığı takdirde, birim alan başına düşen yıllık ısıtma maliyetinin 45,5 TL'ye düşeceği, uygulanacak XPS malzemenin optimum kalınlığının 0,021 m olacağı ve bu yatırımın 0,43 yılda kendisini amorti edeceği belirlenmiştir. Benzer şekilde EPS malzeme kullanılması durumunda, ısıtma maliyetinin 41,3 TL, optimum yalıtım kalınlığının 0,030 m ve amorti süresinin 0,39 yıl olacağı tespit edilmiştir. Ek olarak, PUR malzeme kullanılması durumunda, ısıtma maliyetinin 30,3 TL, optimum kalınlığın 0,014 m ve amorti süresinin 0,73 yıl olacağı bulunmuştur. Elde edilen değerler karşılaştırıldığında, seçilen bölgedeki binaların dış duvarlarına uygulanacak en uygun yalıtım malzemesinin EPS olduğu sonucuna varılmıştır.

Anahtar Kelimeler: Derece Gün Metodu, TS 825, Isı Yalıtımı, Isı yalıtım Malzemesi

INTRODUCTION

Energy is one of the components that play an important role in the economic and social development of a country. Rapid technological developments coming with globalization increase the demand for energy day by day and this situation causes energy to become a strategic value for countries. While most of the increasing energy need is met from carbon-based fuels, many researches are carried out on renewable energy sources and systems that will create an alternative to these energy sources in addition to these studies, which are suitable for new systems to be designed, energy efficiency in existing systems should be increased. One of the sectors that plays a big role in energy consumption is the housing sector. Most of the energy used in residences is spent for needs such as heating and cooling. In this case, insulation is one of the applications that can be made in terms of energy efficiency in houses. In order to maximize the energy efficiency to be achieved with insulation applications, the insulation material to be applied and its thickness must be

determined correctly. There are many studies in the literature investigating the most suitable insulation materials and insulation thicknesses for buildings in a specified location. When some of these are examined, in a study (Al-Sallah, 2003), two types of roof insulation in two different regions with hot and cold climates were compared and it was stated that the insulation cost payback period of those in a cold climate was shorter than the insulation cost payback period of those in a hot climate. In a study conducted by Yu et al., they investigated the optimum insulation thickness for four typical cities of China located in hot summer and cold winter regions. In their research, they used five different insulation materials and determined that the optimum insulation thickness range ranged between 0.053-0.236 m, and the insulation cost payback period ranged from 1.9 to 4.7 years (Yu, Yang, Tian, & Liao, 2009). Axaopolos et al. investigated the optimum insulation thickness for the outer walls of the buildings in Larnaca, Cyprus, in their study, where they take into account the wind speed and direction, and the heating and cooling times. They found that the optimum insulation thickness varied between 4.25 cm and 15.5 cm, and the payback period of the insulation varied between 5.47 and 12.11 years (Axaopolos, Axapolos, Panayiotou, Kalogirou, & Gelegenis, 2015). In another study, the researchers, by addressing the four different insulation materials, Turkey, four different climates of housing in the regions, different fuel types and investigated the optimal insulation thickness in the work that they deal with different wall structures. As a result of the research, they stated that the energy cost savings vary between $ 4.2/m^2 and $ 9.5/m^2 depending on the city and insulation materials.

In this study, Turkey's northwestern province of Tekirdag city center to the outer walls of buildings in the insulation material applied is made productivity and cost analysis. Using the degree day method in the calculations, optimum insulation thickness, insulation cost and payback period were investigated for three different insulation materials.

MATERIAL AND METHOD

Selected City

The Province for which insulation research is conducted is the province of Tekirdağ, located in the 2nd Degree Day Zone according to the Turkish thermal insulation standard (TS 825, 1998). Tekirdağ province is located on the coordinates of 26º 43'-28º 08 'east longitudes and 40º 36'-41º 31' north latitudes (Figure 1).

Mediterranean climate is dominant in Marmara Sea coasts. However, unlike the Mediterranean Region coasts, snowfall can be seen in the coastal area in winter. In the inner parts of the province, summers are hot and winters are cold. Therefore, the continental climate prevails (Republic of Turkey, Tekirdağ Governorate, 2020).

Figure 1. Tekirdağ Province Location Map

If the seasonal norms of Tekirdağ province are examined, according to the data recorded between 1939-2019 from the General Directorate of Meteorology (Meteorology General Directorate, 2020), the realized lowest temperature is -13.5 $^{\circ}$C and the highest temperature is 40.2 $^{\circ}$C. In addition, the recorded average lowest temperature value is 1.9 $^{\circ}$C and the average highest temperature value is 28 $^{\circ}$C. The number of heating degree days (HDD) is recorded as 1189 in the data of 2020 (General Directorate of Meteorology, 2020).

Properties of Insulation Materials Examined

The examined insulation materials (Figure 2) are extruded polystyrene foam (XPS), polystyrene-particulate foam (EPS) and polyurethane rigid foam (PUR), which are the most preferred thermal insulation materials in the construction industry. The properties of these materials are given in Table 1.

Figure 2. Insulation materials, a.) XPS, b.) EPS, c.) PUR

Table 2. Properties of insulating materials

Insulation Material	Heat conduction coefficient (W/mK)	Thermal resistance (m^2K/W)	Cost (TL/m^3)
XPS	0.030	1.333	1260
EPS	0.035	1.143	840
PUR	0.025	1.600	1820

Parameters used in calculations

In order to determine the performance of the selected insulation materials, it has been accepted that the building has a natural gas heating system. In this respect, the technical and financial values of natural gas are presented in Table 2.

Table 3. Technical and physical properties of the fuel used

Fuel	Hu	η	Price (C_{fuel})
Natural gas	34485000 J/m^3	0.90	0.234 TL/m^3

Parameter	
Interest rate (i)	12.1%
Inflation rate (g)	11.2%
Life cycle (N)	10 years
Present Worth Factor (PWF)	9.569

The financial values required for life cycle cost analysis in order to determine the optimum insulation material thickness are presented in Table 3.

Table 4. Financial values

Building elements and physical properties of insulated and uninsulated exterior walls

Sectional views of insulated and uninsulated walls are given in Figure 3.
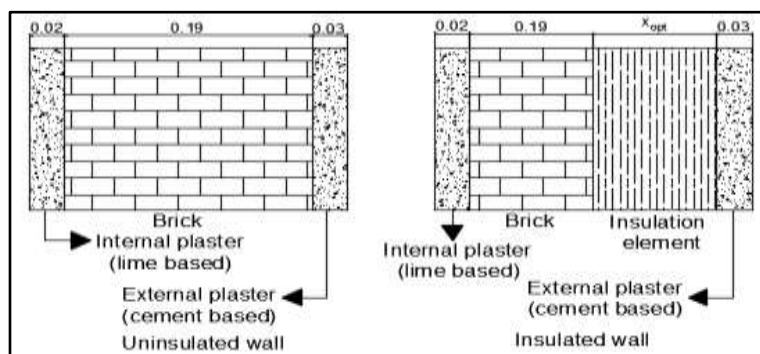
Figure 3. Reference wall and insulated wall

As can be seen in Figure 3, uninsulated wall; It consists of 0.02 m thick interior plaster, 0.19 m thick horizontal type perforated brick (Turkish Standard Institute, 2020) and 0.03 m thick exterior plaster. In the insulated wall, in addition to the uninsulated wall, insulation material was added after the brick. In addition, the physical properties of the outer walls are presented in Table 4.

Table 5. Physical properties of building elements

Wall structure	Pressure resistance MPa	Density (kg/m^3)	Thickness (m)	k (W/mK)	R (m^{2}K/W)
Internal plaster (lime based)	-	1200	0.025	0.87	0.029
Brick	≥13.2	750	0.190	0.50	0.380
External plaster (cement based)	-	2100	0.035	1.40	0.025
R_i	-	-	-	-	0.130
R_o	-	-	-	-	0.040
$R_{w,t}$ (uninsulated)	-	-	-	-	0.604

Determination of the heating load and optimum insulation thickness

Heat loss from the unit surface of any wall can be calculated from Equation 1.

$$q = U \ x \ \Delta T \tag{1}$$

In Equation 1, the U thermal conductivity coefficient (W/m^{2}K) and ΔT (K) are the difference between indoor and outdoor temperatures. Accordingly, annual heat losses or gains in the unit surface area of the wall can be calculated from Equation 2 by using U and Degree-day values (Kürekçi, 2016).

$$q_{year,H} = 86400 \ x \ HDD \ x \ U \tag{2}$$

In Equation 2 $q_{year,H,}$ represents annual heat loss in heating (W/m^2).

The formulas given in Equations 3 and 4 were used to determine the total thermal conductivity coefficient.

$$U = \frac{1}{R_i + R_w + R_o} \tag{3}$$

$$U = \frac{1}{R_i + R_{ins} + R_o} \tag{4}$$

Equation 3 gives the total thermal conductivity coefficient for the wall without thermal insulation, while Equation 4 gives the total thermal conductivity coefficient for the wall with a thermal insulation element. In the equations, R_i and R_o indicate the heat resistance coefficients of the internal and external environment, while R_w and R_{ins} indicate the thermal conductivity resistance

coefficients of the non-insulated wall and the insulated wall, respectively. R_{ins}, which indicates the thermal resistance of the insulation, can be calculated with the formula given in Equation 5.

$$R_{ins} = \frac{x}{k} \tag{5}$$

The term x given in Equation 5 indicates the insulation thickness (m) and k indicates the thermal conductivity coefficient (W/mK) of the insulation. Also, for a wall without thermal insulation, the total thermal resistance can be calculated as in Equation 6.

$$R_{w,t} = R_i + R_w + R_o \tag{6}$$

Total annual heating energy requirement for the heating season $E_{year,H}$ can be calculated with the formula given in Equation 7 (Kürekçi, 2016).

$$E_{year,H} = \frac{86400 \; x \; HDD}{(R_{w,t} + R_{ins}) \; x \; \eta} \tag{7}$$

With the insulation processes applied on the exterior surfaces of the buildings, it is possible to prevent heat loss or gain from the exterior surfaces per unit area according to the season. However, it is essential to select the insulation element that will provide this saving in optimum thickness. Otherwise, the process may be far from being economical even it performs the insulation task. Therefore, cost analysis is essential to determine the optimum insulation thickness. Annual energy costs from the unit surfaces of the exterior walls are given in Equation 8 for the heating season.

$$C_{A,H} = \frac{86400 \; x \; HDD \; x \; C_{fuel}}{(R_{w,t} + R_{ins}) \; x \; Hu \; x \; \eta} \tag{8}$$

In Equation 8, $C_{A,H}$, is the total heating cost (TL/m²year). Hu refers to the lower thermal value (heating value) of the fuel according to the type of fuel used. The efficiency of the heating system is expressed with the symbol η. The life cycle cost analysis method was used to determine the optimum insulation thickness. The annual energy cost was calculated based on the life of the insulation elements and the current value factor (Aytaç & Aksoy, 2006). The current value factor according to inflation and interest rates was calculated by Equations 9, 10, 11, 12.

If i > g;

$$r = \frac{i-g}{1+g} \tag{9}$$

If i < g;

$$r = \frac{g-i}{1+i} \tag{10}$$

$$PWF = \frac{(1+r)^N - 1}{r \: x \: (1+r)^N} \tag{11}$$

If i = g;

$$PWF = \frac{N}{1+i} \tag{12}$$

In addition, the statement giving the cost of insulation is presented in Equation 13.

$$C_{ins} = C_y \times x \tag{13}$$

According to the life cycle cost analysis of an insulated building, the total heating cost is given in Equation 14 (Kürekçi, 2016).

$$C_{t,H} = C_{A,H} \times PWF + C_y \times x \tag{14}$$

The expression that gives the optimum insulation thickness that will minimize the total heating cost for the heating season is given in Equation 15 (Aytaç & Aksoy, 2006).

$$X_{opt,H} = 293.94 \times \left(\frac{HDD \times C_{fuel} \times PWF \times k}{Hu \times C_y \times \eta} \right)^{1/2} - k \times R_{w,t} \tag{15}$$

The calculations of the annual net savings to be obtained with the insulation material to be applied to the buildings are presented in the equations below. Accordingly, the net earnings from heating during the heating season are given in Equation 16, and the expression referring to the payback periods for this term is given in Equation 17.

$$S_{year,H} = C_H - C_{t,H} \tag{16}$$

$$S_{PP,H} = \frac{C_{ins}}{S_{year_H}} \tag{17}$$

RESULTS and DISCUSSION

In this study, considering only the heating season, optimum insulation thickness and energy saving as a result of insulation application were investigated. The findings obtained from the research conducted according to the life cycle cost analysis method are given below.

Annual heating cost findings

The annual heating cost findings calculated using Equation 8 are given in Table 5. While calculating the annual heating cost of the uninsulated building, the value of the R_{ins} term is taken as zero in the relevant equation.

Table 5. Heating cost per unit area per year

Insulation Element	Uninsulated	XPS	EPS	PUR
Annual Heating Cost (TL/m²-year)	105	45.5	41.3	30.3

Optimum insulation thickness findings

The optimum thickness of the insulation elements was calculated using the formula given in equality 15. The values obtained are given in Table 6.

Table 6. Optimum thicknesses of insulation elements

Insulation Element	Unınsulated	XPS	EPS	PUR
Optimum thickness (m)	-	0.021	0.030	0.014

Payback period findings

The formulas given in Equations 16 and 17 were used in determining the payback periods of the insulation to be applied with three different materials. These results only cover the cost spent on insulation materials. Insulation application fee (labor) and glue, paint or other required items are not taken into account in this assessment. The results obtained are presented in Table 7.

Table 7. Payback periods for insulation elements

Insulation Element	Unınsulated	XPS	EPS	PUR
Payback period (year)	-	0.43	0.39	0.73

CONCLUSION

In this study, it located in the northwest of Turkey and the Turkish thermal insulation rules standard TS 825 by 2 in the region (temperate climate) with research suitable insulation material for thermal

insulation of exterior walls of houses in Tekirdag province is made. The findings obtained from the study in which the three most preferred materials in thermal insulation material applications were compared are given below.

1. The annual heating cost per unit area of the building without thermal insulation is 105 TL.

2. Annual heating cost per unit area will decrease to 45.5 TL in case of insulation with XPS material, 41.3 TL in case of insulation with EPS material, and 30.3 TL in case of PUR material.

3. Payback periods of XPS, EPS and PUR insulation materials are respectively; 0.43, 0.39 and 0.73 years,

Has been detected.

Nomenclature

$A_{year,H}$	Difference of annual total heating cost ($\$/m^2$year)
C	Annual energy cost for unit surface without insulated ($\$/m^2$year)
$C_{A,H}$	Total heating cost ($\$/m^2$year
C_{fuel}	Cost of the fuel ($\$/m^3$, $\$/kg$)
$C_{ins.}$	Cost of the insulant ($\$/m^2$)
$C_{t,H}$	Total heating cost of the insulated building($\$/m^2$year)
Cy	Cost of the insulant ($\$/m^3$)
DD	Degree-day value (∘C-days)
$E_{year,H}$	Annual energy need for heating (J/m^2year)
g	Inflation rate (%)
HDD	Heating degree-day value (∘C-days)
Hu	Low heat value of the fuel (J/kg, J/m^3)
i	Interest rate (%)
k	Thermal conductivity of insulation (W/mK)
N	Lifetime (year)
Spp	Payback period (year)
PWF	Present Worth Factor
q	Annual heat loss (W/m^2)
r	Actual interest rate
R	Heat transfer resistance (m^2K/W)
$R_{ins.}$	Thermal resistance of the insulant (m^2K/W)
R_o	Outside heat transfer resistance (m^2K/W)
R_w	Thermal resistance of wall layers without insulation(m^2K/W)
$R_{w,t}$	Thermal resistance of non-insulated wall (m^2K/W)
T	Temperature (K)
U	Total heat transfer coefficient (W/m^2K)
X	Insulation thickness (m)
X_{opt}	Optimum insulation (total) thickness (m)

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PRIORITIZATION BY AHP OF METHODS USED IN THE TREATMENT OF WASTEWATER CONTAINING DYESTUFFS

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Abstract

Dyestuffs are examined in three groups as cationic, anionic and non-ionic. They are widely used in many applications such as silk, wool, nylon, acrylic painting, etc. The reasons for the widespread use of dyes are low energy consumption, easy use and production, high stability during washing (temperature, sunlight, etc.) and color diversity. Dyestuffs have various groups such as sulfo-, azo- and also contain toxic compounds such as heavy metals. Due to these compounds in their structure, they are resistant to biological degradation. It is predicted that $7\text{-}10 \ast 10^5$ tons of dyestuff is produced for use in the textile industry, which is the most widely used area of dyestuffs, and 15-20% of the dye used is discharged with wastewater. For these reasons mentioned, the industrial waste water used must be treated before discharging. A wastewater containing dyestuffs varies not only for the compounds resistant to decomposition, but also its content (pH, temperature, organics, inorganics, etc.) according to the industry used. In the treatment of wastewater containing dyestuffs, adsorption, Fenton, persulphate and electrooxidation methods based on the oxidation principle are mainly used. The aim of this study is to prioritize the adsorption, Fenton, persulfate and electrooxidation alternatives to be used in the management of a wastewater containing dyestuff with analytical hierarchy process (AHP) method in terms of 3 main criteria and 12 sub-criteria. In addition, by conducting sensitivity analysis, it is to observe the change of their priority rank according to the criteria. As a result of AHP analysis, the top priority method, electro-oxidation (39%) was determined. Electro-oxidation was followed by Fenton (24%), persulfate (22%) and adsorption (15%) methods. The same ranking was obtained at the end of three different scenarios. Such a result may be due to the high efficiency of electro-oxidation methods (especially organic matter), less waste generation, shorter reaction time (less area). Although adsorption is a very advantageous method in terms of color removal, it has not been primarily determined by experts in terms of other criteria. Fenton and persulfate oxidation methods are almost the same priority.

Keywords: dyestuff, adsorption, fenton, persulfate, electro-oxidation, AHP

BOYARMADDE İÇEREN ATIKSU ARITIMINDA KULLANILAN METOTLARIN AHP İLE ÖNCELİKLENDİRİLMESİ

Özet

Boyarmaddeler, katyonik, anyonik, ve non-iyonik olarak üç grupta incelenirler. İpek, yün, naylon, akrilik boyama vb. birçok uygulamada yaygın şekilde kullanılırlar. Boyarmaddelerin yaygın bir

şekilde kullanımlarının sebepleri; düşük enerji tüketimi, kolay kullanımı ve üretimi, yıkama sırasındaki yüksek stabilitesi (sıcaklığa, güneş ışığına vb.) ve renk çeşitliliğidir. Boyarmaddeler, sülfo-, azo- gibi çeşitli gruplara sahip olup ağır metaller gibi toksik bileşikleri de içerirler. Yapılarındaki bu bileşiklerden dolayı da biyolojik ayrışmaya dirençlidirler. Boyarmaddelerin en yaygın kullanılan bir alanı olan tekstil sanayisinde kullanmak için 7-10*10^5 ton boyarmadde üretildiği ve kullanılan boyanın da %15-20'si atıksu ile deşarj edildiği öngörülmektedir. Bahsedilen bu sebeplerden dolayı kullanılan sanayinin atıksuyu deşarj edilmeden önce arıtılmalıdır. Boyarmadde içeren bir atık su, sadece ayrışmaya dirençli bileşikleri değil kullanılan sanayiye göre içeriği (pH, sıcaklık, organikler, inorganikler vb.) değişmektedir. Fakat en önemli kirlilik unsurlarından biri renk ve organik kirliliğe neden olmasıdır. Boyarmadde içeren atıksuların arıtılmasında oksidasyon prensibine dayanan adsorpsiyon, Fenton, persülfat ve elektrooksidasyon yöntemleri başlıca kullanılmaktadır.

Bu çalışmanın amacı, boyarmadde içeren bir atıksuyun yönetiminde kullanmak için adsorpsiyon, Fenton, persülfat ve elektrooksidasyon alternatiflerini, 3 ana kriter ve 12 alt kriter açısından analitik hiyerarşi prosesi (AHP) metodu ile önceliklendirmektir. Ayrıca duyarlılık analizi yaparak ele alınan kriterlere göre öncelik sırasının değişimini gözlemlemektedir.

AHP analizi sonucunda en öncelikli metot, elektro-oksidasyon (%39) belirlenmiştir. Elektro-oksidasyonu, Fenton (%24), persülfat (%22) ve adsorpsiyon (%15) yöntemleri takip etmiştir. Üç farklı senaryo sonunda da aynı sıralama elde edilmiştir. Böyle bir sonucun çıkması elektro-oksidasyon yöntemlerinin yüksek verim sağlaması (özellikle de organik madde), daha az atık oluşması, kısa reaksiyon süresi (daha az alan) gerektirmesinden dolayı olabilir. Adsorpsiyon, renk giderimi açısından çok avantajlı yöntem olmasına rağmen ele alınan diğer kriterler açısından uzmanlar tarafından öncelikli olarak belirlenmemiştir. Fenton ve persülfat oksidasyon yöntemleri ise hemen hemen aynı öncelikte tutulmuştur.

Anahtar Kelimeler: boyarmadde, adsorpsiyon, fenton, persülfat, elektro-oksidasyon, AHP

INTRODUCTION

Today, when technology develops rapidly, there is rapid production and consumption due to the increasing supply and demand. In fast production industries (mainly textile industry, cleaning materials, paper, personal care, etc.), dyes with different characteristics are used and even a small amount of them causes colored wastewater (Imecik et al., 2014, p. 139-145; Jedynak et al., 2019, p.30). In addition to the color pollution in industries where dyes are used, wastewater contains different organic and inorganic pollutants depending on the type of industry.

Dyestuffs are examined in three groups as cationic, anionic and non-ionic (Marungrueng & Pavasant, 2006, p. 268-274). They are widely used silk, wool, nylon, acrylic painting, etc. in many applications (Bayrak-Tezcan et al., 2019, p. 1977-1988). The reasons for the widespread use of dyestuffs are low energy consumption, easy use and production, high stability during washing (temperature, sunlight, etc.) and color diversity. Dyestuffs have various groups such as sulfo-, azo- and also contain toxic compounds such as heavy metals. Due to these compounds in their structure, they are resistant to biodegradation (Sennaoui et al., 2018, p. 163-178). It is predicted that 7-10*10^5 tons of dyes are produced for use in the textile industry, which is the most widely used area of dyes (Turkes, 2019, p.90), and 15-20% of the dyes used are discharged with wastewater (Babaei et al., 2017, 163-174). For these reasons, industrial wastewater must be treated before discharge.

As a result of discharging colored wastewater without treatment, photosynthesis and respiratory activities in the aquatic environment are negatively affected and the balance of the water ecosystem is disrupted (Khan et al., 2019, p.243-254). In addition, it causes a decrease in light transmittance and gas solubility in the aquatic environment (Cakmak et al., 2017, p. 743-753). Pollutants such as heavy metals accumulate in the soil environment and cause toxic effects via the food chain to living beings. In addition to its negative effects on the environment, there are also mutagenic, carcinogenic, etc. On humans (Khan et al., 2019, p. 243-254). Due to the toxic and stable content of the treatment of wastewater containing dyes, the desired efficiency cannot be obtained by biological methods (Sennaoui et al., 2018, p. 163-178). Methods that are not affected by the toxic content of wastewater and based on oxidation are preferred. These methods are advanced oxidation processes (AOP). Among the advanced oxidation methods, the most studied are adsorption (AD), Fenton (FE), persulfate (PS) and electro-oxidation (EO).

Real-life problems are often multi-criteria, complex, contradictory and ambiguous. Multi-criteria decision-making techniques (MCDM) are used to decide on the most suitable of different alternatives. MCDM techniques are used for the selection and ranking of more than one alternative, considering different criteria. There are some studies on wastewater treatment (location selection, facility performance evaluation, etc.) (Mahjouri et al., 2017a, p.21-37; Anaokar et al., 2018, p.715-726; Hama et al., 2019, p. E01355). Analytical Hierarchy Process (AHP) is the most widely used MCDM technique (Rajak & Shaw, 2019, p.101186). Environmental applications are also complex, and prioritization with MCDM in these applications is recommended by many researchers (Tseng, 2011, p.1340-1352; Goulart-Coelho et al., 2017, p.3-28; Arikan et al., 2017, p. 403-412).

The aim of this study is to prioritize the adsorption, Fenton, persulfate oxidation and electro-oxidation alternatives used in the treatment of wastewater containing dyestuffs in terms of technological, cost and environmental/social main criteria and the four sub-criteria that constitute each main criterion. AHP technique was used in the evaluation. By changing the weight values of the criteria, the effect of the criteria on the alternative ranking was examined. In the literature research, it has determined that these technologies used in the treatment of wastewater containing dyestuffs are not evaluated by multi-criteria decision making (MCDM) techniques.

METHOD

Analytical Hierarchy Process (AHP)

In this study, four alternatives used in wastewater containing dyestuffs were prioritized with AHP technique in terms of technological, cost and environmental/social main criteria. AHP calculations were performed with Microsoft Excel program. AHP is an MCDM technique proposed by Thomas L. Saaty in 1980 (Saaty, 1980, p. 287). AHP, widely used, can be applied to both qualitative and quantitative data. Multi-criteria problems are transformed into a hierarchical structure. The weights of the main and sub criteria are calculated by creating paired comparison matrices according to the 1-9 scale determined by Saaty (Rajak & Shaw, 2019, p.101186). With the AHP technique, the consistency of decision makers is understood from the consistency rate (CR). A CR ratio of less than 0.1 indicates consistency of decisions. The steps of the AHP technique are briefly as follows:

Step 1. Determining the purpose, alternatives and criteria

Step 2.Creating the binary comparison matrices

Step 3: Normalization and finding relative weights

Step 4. Calculation of the consistency ratio (CR)

Step 5: Determining the final rank

Alternatives and Criteria

In prioritizing the alternatives with AHP technique, the knowledge of literature and of environmental engineers were used. With the knowledge of the literature, detailed information was obtained about the alternatives selected and the criteria were selected. Environmental engineers, who are decision-makers, have filled out binary generated surveys for criteria and alternatives.

Adsorption

It is a physical/physicochemical method and its mechanism is based on adhesion with the interaction of the pollutant and adsorbent surface and partly on oxidation. The use and operation of the adsorption method are simple, it has a low risk because chemicals do not use except pH adjustment, it is the preferred method in terms of color removal (Lee, 2016, p. 255-261), and the system is not adversely affected by stable and toxic pollutants (Koklu & Ozer, 2018, p.174-180). The cost of the system is very economical when using an affordable adsorbent. High-quality liquid product is produced. The most important disadvantages of the adsorption method are that complete degradation/mineralization does not occur and the adsorbent used must be disposed of (Yang et al., 2011, p. 659-666).

Fenton

Fenton process, one of the AOPs, takes place in the presence of strong radicals (hydroxyl) formed by the addition of iron and hydrogen peroxide. These chemicals are non-toxic and they are not expensive because they are available in abundance. Fenton process is easy to operate and a higher rate of decomposition occurs (Rosales et al., 2018, p.556-562; Turkes, 2019, p.90; Khan et al., 2019, p.243-254). Since it is operated in acidic conditions, it has a small risk. Iron compounds used as catalysts can cause the effluent to be colored and the desired color removal efficiency cannot be achieved in light-colored paints such as yellow. The most important disadvantage is the formation of sludge that must be managed. In addition, as a result of the Fenton process, the wastewater should be adjusted to suitable pH values and precipitated (Sennaoui et al., 2018, p.163 178).

Persulfate

Persulfate oxidation, one of the AOP methods, is a process in which strong sulfate radicals are formed and organic pollutants are removed with the use of chemicals containing persulfate ($S_2O_8^{-2}$). The use of temperature, UV/light or transition metals is required to activate the PS used (Yang et al., 2011, p. 659-666). Sulfate radicals are stronger and more effective than hydroxyl radicals. Hydroxyl radicals are also formed in PS oxidation. However, at normal temperatures, the reaction time can be longer than other processes (Salari et al., 2009, p. 61-66).

Electro-oxidation

Methods such as electro-coagulation and electro-Fenton are electro-oxidation methods. Classical coagulation requires less reaction time (so requires less space) compared to some methods such as

Fenton, provides higher efficiency, requires less chemical consumption and therefore less sludge is produced (Bilgili et al., 2016, p.119-126.). Hydrogen peroxide or iron ion is continuously produced in the electrodes used (Sadek et al., 2016, p. 1-8). Electrodes used in electro-oxidation processes are corroded and electricity is consumed. It can also provide high efficiency for different wastewater.

Technological, cost and environmental/social criteria, and 4 different sub-criteria in each main criterion were decided for the selection of the most suitable alternative among the determined alternatives for the treatment of wastewater containing dyestuffs (Table 1).

Table 1. Main and sub-criteria

Main Criteria	Technological (T)	Cost (C)	Environmental/Social (E)
Sub-criteria	Ease of operation (T1)	Investment cost (C1)	Physical workload (E1)
	COD removal (T2)	Operating cost (C2)	Occupational health-safety/risk (E2)
	Color removal (T3)	Maintenance cost (C3)	Sludge amount (E3)
	Shock load resistance (T4)	Land cost (C4)	Emission release/waste generation to be managed (E4)

RESULTS

Prioritization of Criteria

In order to prioritize the alternatives in terms of main criteria, firstly the criteria (main and sub) were compared in binary according to the scale suggested by Saaty. Local and global weights of the criteria were determined by making calculations (Figure 1). Looking at Figure 1, technological has been chosen as the top priority main criterion by decision-makers. Considering the global weight values, it is seen that the top priority sub-criteria are T2, T3, and T4. In the local evaluation, T2 from the technological main criterion, E4 from the environmental/social main criterion, and C2 from the cost main criterion were obtained primarily.
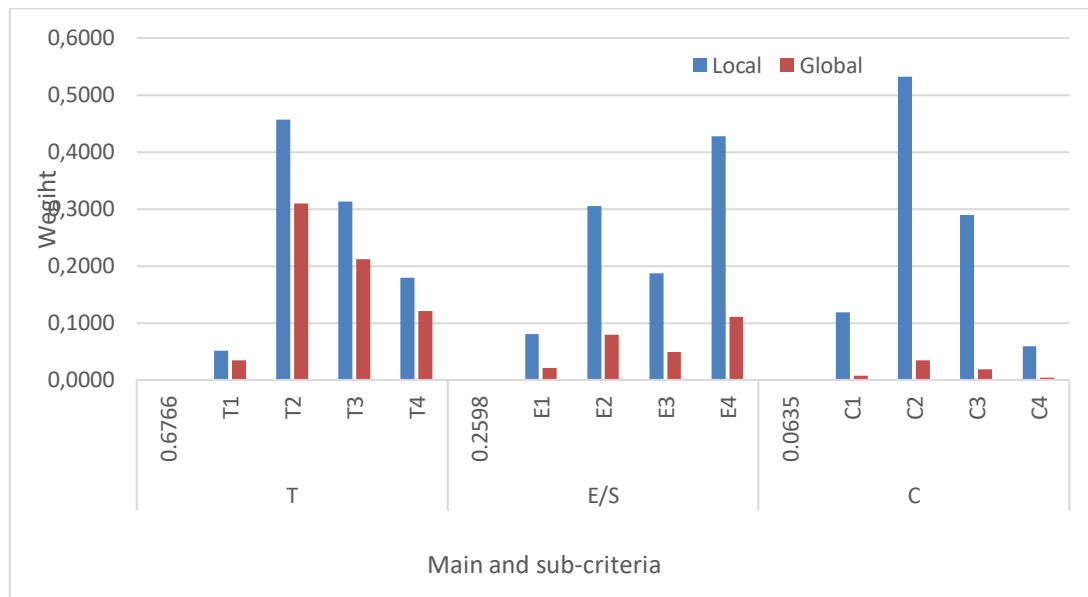
Figure 1. Local and global evaluation of criteria

Prioritization of Alternatives

After determining the weights of the main criteriaand sub-criteria, the alternatives were compared in terms of each criterion. The weight values obtained are given in Figure 2. While EO was determined as the primary alternative with 0.3926 weight value, EO was followed by FE, PS and AD, respectively. Weight values of FE and PS were obtained very close to each other.
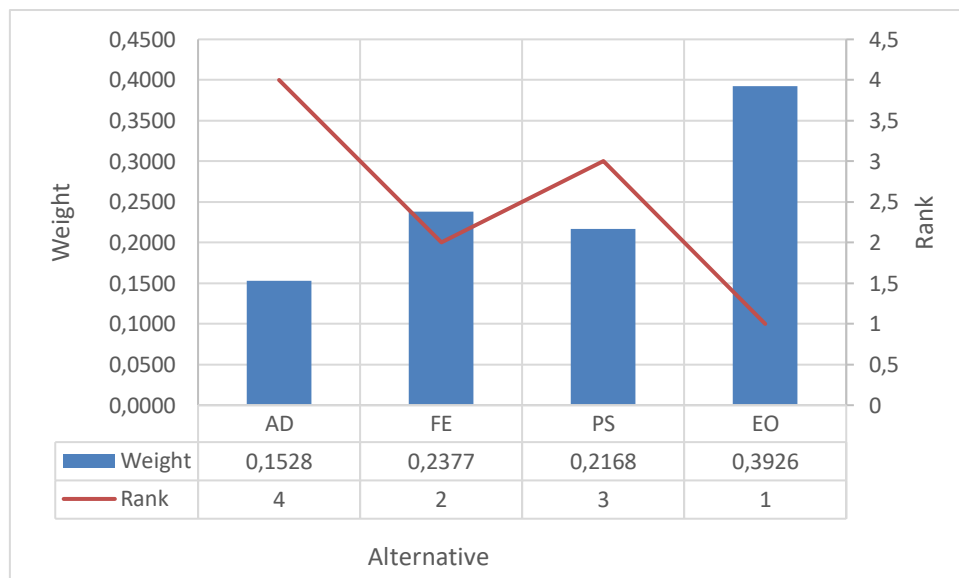
Figure 2. Weights and ranks of the alternatives

Sensitivity Analysis

To see the effect of the change in the weights of the main criteria on alternative rankings, sensitivity analysis is performed (Lee & Chang, 2018, p. 883-896; Wang et al., 2020, p. 101861). In this study, 4 scenarios have been set up to determine which alternative has priority in case the weight of the main criteria changes and the scenarios are as follows. The changes in the ranking of alternatives according to the scenarios are given in Figure 3.

- Scenario 1: The weights of main criteria obtained as a result of the calculation (T = 0.68, E/S = 0.26, C = 0.06).
- Scenario 2: While the weight of the technological criteria is the highest, the weights of the other main criteria are equal (T = 0.50, E/S = C = 0.25).
- Scenario 3: While the weight of the environmental/social criteria is the highest, the weights of the other main criteria are equal (E/S = 0.50, T = C = 0.25).
- Scenario 4: While the weight of the cost criterion is the highest, the weights of the other main criteria are equal (C = 0.50, T = E/S = 0.25).
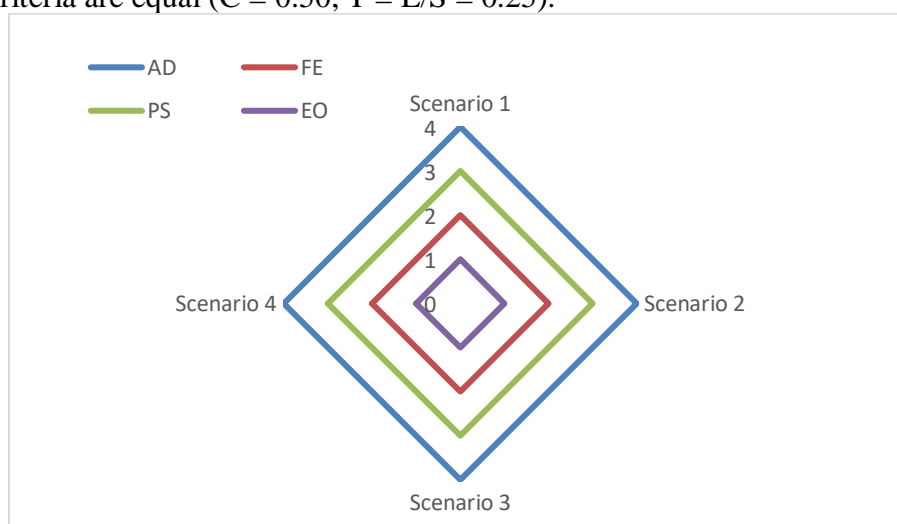
Figure 3. Chages of alternative ranks to criteria weights/sensitivity analysis

According to Figure 3, it is seen that the priority rank of the alternatives does not change in all scenarios. The fact that there is no change as a result of the sensitivity analysis indicates that the results are reliable (Dong et al., 2014, p. 400-408). It is concluded that the most important criterion in the selection of the methods considered in the treatment of wastewater containing dyes is technological. Because the costs of these methods are approximately the same and there is a waste to be managed in each method. Adsorption is a priority choice in terms of color removal. However, color is also removed with other methods. Methods such as Fenton cause the formation of different colors in the treatment of wastewater containing only light-colored dyes. However, adsorption was not determined primarily because it was not evaluated only in terms of color.

DISCUSSION

In the prioritization of 3 main criteria and 12 sub-criteria for the management of wastewater containing dyestuffs with AHP technique, technological (67.7%) has been obtained as the top

priority. Environmental/social and cost weights were obtained as 25.98% and 6.35%, respectively. One of the reasons for achieving such a result is that they are approximately the same in terms of cost, and the other is seen that environmental/social criteria is prioritized more compared to cost due to strict environmental regulations. In some studies, it has been stated that it is vital to consider technological, cost and environmental criteria to consider sustainability (Kamble et al., 2017, p.9; Arroyo & Molinos-Senante, 2018, p.819-827; Kamali et al., 2019, p.1511-1521). Moreover, there are also studies whose environmental criteria are determined to be more priority (Ilangkumaran et al., 2013, p. 619-641). Of course, such a result depends on both the study objective (even the alternatives chosen) and the decision-makers. T2 (COD removal, 45.74%), E4 (emission release, 42.73%) and C2 (operating cost, 53.26%) are the most important sub-criteria of each main criterion. This is an indication of the desire to achieve high efficiency in an alternative selection, to generate less waste after treatment and to have less operating costs.

Alternative ranking in this study was made using only the AHP technique. Electro-oxidation was chosen as the top priority among the alternatives considered. The main reason for choosing electro-oxidation is that it provides high removal efficiency, less emission/waste generation and it has cost in terms of electricity consumption and electrode use, but it requires a smaller reactor and less space since treatment takes place in a short time. Electro-oxidation has also been preferred in some studies compared to conventional methods (e.g. chemical coagulation) due to its higher efficiency, less sludge formation, less cost and its applicability to different wastewater (Bayramoglu et al., 2007, p. 155-161; Solak et al. ., 2014, p. 13-26; Uzunoglu et al., 2015, p. 303 315). Of course, all wastewater treatment alternatives have advantages and disadvantages. Every alternative has a solid, liquid, gaseous waste to be managed. However, high efficiency generally means less emission, higher cost and less permanent risk (Ucaroglu, 2002, p. 238). Among the alternatives discussed in this study, it was chosen by decision-makers who provided the best efficiency. This result is consistent with some studies in the literature (Mahjouri et al., 2017b, p.54-68; Piadeh et al., 2018, p. 1136-1150; Akhoundi & Nazif, 2018, p. 1350-1376).

With MCDM techniques, many factors (selected criteria and the number of criteria, selected alternatives and the number of alternatives, the opinions of the decision-makers, the technique used, etc.) affect the result (Ilangkumaran et al., 2013, p. 619-641). The same/different results can be obtained in each MCDM technique since each technique has a different approach in its alternative rank (Ozturk, 2018, p. 30517-30546). Studies similar to this study facilitate alternative choices. It also enables different criteria to be addressed (Arroyo & Molinos-Senante, 2018, p. 819-827).

CONCLUSION

Dyestuff-containing wastewater has both toxic content and colored content. It should be treated with appropriate methods in order to minimize its harmful effects on humans and the environment. When four different alternatives used in the treatment of wastewater containing dyestuffs were considered and compared in terms of different criteria, it was concluded that each alternative has priority. However, the electro-oxidation alternative has been determined as the top priority. Fenton and persulfate oxidation have been found to have approximately the same priority, albeit with a slight difference.

In future studies, different alternatives can be evaluated using different MCDM techniques and different main-sub criteria.

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ONE-POT HYDROPHOBIC SURFACE MODIFICATION OF THE STOEBER SiO$_2$ NANOPARTICLES

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Abstract

Synthetic amorphous silica (SiO$_2$) is widely employed in food outcomes and registered as a food additive with the European Union approved code E551. SiO$_2$ is employed as an anti-caking agent to maintain flow features of powdered items and also play a carrier role for odors and flavors in food and non-food products. In addition to that it was monitored that SiO$_2$, as in micrometer or nanosized form, was traced in diverse fields including chemical processes, polymers, industrial paints and adsorption techniques. Similarly in this report, we reveal the chemical and physical investigation of the nanosized SiO$_2$ formation with spontaneous surface modification using Stoeber method.

Engineered SiO$_2$ particles are frequently employed in various manufacturing processes due to their large surface area, ideal spherical geometry and swift synthesis method. Stoeber Process which is widely known as SiO$_2$ fabrication method, depends on the starting material performance during hydrolysis and condensation reactions in a highly basic environment. These propagation processes provides the formation of spherical SiO$_2$ particles which thermodynamically stable due to the low surface energy of the geometrical orientation. During the reactions a great deal of factors such as temperature, pH, mixing conditions, H$_2$O amount, precursor concentration affect the formation of Stoeber SiO$_2$ particles.

In this study, concentration, synthesis conditions, pH value, H$_2$O amount were predetermined and TEOS (tetraethoxysilane) was templated as starting material. During the initial stages of the hydrolysis-condensation reaction, simultaneously hydrophobic actor, octyltriethoxysilane (OCTEO) was introduced for hydrophobic surface modification. The geometry and morphological features of the SiO$_2$ particles obtained by SEM analysis and particle size distribution was calculated. Thermal demeanor of the particles unveiled by TG-DTA together with surface modification which was determined comparatively by FT-IR method. Results showed that the simultaneous reaction of two different silane compound provides expected modification but since hydrolysis and condensation rates of each precursor is different, agglomeration behaviour was reflected as a side effect. Therefore we can conclude that simultaneous surface modification of Stoeber particles may be conducted with other silanes by observing the size, surface feature, moisture adsorption parameters for a desired SiO$_2$ synthesis.

Keywords: Stoeber process, SiO$_2$ nanoparticles, surface modification, sol-gel method

Introduction

Silica (SiO_2) nanoparticles are nanoscale materials where utilized as humidity adsorber, thickener or viscosity agent along with different novel techniques. Wide area applications for SiO_2 contain surface applications, composite materials, adsorbents, fluorescent sensors (Arslan, Aytac, and Uyar 2017), food applications (Lee et al.2017) and also biomedical applications (Li et al.2012) with theranostic approach. By the help of special synthesis method such as Stoeber technique, nanoparticles with narrow size distribution, engineered surface properties and desired doping level can be obtained. Silica nanoparticles vary the behaviours of nanoscale surfaces or bulk materials either as a component of the material or as a filler in subsequent steps. Since it is utilized as filler or surface modifier, nanoparticle-matrix compatibility and composite behavior depending on the surface chemistry of the particles should be arranged (Murray et al.2010).

In order to provide the morphological control and desired chemical characteristics, for SiO_2 nanoparticles, intensive work has been carried out in recent years aiming the compatible surface features of the SiO_2. However, SiO_2 particles have a strong tendency to agglomerate in solvent systems (Wang et al., 2015), which negatively affects the uniformity and monodispersity when used as an additive. Therefore when silane precursors are employed for SiO_2 production, surface modification is vital for providing a uniform shape control and preventing the agglomeration. By hydrolysis reactions of the silane precursor, SiO_2 is bound to the resulting silanol due to the hydrolysis (Zhang et al.2014). As a result of these reactions the hydroxyl group on the SiO_2 surface play a great role for almost every application. Generally hydrophilic to hydrophobic modification is relatively the most utilized techniques for the surface transformation of the SiO_2 nanoparticles (Wang et al.2015).
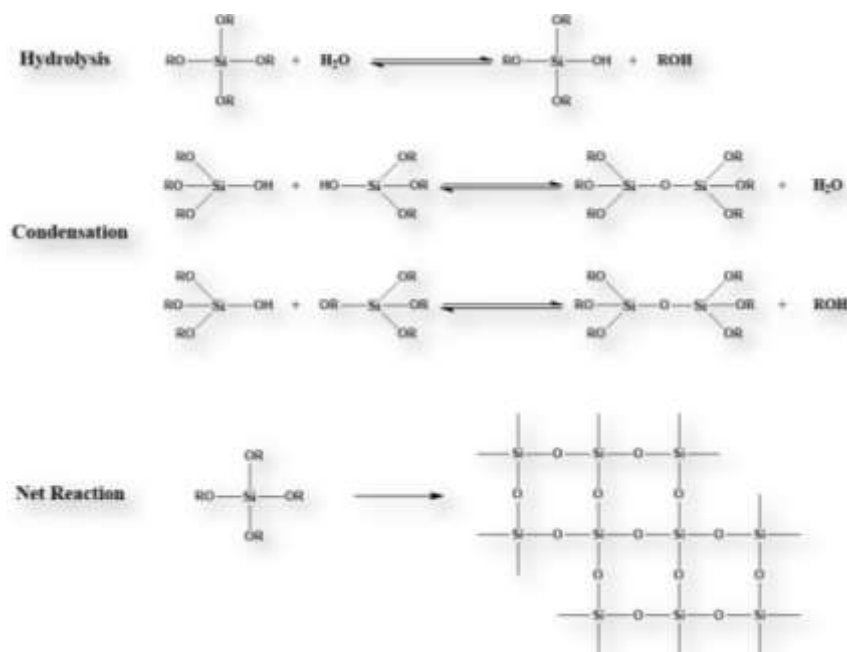
Figure 1. Hydrolysis condensation steps for Sol Gel reaction and silicate network formation

Sol gel technique is one of the most suitable methods for the fabrication of Si-O-Si bond since silicon nanoparticles or silicon gel formed by hydrolysis and condensation reactions of alkoxysilanes. It enables the development of a three-dimensional cross-linked inorganic network structure by using $Si(OR)_4$ or organically modified $Si(OR)_3R$ precursors as in Figure 1 (Demircan, Kibarer, and Rzayev 2015). In this procedure, alkoxide chemistry governs the reactions and lead the formation of synthetic fibers, nanoparticles, aerogels or similar other materials. Due to the saturation of the silicon, hydrolysis reactions of silicon alkoxides are very slow and should be accelerated by acidic or basic catalysts in a controlled manner (Stöber, Fink, and Bohn 1968). Due to the effect of catalysts on the resulting silicate network structure is governed as more polymer-like expanded gel form by acidic and as more like particles by basic catalysis.

Sol-gel materials are fabricated not only by the SiO_2 based chemical structure but also with other transition metals. Additionally SiO_2 and modified SiO_2 materials obtained by the inorganic polymerization process which are functional materials with an impressive range of applications including controlled release, protective coatings, adsorption, biotechnology, energy saving, medical applications (Ciriminna et al.2013).
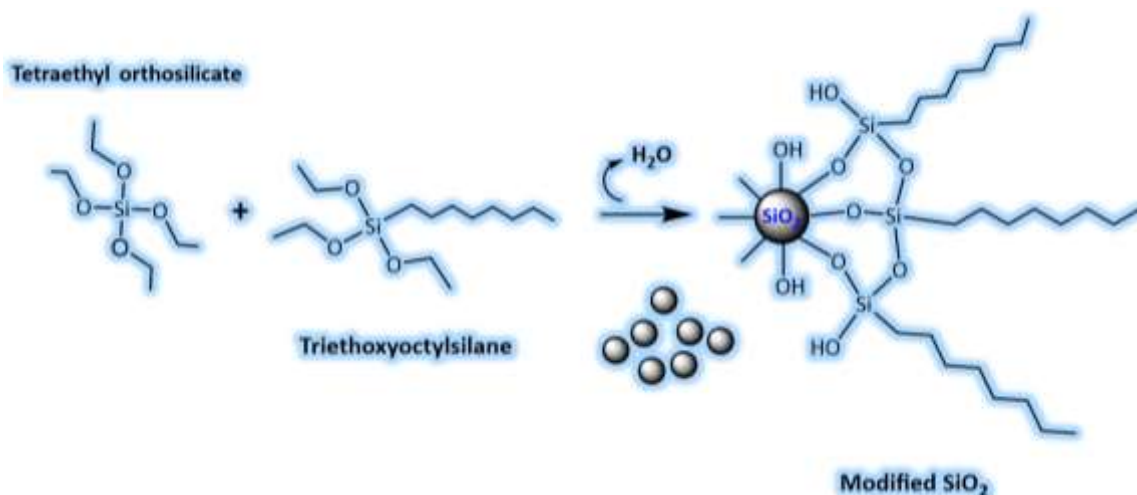
Figure 2. Spontaneous surface modification of the SiO_2 nanoparticles

In this study we reveal the spontaneous surface modification of the SiO_2 nanoaprticles obtained by modified Stoeber technique. Concentration, temperature, modification of synthesis technique and beginning conditions together with time and pH range were investigated. Results showed that spontaneous reactions of the tetraalkoxy silane and alkyl alkoxysilane showed varied hydrolysis and condensation behaviour and surface modification studies are greatly depend on this reaction behaviours. Therefore alkyl alkoxy silane reactions should be modulated on the basis of tetraalkoxy silane polymeric propagation.

Materials and Method

Chemicals: Tetraethoxysilane (98%) (TEOS) were purchased from Acros Organics. Octyl triethoxysilane (OCTEO) were kindly provided by Degussa-Dynasilane. Distilled water were utilized for the hydrolysis reactions. Ethanol (technical), Isopropyl alcohol (99,95%), NH_3 (26%)

have been received from Sigma-Aldrich. Obtained nanoparticles were washed with EtOH and acetone and dried under room condiitons.

Methods and Characterization: Shimadzu-IRTracer-100 with ATR module was employed used to measure the surface features and modification properties of the obtained and room temperature dried nanoparticles. Morphology and size investigation were conducted by Scanning Electron Microscopy (SEM) with ZEISS GEMINI 500 device. SEM Samples were placed on Cu tape and coated with 3-5 nm Au prior to the investigations. Thermal investigations were conducted by Seiko II-7300 under N_2 atmosphere by 10 °C/min heating rate. Particle size analysis were investigated by counting the 50 particle and plotting their frequencies versus particles sizes. Non linear analysis were applied to find the standart deviation.

Synthesis of Nanoparticles: Nanosized SiO_2 particles were fabricated with sol-gel method using Stoeber technique in one pot reaction. The synthesis was carried out by a modified route for emphasizing the importance of different parameters. Firstly, an ambient atmosphere were provided during the synthesis by modulating the synthesis route. Especially at the early stages of the nucleation by hydrolysis-condensation reactions, cold trap was applied. This cold trap allows us to control the propagation of the polymerization reactions. Basically $IPA/H_2O/NH_3$ mixture was prepared between 0-5 °C (cold trap) and also another method was applied at 25 °C (room temperature) for a certain period of time to prepare the same solution. In a 250 mL flask, proportions of the $IPA/H_2O/NH_3$ reactants were 4/1/0.75 and this mixture were stirred at 400 rpm for 15 minutes. Then, according to the same proportion 0.35 for TEOS and OCTEO were added seperately and respectively. After the silane addition reaction were allowed to continue at 400 rpm for another 6 hours. At the end, solution was centrifuged (HITACHI CR22N, Japan) (10000 rpm, 5 minutes) and washed with EtOH and acetone respectively and dried at room conditions.

Results and discussion

Nanomaterial synthesis, especially nanoparticle fabrication can be successfully employed by bottom up and top down methods. Among these techniques bottom up methods are providing precise control on the reaction and designed shape modulation on the final nanomaterial. Especially precursor design, decomposition features or polymerization behaviours of the beginning materials may enhance the unusual characteristics of final nanostructure. As one of bottom up method, for controlling the size and surface features of SiO_2 nanoparticles Stoeber technique shines brightly. It is relatively simple faster and very effective for the fabrication of monodispersed nanoparticles. By the precise control on the reaction parameters monodispersed nanoparticle suspensions are obtained. Stoeber method basically involves the hydrolysis of an alkoxide precursor (such as tetraethyl orthosilicate) in alcohol solution with ammonia as a catalyst (Stöber et al. 1968).

In this study, we have established a model and developed the details of the SiO_2 nanoparticle formation concerning with the temperature effect. Stoeber technique was modified and beginning conditions of the nanoaprticle formation was varied. In the first modification cold trap was applied to the sol-gel precursors and growth of the nanoparticles were investigated. In another modification cold trap was removed and room conditions were applied for the nanoparticle fabrication. Results

revealed that the morphology, size distribution, surface properties, thermal properties, atomic composition of the total structure is deeply varied due to the parameter modifications.
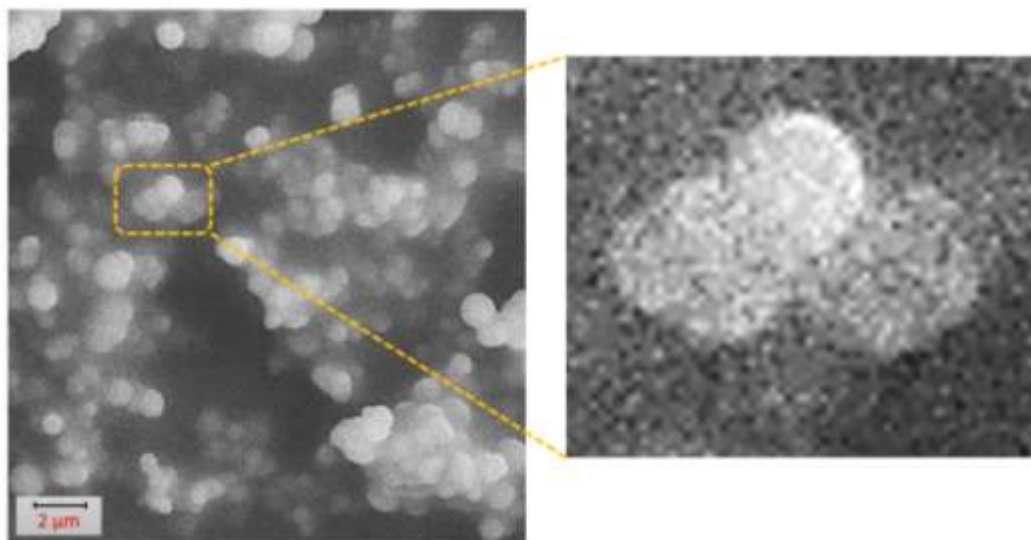
Figure 3. Octyl triethoxy silane modified nanoparticles by cold trap

During the reaction procedure $IPA/H_2O/NH_3$ mixture was prepared as the particle formation matrix for the silane precursor. It is widely known that silane precursors show slow hydrolysis/condensation reaction behaviour without acid/base catalysis. Since acidic catalysis increases the hydrolysis reaction rate, long and elongated polymeric structure is obtained. Inversely basic catalysis provides rounded and particles like shapes due to the increased condensation rate. When two different silane is coherently hydrolized, due to the side groups hydrolysis and condensation reaction rates differ and , if available, side groups are attached to the final spherical nanoparticle due to the thermodynamical reasons. Therefore –OH side groups on the naked SiO_2 nanoparticle obtained from the single TEOS precursor are disappeared with organically modified side groups. Investigations were focused on the one pot surface modifications in this study and interesting results were obtained.
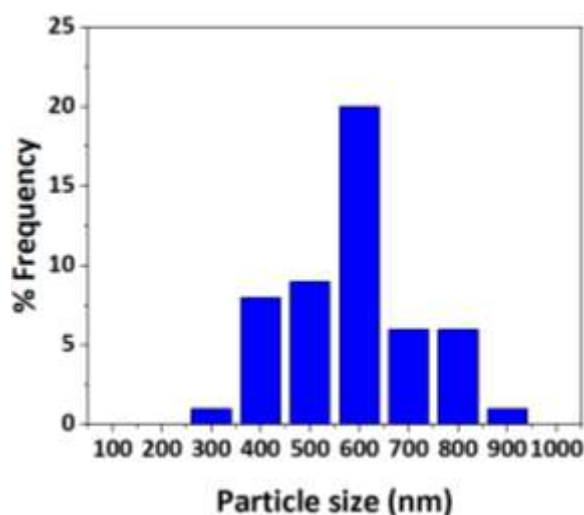
Figure 4. SiO$_2$ nanoparticle size distribution obtained by cold trap method

In Figure 3, octyl triethoxysilane modified nanoparticles SEM investigation is revealed. Results are clearly showing that spherical and relatively monodispersed nanoparticles are obtained via cold trap modification. Still some discrepancies are observable which is not a common behaviour in Stoeber fabrication. Images emphasize the gel like matrix where SiO$_2$ nanoparticles are embedded. This is possibly due to the slow hydrolysis-condensation reactions of the TEOS and OCTEO precursors. Once cold trap is applied, chaotic and competitive basic environment allows the continous sol-gel condensation reactions but spontaneously due to the decreased solubility and decreased removal of alcoholic side products, enhanced organic pool is formed. Since octyl groups are also providing an organic environment, SiO$_2$ nanoparticles keep forming but it is noticeable that particle size growth is decelerated. Therefore particles size distribution is relatively broad and far from monodispersity (Figure 4).
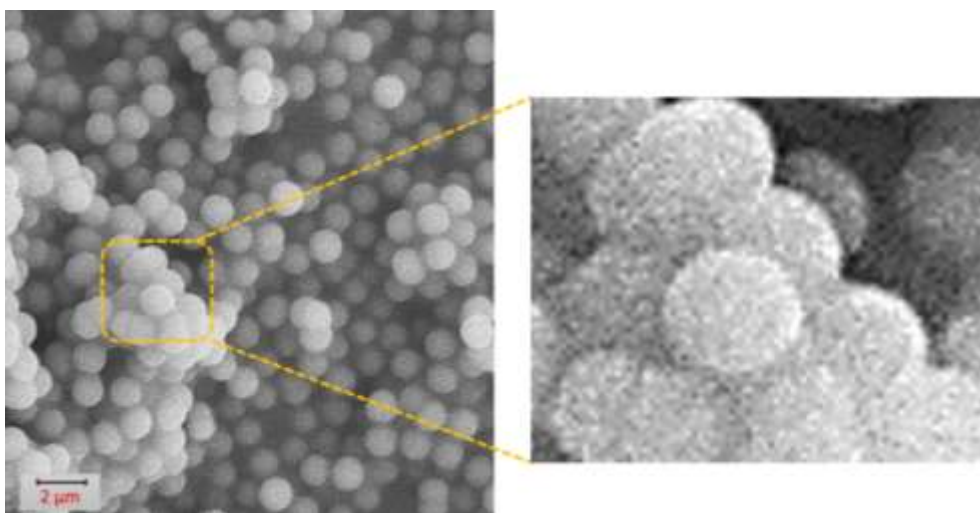
Figure 5. SEM investigation for the SiO$_2$ nanoparticles by room temperature synthesis

Obtained SEM images also reveal that, SiO$_2$ nanoparticles are available in organic clusters separately. These clusters are veiled with these gel like organic coverage and solid particles are only visible since their atomic weight is higher. Under normal conditions extreme surface modification can cause problems for the structural, geometrical and distributional detection of the nanoparticles but in this synthesis procedure these details are evaluated as distinctive characters of the cold trap synthesis method. Particle size analysis shows that average size for the fabricated structures are around 600 nm.

Figure 5 reveals the morphological structure, surface and monodispersity features of the synthesized SiO$_2$ nanoparticles by Stoeber method. In this modified technique room temperature was utilized during the fabrication procedure. SEM images reveal that same organic pool seen in cold trap method is not available in these nanoparticles.
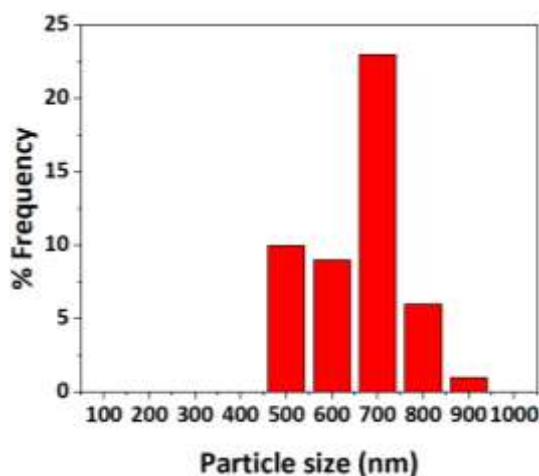
Figure 6. Size distribution for SiO_2 nanoparticles obtained by room temperature synthesis

Even though nanoparticles are not separated one by one, intense black organic structure was not detected. Additionally investigated average particle size distribution unveils that the nanoparticles are greater than the nanoaprticles obtained by cold trap method. Statistical results shown that average 700 nm nanoparticles are seen which is relatively more monodispersed.
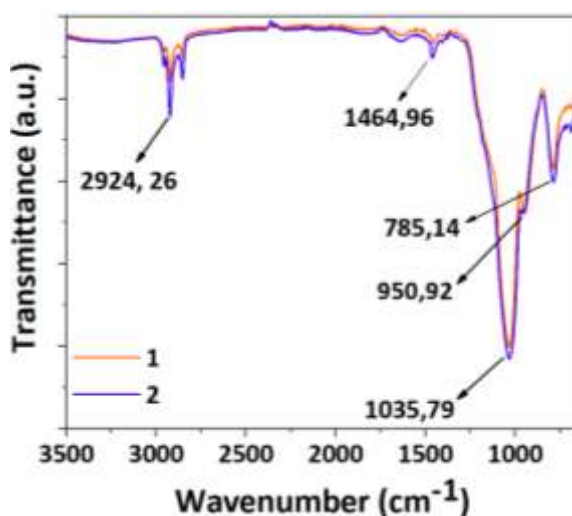
Figure 8. FT-IR spectras of cold trapped and room temperature applied nanoparticles

Particles are not trapped in organic environment instead they are more broad and shallow. Single magnified nanoparticle image also confirm the same observations. Investigations clealry showed that room temperature synthesis allows the regular hydolysis-condensation reactions of the both TEOS and OCTEO precursor for the fabrication of modified SiO_2 nanoparticles. Alcoholic side groups are being removed during the reaction procedure and similar chaotic reaction medium entrapping the long chain alkyl groups is not visible. Since deceleration of the inorganic polymeric propagation is removed by room temperature particle growth rate is increased with increased nanoparticle size distribution.

Surface characteristics of both nanoparticles are investigated by FT-IR-ATR. Results showed that long alkyl groups are more intense and shows visible peaks as reflected in Figure 8. It is clear that peaks in 2900-300 cm^{-1} region belongs to the hydrogens of the carbon bonded skeleton. Peaks at 1035, 950 and 785 cm^{-1} represents (Si – O – Si), (Si – OH) and another (Si– O – Si) bending for the both nanoparticles. FT-IR spectras are almost identical with slight variations since organic modifier amount is higher in cold trapped nanoparticles which can be differentiated with more intense peaks.

Thermal investigation of the fabricated nanoparticles showed that decomposition pattern of the nanoparticles are highly similar except the amounts are different. As mentioned earlier, cold trapped synthesis provides more organic environment deposits on the SiO$_2$ nanoparticles. Additionally higher surface area due to the lower size in cold trapped nanoparticles would allow more organic modification on the SiO$_2$ nanoparticles. In Figure 9, TGA patterns are observable for both nanoparticles where cold trapped nanoparticle weight loss is greater (32%) than the room temperature applied nanoparticles (26%). DTG investigation shows that 2 different noticeable step is available for weight loss which is similar in both nanoparticles. First weight loss occurs at around 100-150 °C where water and other volatile content is removed. Additionally second weight loss at around 450-550 °C corresponds to the octyl group removal from the surface of the nanoparticles. After this region there is no noticeable weight loss which provides the information about the final surface characteristics of the silica nanoparticles.
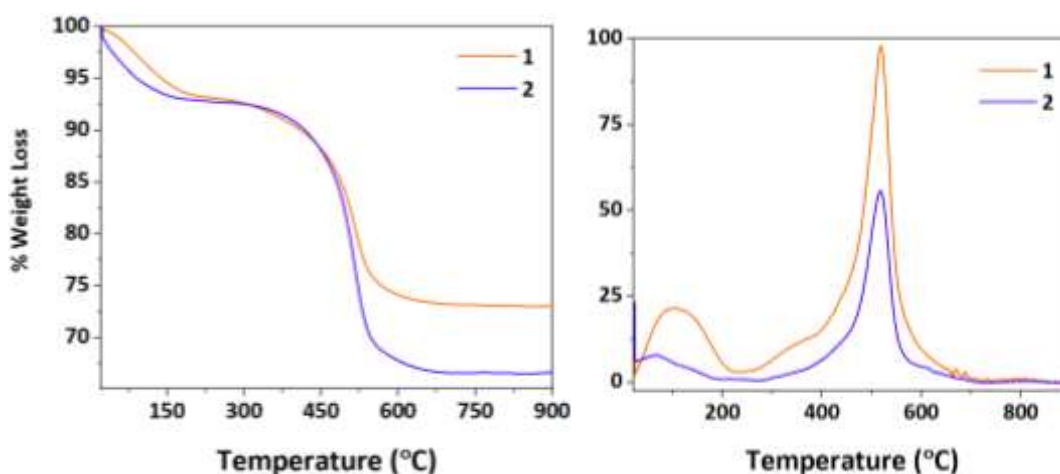
Figure 9. TGA and DTG graphs of the 1) room temperature applied 2) cold trapped nanoparticles

Conclusion

As a results, investigations revealed that two different modified Stoeber method provide varied particle size, monodispersity and surface modification results. Cold trap changes all the hydrolysis-condensation reactions and cause deceleration and deviation in monodispersity in particle growth due the bold organic environment and low solubility. Additionally agglomeration like results were obtianed in cold trap synthesis when it compared to room temperature applied conditions. Temperature increased that monodispersity and narrowed the deviation from the nanoparticle size

distribution. One must stress that that this is different than agglomeration since not surface attachment but organic pool entrapment was obtained. Thermal investigations also supported the similar observations which unveils the chemical behaviours of the modified Stoeber methods for nanosized SiO_2 fabrication.

Acknowledgement

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EFFECT OF MULTIVITAMINS AND PROPRANOLOL ON VOLUNTARY MOVEMENT IN WISTAR RATS

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Abstract
Voluntary movements are controlled by the central nervous system, and damage to body parts that control voluntary movements can lead to movement disorders. Propranolol and several vitamins have been known to cross the blood brain barrier, but their central nervous system properties remain poorly understood. In this present research, the effect of propranolol and multivitamins on voluntary movement in wistar rats was investigated. 20 adult male wistar rats weighing between 180-200g were obtained and used for this study. The rats were divided into four groups of 5 rats per group. One group received propranolol only, second group received multivitamins only, third group received a combination of propranolol and multivitamins while the final group (control) received only normal saline for the study period. The rats were so treated for a period of 21 days after which the rat's voluntary movements were determined by counting the number of completed cage line crossing by the rats. Results obtained from this study showed that administration of propranolol to experimental rats led to significant ($p<0.05$) decrease in voluntary movement while multivitamins had opposite effect by leading to significant ($p<0.05$) increase in voluntary movement of the experimental animals when compared to the control group. However, rats administered a combination of propranolol and multivitamins had no significant difference in voluntary movements when compared to the control. The results obtained from this investigation could prove useful to clinicians especially regarding the undesirable effects of propranolol and essential roles of vitamins in treatment of movement disorders.

Key words: multivitamins, propranolol, voluntary movement

INTRODUCTION

Voluntary movements are the intended execution of an action generated centrally (Johansson and Flanagan, 2008). It is the expression of thoughts through action. Voluntary movement may be as a result of physiologic needs such as thirst or hunger, or cause by higher-order deliberations based on one's own desires and beliefs. What matters for voluntary movements is the fact that the individual has a goal and that the goal determines the movements resulting in its achievements (Pfurtscheller *et al*., 2012a; Pfurtscheller *et al*., 2012b).
Virtually, all areas of the central nervous system are involved in this process. The main flow of information may begin in cognitive cortical areas in the frontal lobe, or in sensory cortical areas in the occipital, parietal and temporal lobes. Ultimately, the motor areas in the frontal lobe send information through the brainstem, and spinal cord to the motor neurons (Brass and Haggard, 2010). The basal ganglia, and the cerebellum have connections that are reciprocal with most of the

structures and therefore, act as a supporting function. Voluntary movements differ from reflexes and basic locomotor rhythms in several important ways.

By definition, voluntary movements are intentional (their onset is due to an internal decision to carry out a task) whereas reflexes are not intentional, automatically triggered decision by the external stimuli. Even when a voluntary movement is directed toward an object, such as reaching out for a bag, the cause of action, or movement is not the object but due to an internal decision to have interaction with that object. The object presence only provides the opportunity for such action. Voluntary movements, or actions involve decision and choices between alternatives, including the choice not to act (Johansson and Flanagan, 2008). Furthermore, they are organized to achieve some goals in the near or distant future.

Vitamins are essential group of organic compounds for normal bodily functioning but they are not endogenously synthesized by the body, and therefore have to be absolved in small quantities from the diet. Adequate amounts are required by humans and these are 13 different vitamins in number: nine water-soluble vitamins which include vitamin C, thiamine (B1), niacin (B3), riboflavin (B2), pantothenic acid (B5), folate (B9), vitamin B6, and vitamin B12, and vitamins that are fat-soluble vitamins A, D, E, and K (Lori and Grosvenor, 2010). There are many benefits of vitamins and they have a major impact on overall health. Multivitamins are supplements containing many different vitamins, and sometimes other nutritional elements. Several vitamins are known to have an effect on the functioning of the central nervous system (Institute of Medicine, 1998; Institute of Medicine, 2000) and could play important roles in the initiation of voluntary movement.

Propranolol is a non-selective, competitive antagonist at beta-adrenergic receptors. It binds with high affinity to both beta-1 and beta-2 receptor subtypes but has lower affinity at the beta-3 subtype. Propranolol exerts its effects primarily by blocking the action of the endogenous catecholamines, epinephrine, and norepinephrine, at beta-adrenergic receptors. The magnitude of the effect of propranolol is dependent on the degree of sympathetic tone. Propranolol also blocks the effects of drugs with beta-adrenergic receptor agonist activity. Propranolol and other beta-adrenergic receptor antagonists are widely used to treat cardiovascular disorders including hypertension, angina, arrhythmias, myocardial infarction, congestive heart failure, and hypertrophic subaortic stenosis. Propranolol is also used in management of non-cardiovascular conditions such as hyperthyroidism, pheochromocytoma, migraine, anxiety, and essential tremor (Hoffman, 2001).

Propranolol use for treatment of infantile hemangioma was discovered in 2008 and, this has revolutionized management of the condition. Propranolol is an efficacious therapeutic agent, and it is safe and tolerated very well by infants (Cyrulnik and Glick, 2015). Propranolol is known to cross blood-brain barrier (Steenen *et al.,* 2015), thus, it is possible that it may exert some central nervous system properties in addition to its known peripheral activities. This present study was carried out to determine the effect of multivitamins and propranolol on voluntary movements in Wistar rats.

Statement of Problem

Voluntary movement is coordinated by the central nervous system and is essential to living. Disorders of voluntary movements are common neurological conditions with importance to clinicians and scientists. Studies have shown that both multivitamins and propranolol cross the blood-brain barrier and exert effects on the central nervous system. There is, however, a paucity of knowledge on the effect of multivitamins and propranolol on how they affect voluntary movements in living organisms. This study was therefore designed to determine the effect of multivitamins and propranolol on voluntary movements in Wistar rats.

Aim of the Study
To determine the effect of multivitamins and propranolol on voluntary movement in Wistar rats.

Specific Objectives
The study objectives are to;
1. Obtain and group experimental animals
2. Administer varying doses of multivitamins and propranolol to experimental animals
3. Determine voluntary movement in experimental rats administered multivitamins and propranolol using standard procedures

Significance of the Study
The results obtained from this study will provide relevant information regarding the effect of multivitamins and propranolol on voluntary movement. This information will be useful in determining how these drugs can be useful in treating movement disorders in the future and will serve as an information source for future research.

Materials and Methods

Materials
- 40 Adult male Wistar rats obtained from animal house, Delta State University
- Steel Cage
- Multivitamins purchased from a pharmacy in Abraka
- Propanolol purchased from Pharmacy in Abraka
- Open field box
- Markers

Methods

Experimental animals
The animals used in this study were male albino Wistar rats weighing between 180-200g. They were maintained at the Laboratory Animal Centre of the Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria.

Inclusion criteria
Rats that were healthy without any disease condition or disorder were included in this study.

Exclusion criteria
Rats that were infected with any form of disease or disorder were excluded from this study.

Animal care and handling
Prior to the experiment, the rats were kept in steel cages under normal laboratory conditions and ambient temperature. The rats were fed with standard normal feeds and clean water throughout the experiments. The animals were allowed a period of two weeks to acclimatize to the environment before the commencement of the administration. The animals were maintained in accordance with the guidelines approved by the Animal Ethics Committee, Delta State University, Abraka, Nigeria.

Determination of drug doses

A known quantity of the drug was dissolved in a volume of normal saline, to obtain the stock solution from where the dose (mg/kg body weight) to be administered was determined according to the expression:

Vol. (ml) = D x W x 1/C

Where;

D = the required dose in mg/kg,

W = the weight of the animal in kilograms and

C = the concentration of the stock solution in mg/ml.

This dose was determined from both the multivitamins and propranolol stock solutions, respectively.

Animal grouping and drug administration

The rats were organized into four groups of 5 animals in each group. The animals were grouped as follows:

Group 1: Control group-administered normal saline

Group 2: Experimental group-administered multivitamins only

Group 3: Experimental group-administered propranolol only

Group 4:

Experimental group-administered both multivitamins and propranolol

The drugs were administered to the rats intraperitoneally using an oral cannula for a period of three weeks (i.e. 21 days). 0.4ml of propranolol and 0.9ml of multivitamins were administered daily.

Determination of rat's voluntary movement

After the period of administration, voluntary movement of the rats was determined using an open field test. The open-field box with dimensions 72cm by 72cm was used. Each small box on the floor of the open field box was 18cm. After completion of the administration, the animals were placed in the center of the box, and movement of the animals was observed. Each line it crossed with its four legs was counted as one complete movement.

Statistical Analysis

The results were expressed as Mean ± SD for n=5 rats/group. The data were evaluated using a one-way analysis of variance (ANOVA) and the result was considered statistically significant at $p<0.05$.

RESULTS

Table 1: Effect of propranolol and multivitamins on voluntary movement

Groups	Voluntary movement (Line crossing)
Control	16.40±5.04[a]
Propranolol only	6.20±3.89[b]
Multivitamins only	24.60±13.83[c]
Propranolol + Multivitamins	19.00±9.61[a]

Values are expressed as Mean ± SD for n = 5 rats per group. Values that bear a different superscript on a column differ significantly (p<0.05) when subjected to one-way analysis of variance (ANOVA)

DISCUSSION

Voluntary movements are manifestations of a centrally generated intention to act. It is the expression of thoughts through action. Voluntary movement may be caused by physiologic needs such as thirst or hunger, or deliberations from higher-order based on one's own desires and beliefs. What counts for voluntary actions is that the individual has a general aim that determines movements leading to its achievements (Pfurtscheller *et al*., 2012a; Pfurtscheller *et al*., 2012b).

In this present study, the effect of propranolol and multivitamins on voluntary movement in rats was investigated. Results obtained from this study (Table 4.1) showed that administration of propranolol to experimental rats led to a significant ($p<0.05$) decrease in voluntary movement while multivitamins had the opposite effect by leading to a significant ($p<0.05$) increase in voluntary movement of the experimental animals when compared to rats that were administered normal saline (control group).

After the 21-days administration of propranolol to the experimental rats, their voluntary movement (6.20±3.89) (as measured by the cage line crossing experiment) was significantly ($p<0.05$) lower than rats in the control group (16.40±5.04), thus showing that the drug, propranolol, has a significant inhibitory effect on voluntary movement in such rats. The result from this study is largely in agreement with previous reports that noted suppressive effects on locomotor activity in mice treated with propranolol (Eric *et al.,* 1995; Huaying *et al.,* 2011). Propranolol is a non-selective, competitive antagonist at beta-adrenergic receptors. Propranolol is able to cross the blood-brain barrier, where it exerts effects in the central nervous system (Steenen *et al*., 2016). Propranolol is known to exert its effects primarily by blocking the action of the endogenous catecholamines, epinephrine, and norepinephrine, at beta-adrenergic receptors (Al-Majed *et al*., 2017). The result from this present study is therefore a further proof of the possible central nervous system inhibitory property of propranolol.

On the other hand, the administration of multivitamins to the experimental rats for the 21-day period led to a significant increase ($p<0.05$) in the rats' voluntary movement (24.60±13.83) when compared to the control group (16.40±5.04), showing that multivitamins stimulate voluntary movement in experimental rats. Several vitamins are actively transported across the blood-brain barrier and/or choroid plexus by dedicated transport mechanisms, where they are known to exert their central nervous system effects (Spector, 2014). Several vitamins are necessary for the synthesis of important neurotransmitters, co-enzymes, and other important metabolites in the central nervous system, which could explain their stimulatory effect on CNS-controlled voluntary movement. Earlier studies had reported the gross behavioral activation in rats following treatments with ascorbic acid (Abbasnejad and Shahsevari 2013), behavioral excitatory effects in low doses of administered ascorbic acid in Wistar rats (Ezenwanne and Anuka, 1991).

Interestingly, the group administered both propranolol and multivitamins did not exhibit a significant difference in voluntary movement (19.00±9.61) when compared to the control group (16.40±5.04). This could be due to the combined effect of the two drugs on the central nervous system. While propranolol would have an inhibitory effect on voluntary movement, multivitamins would have stimulatory effects in the experiment leading to opposing effects by the two drugs.

Intake of multivitamins can therefore be important in stimulating voluntary movement to normal levels in situations in which voluntary movement is inhibited, such as during propranolol intake.

CONCLUSION
The results obtained from this present study, study concluded that the drug, propranolol has a significant inhibitory effect on voluntary movement, while multivitamins stimulate the central nervous system to support voluntary movement in experimental rats. This information would be very useful to clinicians in the treatment of movement disorders.

CONTRIBUTIONS TO KNOWLEDGE
i. Multivitamins have stimulatory effects on the central nervous system; intake improved voluntary movement.
ii. Propranolol has an inhibitory effect on the central nervous system, its intake inhibits voluntary movements.
iii. Administration of both multivitamins and propranolol results in drug antagonism with each becoming non-effective on the central nervous system and consequently on voluntary movements.

PROSPECT FOR FURTHER STUDIES
Several aspects of these research discoveries are novel and suggest the need for further investigative studies.

COMPETING INTERESTS
Authors declared not having competing interest in existence.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

B TİP HORTUMUN KURUTMA MODELİNİN ARAŞTIRILMASI

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Özet

İtfaiye istasyonlarında kullanılmakta olan yangına müdahale hortumları (B tip) uzun süreli kullanımları için kurutularak depolanmalıdır. Günümüzde, itfaiye hortumları kullanımlarından sonra yıkanmakta ve açık havada kurumaları için asılmaktadırlar. Kullanılan hortumlar, müdahale esnasında da sürekli su ile temasta olduğundan, çalışmanın gerçeğe yakınlığını sağlamak amacıyla hortumlar 30 dakika suda bekletilmiş ve su emdirme işlemi yapılmıştır. Mikrodalga kurutucu ve bantlı tip tünel kurutucuda yapılan kurutma deneylerinden elde edilen veriler ile matematiksel modellerden elde edilen sonuçlar karşılaştırılmış ve her deney için uygun olan matematiksel modeller tespit edilmiştir. Kullanılan matematiksel modeller; Approximation of Diffusion, Verma et al., Midilli et al., Two Term Exponantial ve Logarithmic modelleridir. Kullanılan matematiksel modelin uygunluğunu değerlendirmek için korelasyon katsayısı (r), standart sapma (e_s) ve ki-kare (χ^2) değerleri incelenmiştir. Tüm sonuçlar karşılaştırıldığında her iki kurutucu için Logarithmic modelinin uygun olduğu anlaşılmıştır.

Anahtar Kelimeler: Bantlı tip kurutucu, Mikrodalga, Modelleme, Logarithmic

INVESTIGATION OF THE DRYING MODEL OF TYPE B HOSE

Abstract

Fire-fighting hoses (type B) used in fire stations should be dried and stored for long-term use. Nowadays, firefighting hoses are washed after use and hung to dry in the open air. Since the hoses used are constantly in contact with water during the intervention, the hoses were kept in water for 30 minutes and water bathed in order to ensure the reality of the operation. The results obtained from the drying experiments performed in the microwave dryer and the conveyor dryer were compared with the results obtained from the mathematical models and suitable mathematical models for each experiment were determined. Mathematical models used; Approximation of Diffusion, Verma et al., Midilli et al., Two Term Exponantial and Logarithmic models. Correlation coefficient (r), standard deviation (es) and chi-square (χ^2) values were examined to evaluate the suitability of the mathematical model used. When all the results are compared, it is understood that the Logarithmic model is suitable for both dryers.

Keywords: Conveyor Dryer, Microwave, Mathematical Models, Logarithmic

GİRİŞ

Kurutma, numunenin içerisinde bulunan nemin sınır değerine kadar buharlaştırılarak numuneden uzaklaştırılmasıdır (Karaaslan ve Tunçer, 2009). Kurutma işlemi, eski zamanlardan günümüze sıklıkla kullanılmakta olan ürün işleme yöntemlerindendir. Gölgede veya güneş altında doğal yöntemler yardımıyla kurutma özellikle en yaygın tercih edilen metotlardandır. Kurutmanın tercih edilirliği ise, numunenin dayanıklılığının arttırılması ve nemin uzaklaştırılması ile ağırlığın azaltılmasıdır. Özellikle, kısa ömre sahip ürünlere uygulanan kurutma işlemi, dayanıklılığı da arttırmaktadır (Eren ve ark., 2005).

İtfaiye istasyonlarında öncelikli olarak yangına müdahale etmek üzere ilaveten su çekme, su verme vb. gibi işlemlerde çeşitli hortumlar kullanılmaktadır. Hortumlar kullanıldığı işlem çeşidine göre farklı çeşitlerde üretilmektedir. Bu çalışma için, itfaiye istasyonlarında yangına müdahale amacı ile kullanılan B ve C tipi hortumlar (Şekil 1.1.) incelenmiştir (İstanbul Büyükşehir Belediyesi İtfaiye Dairesi Başkanlığı [İstanbul İTDB], 2014).

Şekil 1.1. B ve C tipi hortumlar (İstanbul İTDB, 2014)

Kurutma eğrilerini açıklayan ince tabaka matematiksel modeller, teorik modeller, kısmi-teorik modeller ve ampirik modeller olarak incelenmektedir (Bingöl ve Devres, 2010; Sharaf-Eldeen ve Hamdy, 1979). Teorik modeller genel anlamda nem transferi ile iç direnç mekanizmalarını açıklarken, diğer modeller dış dirençleri ile nem transferini açıklamaktadır. Bunlara ilave olarak kısmi-teorik modellere Fick kanununun analizi ile ulaşılabilirken ampirik modeller ise nem içeriği ve zamana bağlıdır (Babalis ve ark., 2006).

Bu çalışmada, yapılmış olan kurutma denemeleri sonrasında yangına müdahale hortumu numunesinin nem içeriklerinde meydana gelen değişimler belirlenmiştir. Bu nem değişimleri 5 farklı matematiksel model ile uygunluğu incelenmiştir (Çelen ve Karataşer, 2019).

2. MATERYAL ve YÖNTEM

Bu çalışma için, herhangi bir olayda daha önce hiç kullanılmamış yangına müdahale hortumu tercih edilmiştir. Yangına müdahale hortumları 20 m. uzunluğunda ve rakorlu olarak bulunmaktadır. Denemeler için yangına müdahale hortumunda bulunan rakorlar sökülmüş ve hortumdan 20 cm. uzunluğunda hortum numunesi (Şekil 2.1.) kesilerek kullanılmıştır (Dağlı, 2020).

Şekil 2.1. 20 cm. uzunluğunda yangına müdahale hortumu numunesi (Dağlı, 2020)

Normal kullanım durumunda hortumlar sürekli su ile temas halinde oldukları için, deneylerin gerçekçi olması bakımından hazırlanan su banyosunda hortumlar 30 dakika boyunca bekletilmiştir. Su banyosunda 30 dakika boyunca su emmesi sağlanan numunelerin ilk ve son ağırlıkları hassas terazi (Precisa XB 620 M, İsviçre) yardımıyla ölçülmüştür.

Denemelere başlanmadan önce 20 cm. uzunluğunda kesilmiş olan hortum numuneleri, ilk nem değerinin anlaşılabilmesi için Etüvde (MINGDA KIT-35A, Çin) 105 $^{\circ}$C de 24 saat boyunca kurutulmuştur. Bu işlemin sonucunda ilk nem değeri yaş baza göre %97±0,7 olarak hesaplanmıştır. Nem değişimleri ürünün ağırlıkları dikkate alınarak hesaplanmıştır. Ağırlık kayıpları hassas terazi ile belirlenmiştir. Deney esnasında numunelere ait yaş baza göre nem değeri denklem 2.1 ve kuru baza göre nem değeri denklem 2.2' ye göre hesaplanmıştır. (Maskan, 2000).

$$m_y = \frac{M_y - M_k}{M_y} \tag{2.1}$$

$$m_k = \frac{M_y - M_k}{M_k} \tag{2.2}$$

Bu denklemlerde; **m_y:** yaş baza göre nem içeriği, **m_k:** kuru baza göre nem   , **M_k**: ürünün kuru kütlesi (g) ve **M_y**: ürünün yaş kütlesini (g) temsil eder (Çelen ve Kuş, 2016).

3. MATEMATİKSEL MODELLEME

Bu çalışmada lineer olmayan regresyon analiz yöntemi yardımıyla farklı mikrodalga kurutucu ve bantlı tip kurutucuda farklı güç ve sıcaklık değerlerinde deney sonuçlarından elde edilen nem oranı zaman değişimi eğrilerinin modellenmesi yapılmıştır. Nem oranı, bantlı kurutucu için denklem 3.1 ve mikrodalga kurutucu için denklem 3.2' deki gibi tanımlıdır.

$$m_R = \frac{m - m_e}{m_o - m_e} \tag{3.1}$$

$$m_R = \frac{m}{m_o}$$ (3.2)

Burada, m_r: boyutsuz nem oranı, m: ürünün belli bir zamandaki nem içeriği (g.su/g.katı madde), m_e: denge nem içeriği, m_o: ilk nem içeriği olarak belirtilmiştir.

Kurutma denemelerinden elde edilen nem değişim dataları dikkate alınarak literatürde var olan kurutma modellerinden Approximation of Diffusion, Verma et al., Two Term Exponantial, Midilli et al. ve Logarithmic modelleri incelenmiştir (Tablo 3.1.). Bu çalışmada ise, XLSTAT programı yardımı ile non-lineer regresyon yöntemi ile nem değerlerindeki düşüş incelenmiş ve uygun modellemesi yapılmıştır. Modellemelerin uygunluklarının değerlendirilmesi ise, korelasyon katsayısına, standart sapma değerine ve ki-kare değerine hesaplanmıştır.

Tablo 3.1. Kurutma modelleri

Matematiksel Model	Model Denklemi	Referans
Logarithmic	$m_R = \alpha \exp(-kt) + b$	Yaldiz ve ark. (2001)
Midilli et al.	$m_R = \alpha \exp(-kt^n) + bt$	Midilli ve ark. (2002)
Approximation of Diffusion	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-kbt)$	Çelen ve ark. (2010)
Verma et al.	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-gt)$	Verma ve ark. (1985)
Two Term Exponantial	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-k\alpha t)$	Sharaf - Eldeen ve ark. (1980)

Deneylerden elde edilen verilere göre en uygun model seçilmiştir. Tespit edilen standart sapma değeri, teorik ve pratik uygulamalar arasındaki sapmayı, ki kare değeri uygulamalar arasındaki uygunluğu ve korelasyon katsayısı da modelin tercih edilebilirliğini belirtmektedir. Bu sebeple herhangi bir modelin kabul edilebilirliği için korelasyon katsayısının 1'e, standart sapma ve ki-kare değerinin ise 0 ya yakın olması tercih edilir. Denklem 3.3'de korelasyon katsayısı, denklem 3.4'de standart sapma değeri ve denklem 3.5'de ise ki-kare (χ^2) değeri tanımlanmaktadır (Çelen ve Kuş, 2016).

$$r = \frac{n_o \sum\limits_{i=1}^{n_o} mr_{pre,i}\, mr_{exp,i} - \sum\limits_{i=1}^{n_o} mr_{pre,i} \sum\limits_{i=1}^{n_o} mr_{exp,i}}{\sqrt{n_o \sum\limits_{i=1}^{n_o} (mr_{pre,i})^2 - \left(\sum\limits_{i=1}^{n_o} mr_{pre,i}\right)^2}\, \sqrt{n_o \sum\limits_{i=1}^{n_o} (mr_{exp,i})^2 - \left(\sum\limits_{i=1}^{n_o} mr_{exp,i}\right)^2}}$$ (3.3)

$$e_s = \sqrt{\frac{\sum\limits_{i=1}^{n_o} (mr_{pre,i} - mr_{exp,i})^2}{n_o}}$$ (3.4)

$$\chi^2 = \frac{\sum_{i=1}^{n_o} (mr_{pre,i} - mr_{exp,i})^2}{n_o - n_c} \tag{3.5}$$

Bu denklemlerde; r : korelasyon katsayısını , e_s : standart sapma değerini, χ^2 : ki-kare değerini, $mr_{exp,\ i}$: deney sonucu elde edilen boyutsuz nem oranını, $mr_{pre,\ i}$: uygun modelde elde edilen boyutsuz nem oranını, n_o : gözlem sayısını, n_c : kurutma modelindeki sabitlerin sayısını ve n : üs değerlerini belirtmektedir.

4. UYGUN MODEL SEÇİMİ

Mikrodalga kurutucu ve bantlı tip tünel kurutucuda yapılan kurutma deneylerinden elde edilen veriler ile matematiksel modellerden elde edilen sonuçlar karşılaştırılmış ve her deney için uygun olan matematiksel modeller tespit edilmiştir. Tablo 4.1. 'de kullanılan modeller ile 30 dakika su banyosu uygulanmış sonrasında ise bantlı tip tünel kurutucuda ve mikrodalga kurutucuda çeşitli sıcaklık ve güçlerde kurutulmuş deney numunelerine ait veriler bulunmaktadır.

Tablo 4.1. 30 Dakika Su Banyosu Deneyleri - Matematiksel Modelleme Sonuçları

MODEL	Mikrodalga Gücü (W)	Sabitler	r	χ^2	e_s	Bant Sıcaklığı (°C)	Sabitler	r	χ^2	e_s
LOGARITHMIC	120	a= 0,99 k= -0,022 b= 0,0002	0,994	0,017	0,0003	50	a= 0,94 k= -0,006 b= 0,00001	0,996	0,011	0,0001
	350	a= 1,02 k= -0,077 b= 0,0022	0,99	0,021	0,0004	60	a= 0,94 k= -0,008 b= 0,00003	0,994	0,014	0,0002
	460	a= 0,98 k= -0,094 b= 0,0031	0,993	0,017	0,0003	70	a= 0,88 k= -0,008 b= 0,00003	0,969	0,029	0,0009
APPROXIMATION OF DIFFUSION	120	a= -28,813 k= -0,00032 b= -28,66	0,898	0,07	0,005	50	a= -34,535 k= -0,00006 b= -34,314	0,846	0,073	0,0053
	350	a= 11,56 k= 0,003 b= 11,688	0,901	0,0705	0,005	60	a= -55,001 k= -0,00004 b= -54,745	0,802	0,089	0,008
	460	a= -23,091 k= -0,0022 b= -22,988	0,948	0,05	0,0025	70	a= -60,132 k= -0,00004 b= -59,809	0,733	0,098	0,0097
VERMA ET AL.	120	a= -0,38 k= 0,03 g= 0,025	0,967	0,037	0,0014	50	a= -0,34 k= 0,006 g= 0,006	0,834	0,069	0,005

	350	a= -0,359 k= 0,069 g= 0,070	0,962	0,041	0,0017	60	a= -0,38 k= 0,0078 g= 0,008	0,805	0,08	0,0063
	460	a= 0,128 k= 0,015 g= 0,119	0,98	0,027	0,00073	70	a= -0,415 k= 0,0093 g= 0,0094	0,619	0,104	0,011
TWO-TERM EXPONENTIAL	120	a= 28,813 k= -0,0003	0,898	0,07	0,005	50	a= -34,53 k= -0,00006	0,846	0,073	0,0053
	350	a= 11,56 k= 0,003	0,901	0,071	0,005	60	a= -55,001 k= -0,00004	0,802	0,089	0,008
	460	a= -23,09 k= -0,0022	0,948	0,005	0,0025	70	a= -60,132 k= -0,00004	0,733	0,099	0,0097
MIDILLI ET AL.	120	a= 0,851 k= -0,0011 n= 0 b= -0,01	0,918	0,062	0,0038	50	a= 0,78 k= -0,00009 n= 0 b= -0,0021	0,848	0,069	0,0048
	350	a= 0,881 k= 0,01 n= 0 b= -0,0333	0,908	0,065	0,0043	60	a= 0,746 k= 0,00018 n= 0 b= -0,0025	0,807	0,083	0,007
	460	a= 0,9 k= 0,00099 n= 0 b= -0,0555	0,965	0,04	0,0016	70	a= 0,679 k= -0,0002 n= 0 b= -0,0025	0,738	0,0914	0,0083

Şekil 4.1., mikrodalga kurutma gücü olarak 120 W, 350 W ve 460 W uygulanmasından elde edilen sonuçlar ile deneysel verilerin kuruma modellerine uygunluğunu göstermektedir. Tablo 3.1. de itfaiye hortumunu numunesine uygulanan ince tabaka kuruma modelleri, Tablo 4.1. de ise sonuçlar görülmektedir. En yüksek r ve en düşük e_s ve χ^2 değerleri uygulanan model için en uygunluğun bir ölçüsüdür. Tablo 4.1.' deki verilere göre Logaritmik modelinde; r ve χ^2 değerlerinin sırasıyla 120 W mikrodalga gücü için 0.994 ve 0,017 olduğu, 350 W mikrodalga çıkış için 0.99 ve 0,021 olduğu ve 460 W mikrodalga çıkış için ise 0,993 ve 0,017 olduğu görülmektedir.

Şekil 4.2. de ise, bantlı tip tünel kurutucu da kurutma sıcaklığı olarak 50 ºC, 60 ºC ve 70 ºC uygulanması sonucu elde edilen veriler ile deneysel verilerin kuruma modellerine uygunluğunu göstermektedir. Tablo 4.1.' deki verilere göre Logaritmik modelinde; r ve χ^2 değerlerinin sırasıyla 50 ºC kurutma sıcaklığı için 0.996 ve 0,011 olduğu, 60 ºC kurutma sıcaklığı için 0.994 ve 0,014 olduğu ve 70 ºC kurutma sıcaklığı için ise 0,969 ve 0,029 olduğu görülmektedir.

Tablo 4.1. de, Şekil 4.1. de ve Şekil 4.2. de verilmiş olan tüm sonuçlar değerlendirildiğinde 30 dakika su banyosundan sonra yapılan mikrodalga kurutucu ile kurutma işlemine de bantlı tip tünel kurutucu ile kurutma işlemine de en uygun matematiksel modelin Logarithmic modeli olduğu anlaşılmıştır. Her iki durumda da uygun model Logarithmic olarak tespit edildiğinden dolayı, Logarithmic modeline ait grafikler çizilmiştir.
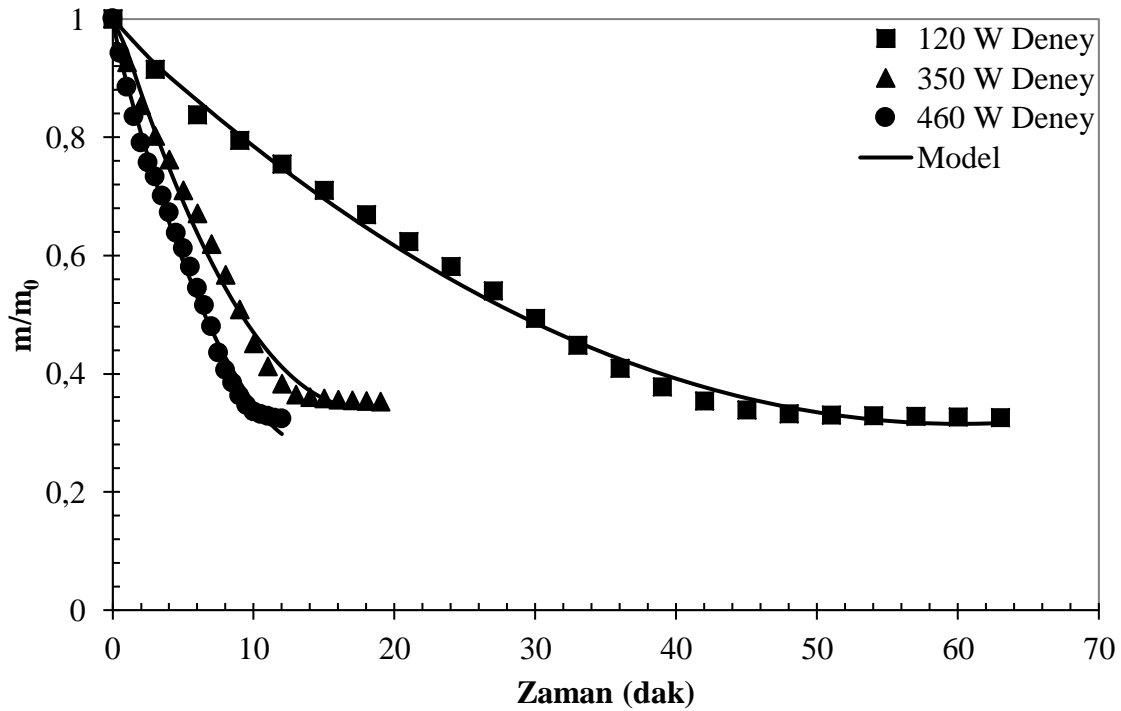
Şekil 4.1. 30 Dakika Su Banyosu – Mikrodalga Kurutucuya ait Logarithmic Model Grafiği
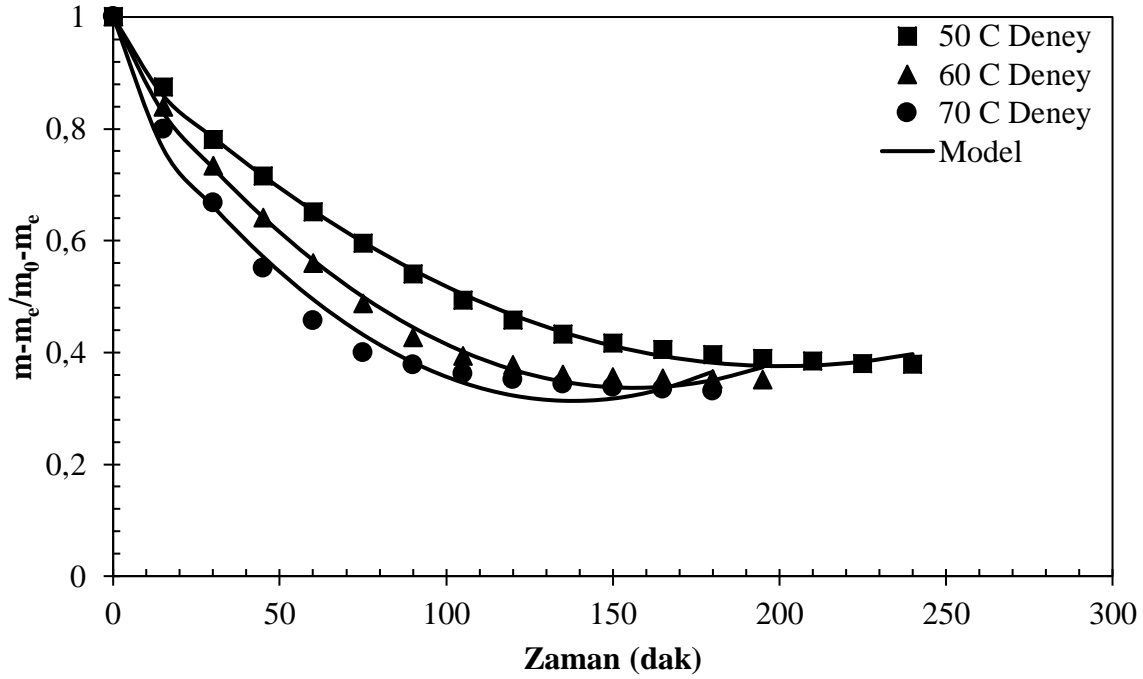
Şekil 4.2. 30 Dakika Su Banyosu – Bantlı Tip Tünel Kurutucuya ait Logarithmic Model Grafiği

5. SONUÇLAR

Kuruma olayını açıklayabilmek için oluşturulan ince tabaka kuruma modellerinden Approximation of Diffusion, Verma et. al., Logarithmic, Midilli et. al. ve Two Term Exponantial matematiksel modelleri, yangına müdahale hortumu numunesinin bantlı tip tünel kurutucuda ve mikrodalga kurutucuda kurutulması işlemlerinden elde edilen deneysel verilere uygulanmıştır. Su banyosunda 30 dakika bekletilen hortum numuneleri için, mikrodalga kurutucuda kurutma sonrası yapılan deneylere en uygun modelin Logarithmic modeli olduğu, bantlı tip tünel kurutucuda kurutulan numuneler için ise aynı şekilde Logarithmic modeli olduğu anlaşılmıştır. Yapılmış olan istatistiki değerlendirmeler ve regresyon analizleri baz alındığında bu modeller içinde sadece Logarithmic modelinin, uygulanan tüm kurutma güçlerinde ve kurutma sıcaklıklarında en uygun matematiksel model olduğu görülmüştür. En az uygun olan modellerin ise, mikrodalga kurutucu için Approximation of Diffusion ve Two Term Exponantial modelleri, bantlı tip tünel kurutucu için ise benzer şekilde Approximation of Diffusion modeli olduğu tespit edilmiştir.

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KONVEKTİF BANTLI BİR SICAK HAVA KURUTUCUSUNDA YANGINA MÜDAHALE HORTUMUNUN KURUTULMASI VE MODELLEMESİ

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Özet
Yangına müdahale hortumları kullanımlarından sonra sabunlu su ile yıkanmakta ve sonrasında kurutularak depolanmaktadır. Kurutma işlemi için doğal kurutma tercih edilmektedir. Doğal kurutma, uzun süreli bir işlem olduğu ayrıca mevsimsel şartlardan etkilendiğinden dolayı alternatif yöntemler incelenmiştir. Hortumlar, kullanımları esnasında sürekli ıslak durumda bulundukları için deneylerden önce de 90 dakika su banyosuna tabii tutulmuşlardır. Bantlı tip tünel kurutucuda kurutulan hortum numunelerine ait kurutma verileri ile matematiksel modellerden elde edilen sonuçlar karşılaştırılmış ve her deney için uygun olan matematiksel modeller tespit edilmiştir. Ayrıca 15 dakikalık periyotlar ile termal görüntüleme de yapılarak numune üzerindeki sıcaklık dağılımı da incelenmiştir. Matematiksel modelleme işlemi için Approximation of Diffusion, Verma et al., Midilli et al., Two Term Exponantial, Logarithmic, Henderson & Pabis, Newton, Copace ve Wang & Singh modelleri kullanılmıştır. Tüm sonuçlar değerlendirildiğinde en uygun matematiksel modelin Logarithmic olduğu tespit edilmiştir.

Anahtar Kelimeler: Bantlı tip kurutucu, Mikrodalga, Modelleme, Logarithmic

DRYING AND MODELING A FIRE FIGHTING HOSE IN A CONVECTIVE CONVEYOR HOT AIR DRYER

Abstract
Fire fighting hoses are washed with soap and water after their use, then dried and stored. Natural drying is used for the drying process. Because of natural drying is a long-term process and is also affected by seasonal conditions, alternative methods have been searched. The hoses were bathed for 90 minutes in water before the tests, as they were constantly wet during their use. The drying data of the hose samples dried in a conveyor dryer and the results obtained from the mathematical models were compared and the mathematical models suitable for each experiment were determined.

In addition, the thermal images were taken in periods of 15 minutes and the temperature distribution on the fire hose samples were also examined. Approximation of Diffusion, Verma et al., Midilli et al., Two Term Exponantial, Logarithmic, Henderson & Pabis, Newton, Copace and Wang & Singh models were used for the mathematical modeling process. When all the results are evaluated, it has been determined that the most suitable mathematical model is Logarithmic.

Keywords: Conveyor Dryer, Thermal Analysis, Mathematical Models, Logarithmic

GİRİŞ

Kurutma genellikle gıda ürünlerinin dayanıklılığını artırmada kullanılan eski bir metottur. Ürünün içerdiği su, farklı yöntemlerle uzaklaştırılır (Çelen vd., 2016). Kurutma, aynı anda ısı ve kütle transferini içeren karmaşık bir süreçtir. Su molekülü taşınması, kılcal hareket, sıvı difüzyon, buhar difüzyonu ve hidrodinamik gibi moleküler difüzyon dahil olmak üzere kurutma işlemi ile yakın bir ilişkiye sahiptir (Çelen vd., 2016). Günümüz de sadece gıda değil çamur, beton, linyit gibi farklı materyallerde de kurutulmaktadır (Köse Tınmaz vd., 2019; Akyıldız ve Çelen, 2017; Altıner ve Yıldırım, 2011).

Endüstride en çok kullanılan kurutma metotları döner kurutucular, dondurarak kurutma, tepsili kurutma, sprey kurutucular, akışkan yatak kurutucular, güneşte kurutma, vakum kurutma, mikrodalga ile kurutma, tünel kurutucular, doğal kurutma ve radyo frekans kurutmadır. Bu kurutmalara alternatif olarak da enerji tasarrufu açısından hibrit kurutmalar tercih edilmektedir. İtfaiye hortumların mevcut kurutma sistemleri doğal kurutmadır. Açık hava şartlarında yapılan doğal kurutma işlemleri sonucunda kuru ürüne ulaşılması için uzun zaman dilimleri gerekmektedir. Bu da acil kullanım durumu söz konusu olduğunda sıkıntılar doğurmaktadır. Bu dezavantajdan yola çıkarak hortumun kısa zamanda ve seri şekilde kullanılabilmesi için sıcak hava ile bantlı kurutma konusunda bu çalışma yapılmıştır.

Bu çalışmada yangına müdahale hortumunun kurutulmasında kurutma verileri kullanarak regresyon analizi yöntemlerinin uygulanması, aynı zamanda bilgisayar yazılımı kullanılarak nem içeriğinin tahmini ve analiz yöntemleri ile deneysel elde edilen sonuçların kıyaslanması yapılmıştır. Ayrıca sıcak havanın hortum üzerindeki etkisi için de termal görüntüler çekilmiştir.

2. MATERYAL ve YÖNTEM

Yangına müdahale hortumları (Şekil 1.), itfaiye istasyonlarında standart olarak kullanılmakta olup dış kısmı kumaş, iç kısmı kauçuktan oluşmaktadır. Bu çalışmada daha önce kullanılmamış piyasada satılan 20 m hortumdan 20 cm kesilerek deneyler yapılmıştır.

Şekil 1. Deneylerde kullanılan 20 cm hortum numunesi

Kurutma denemelerinde 172x50x40 cm boyutlarında, 0,177 m/dak bant hızında ve 1 m/s hava hızında bantlı kurutucu kullanılmıştır. Şekil 2. de gösterilen kurutucu ile 3 farklı sıcaklıkta (50 ºC, 60 ºC ve 70 ºC) kurutma denemeleri yapılmıştır (Dağlı, 2020).
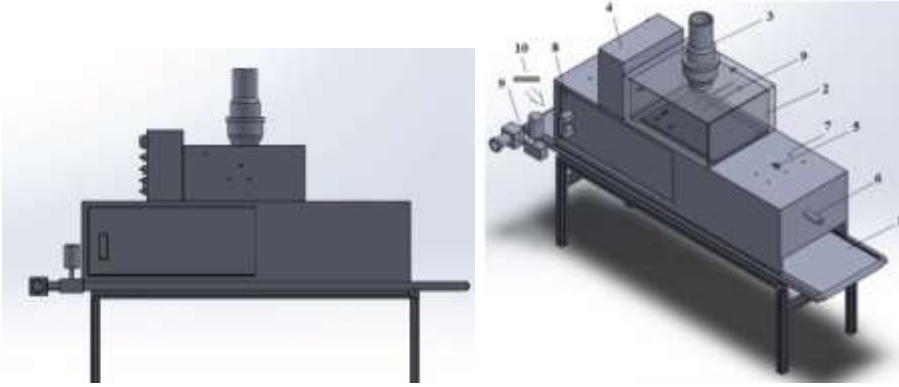
Şekil 2. Konveyör kurutma sistemi (1: Bant, 2: Isıtma odası, 3: Fan, 4: Kontrol paneli, 5,6: Sıcaklık ölçer, 7: havalandırma boşlukları, 8: Tünel kapağı, 9: Elektrik motoru, 10: Hortum numunesi; Dağlı, 2020)

Tüm kuruma denemelerinde hortum 20 cm kesilip 90 dakika su banyosunda bekledikten sonra kurutma işlemine başlanılmıştır. İlk ağırlığı hortumun 126 ±1 g iken su emdikten sonraki ağırlığı 142 ±1 olarak belirlenmiştir. Kuru ağırlığını tespit edebilmek için Etüvde (MINGDA KH-35A, China) 24 saat 105±1 ºC de bekletilmiştir. Yaş baza göre ilk nem değeri ortalama olarak %97 ±0.7 olarak bulunmuştur. Konvektif bantlı kurutma denemelerin tamamı 15 dakika aralıklarla yapılmış olup, hassas terazi (Presica XB 620 M, İsviçre) ile ağırlık kayıpları ölçülmüş ve hortum numuneleri yaş baza göre %5,5±0.8 değerine gelince kurutma bitirilmiştir. Her bir parametrelerde belli periyotlarda ağırlıkları ölçülüp termal görüntüleri çekilmiştir.

Kurutma denemelerinden önce ve deney süresince 15 dakikalık periyotlar halinde termal kamera yardımı (Flir EX E6, Estonya) ile hortumun yüzey sıcaklıkları tespit edilmiştir. Ürün üzerindeki ısı dağılımı da bu fotoğraflar sayesinde incelenmiştir.

3. KURUMANIN MODELLENMESİ

Ürünlerin ilk nem ve son nemlerinin yanı sıra kurutma işlemi boyunca değişen nem içeriği değerleri de denklem 1-2 kullanılarak hesaplanmıştır (Moralar ve Çelen, 2020). Elde edilen deneysel veriler

bu formüllerde Tablo 1' de verilen her bir model için yerine konup deneysel ve model verileri arasında grafiksel karşılaştırılması yapılmıştır. Modellemelerin uygunluklarının değerlendirilmesi ise, korelasyon katsayısına, standart sapma değerine ve ki-kare değerine göre yapılmıştır. Deneylerden elde edilen verilere göre modeller değerlendirilmiş ve sonuçlara göre en uygun model seçilmiştir. Tespit edilen standart sapma değeri, teorik ve pratik uygulamalar arasındaki sapmayı, ki kare değeri uygulamalar arasındaki uygunluğu ve korelasyon katsayısı da modelin tercih edilebilirliğini belirtmektedir.

$$m_y = M_s/(M_s + M_k) \tag{1}$$

$$m_r = \frac{m - m_e}{m_o - m_e} \tag{2}$$

Burada, m_y: yaş baza göre nem içeriği, M_s: ürünün yaş kütlesi (g), M_k: ürünün kuru kütlesi (g), m_r: boyutsuz nem oranı, m: ürünün belli bir zamandaki nem içeriği (g.su/g.katı madde), m_e: denge nem içeriği, m_o: yaş haldeki nem içeriği (g.su/g.katı madde)

Tablo 1: Kurutma modelleri

Matematiksel Model	Model Denklemi	Referans
Henderson & Pabis	$m_R = \alpha \exp(-kt)$	Çelen vd., 2017
Newton	$m_R = \exp(-kt)$	Çelen ve Arda, 2019
Wang & Singh	$m_R = 1 + \alpha t + bt^2$	Wang ve Singh, 1978
Logarithmic	$m_R = \alpha \exp(-kt) + b$	Yaldiz vd, 2001
Midilli et al.	$m_R = \alpha \exp(-kt^n) + bt$	Midilli vd, 2002
Copace	$m_R = (\alpha + bt) / (1 + ct + dt^2)$	Baptestini vd, 2016
Approximation of Diffusion	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-kbt)$	Çelen vd, 2010
Verma et al.	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-gt)$	Verma vd, 1985
Two Term Exponantial	$m_R = \alpha \exp(-kt) + (1-\alpha)\exp(-k\alpha t)$	Sharaf - Eldeen vd, 1980

Mikrodalga kurutucu ve bantlı tip tünel kurutucuda yapılan kurutma deneylerinden elde edilen veriler ile matematiksel modellerden elde edilen sonuçlar karşılaştırılmış ve her deney için uygun olan matematiksel modeller tespit edilmiştir. Tablo 1. de kullanılan modeller ile 90 dakika su banyosu uygulanmış sonrasında ise bantlı tip tünel kurutucuda ve mikrodalga kurutucuda çeşitli sıcaklık ve güçlerde kurutulmuş deney numunelerine ait veriler bulunmaktadır.

4. ARAŞTIRMA BULGULARI

Deneylerde ilk önce su banyosunda 90 dakika boyunca su emmiş olan 2 adet hortum numunesi bantlı tip tünel kurutucuda 50 °C sıcaklığında kurutulmuştur. Bu deneyde kullanılan hortum numunelerinin su emmeden önceki ağırlıkları 1.numune için 123,973 g, 2.numune için ise 123,763 g olarak tespit edilmiştir. 90 dakika boyunca emdiği su ile birlikte 1.numune 140,354 g, 2.numune ise 140,210 g ağırlığına ulaşmıştır. Numunelerin kuruma işlemi toplam 180 dakikada gerçekleşmiş olup, bu süre boyunca numunelerin ağırlığı 1. numune için 16,932 g, 2.numune için ise 17,107 g azalmıştır. Kurutma işleminin gerçekleştiği sürede nem değeri 1.numune için 0,0579 gsu/gkuru madde, 2.numune için ise 0,0564 gsu/gkuru madde miktarına kadar azalmıştır. 60 °C sıcaklığında denemede ise, kullanılan hortum numunelerinin su emmeden önceki ağırlıkları 1.numune için 122,668 g, 2.numune için ise 122,378 g olarak ölçülmüş olup, 90 dakika boyunca emdikleri su ile birlikte 1.numune 139,373 g, 2.numune ise 138,909 g ağırlığa ulaşmıştır. Numunelerin   kuruma işlemi toplam 165 dakikada gerçekleşmiş olup, bu süre boyunca numunelerin ağırlığı 1. numune için 16,592 g, 2.numune için ise 16,634 g azalmıştır. Kurutma işleminin gerçekleştiği sürede nem değeri 1.numune için 0,0597 gsu/gkuru madde, 2.numune için ise 0,0589 gsu/gkuru madde miktarına kadar azalmıştır. 70 °C kurutma deneyinde, deney için kullanılan hortum numunelerinin su emmeden önceki ağırlıkları 1.numune için 122,421 g, 2.numune için ise 122,707 g olarak ölçülmüştür. 90 dakika boyunca emdiği su ile birlikte 1.numunenin ağırlığı 141,277 g, 2.numunenin ağırlığı ise 141,291 g' a yükselmiştir. Numunelerin kuruma işlemi toplam 90 dakikada gerçekleşmiş olup, bu süre boyunca numunelerin ağırlığı 1. numune için 16,900 g, 2.numune için ise 17,139 g azalmıştır. Kurutma işleminin gerçekleştiği sürede nem değeri 1.numune için 0,0590 gsu/gkuru madde, 2.numune için ise 0,0572 gsu/gkuru madde miktarına kadar azalmıştır. Şekil 3. de kurutma sıcaklığının zamanla değişimi gösterilmiştir.
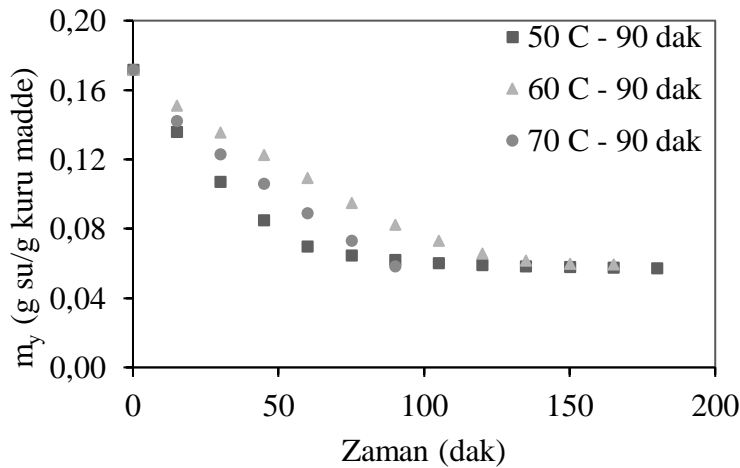
Şekil 3. 90 Dakika Su Banyosunda Bekletilen Hortumun Zamana Bağlı Nem Değişimi

4.1. Uygun Modelin Tespiti

Tablo 2 'de kullanılan modeller ile 90 dakika su banyosu uygulanmış sonrasında ise bantlı tip tünel kurutucuda çeşitli sıcaklık değerlerinde kurutulmuş deney numunelerine ait veriler bulunmaktadır. Bantlı tip kurutucu ile kurutma işlemine ise en uygun matematiksel modelin Logarithmic modeli olduğu tespit edilmiş ve Logarithmic modelin uygunluk grafiği Şekil 4. de çizilmiştir.

Tablo 2: 90 Dakika Su Banyosu Deneyleri - Matematiksel Modelleme Sonuçları

MODEL	Bant Sıcaklığı (°C)	Sabitler	r	χ^2	e_s
NEWTON	50	k= 0,00998	0,875	0,0013	0,113
	60	k= 0,0076	0,982	0,00066	0,026
	70	k= 0,0114	0,993	0,00023	0,0152
COPACE	50	a= 0,886 b= -0,0069 c= 0,0063 d= -0,000	0,88	0,0034	0,058
	60	a= 0,813 b= 0,043 c= 0,034 d= ,00068	0,993	0,00036	0,0188
	70	a= 0,942 b= -0,0061 c= 0,002 d= -0,000003	0,999	0,00005	0,0022
HENDERSON & PABIS	50	a= 0,717 k= 0,006	0,75	0,0057	0,076
	60	a= 0,974 k= 0,007	0,984	0,0006	0,025
	70	a= 0,995 k= 0,011	0,993	0,0003	0,017

WANG & SINGH	50	a= -0,011 b= 0,00002	0,831	0,004	0,062
	60	a= -0,008 b= 0,00002	0,996	0,00014	0,012
	70	a= -0,01 b= 0,00003	0,993	0,0003	0,017
LOGARITHMIC	50	a= 0,84 k= -0,008 b= 0,00003	0,93	0,0018	0,042
	60	a= 1,005 k= -0,008 b= 0,00002	0,997	0,0002	0,012
	70	a= 0,94 k= -0,008 b= 0,000012	0,999	0,000003	0,002
APPROXIMATION OF DIFFUSION	50	a= -42,054 k= -0,00005 b= -41,685	0,639	0,0012	0,108
	60	a= -44,138 k= -0,00008 b= -44,008	0,933	0,004	0,0639
	70	a= -62,993 k= -0,0001 b= -62,906	0,998	0,0003	0,0172
VERMA ET AL.	50	a= -0,411 k= 0,0098	0,375	0,016	0,125

		g= 0,010			
	60	a= -0,187 k= 0,0076 g= 0,0076	0,982	0,0008	0,029
	70	a= -0,03 k= -0,0084 g= 0,0102	0,995	0,0003	0,016

TWO-TERM EXPONENTIAL	50	a= -42,054 k= -,00005	0,64	0,0117	0,108
	60	a= -44,14 k= -,00008	0,933	0,004	0,064
	70	a= -62,99 k= -0,0001	0,998	0,0003	0,017
MIDILLI ET AL.	50	a= 0,632 k= -0,00017 n= 0 b= -0,022	0,64	0,0101	0,1008
	60	a= 0,873 k= 0,00022 n= 0 b= -0,0036	0,936	0,0033	0,057
	70	a= 0,914 k= -0,00004 n= 0 b= -0,0065	0,998	0,00013	0,0115
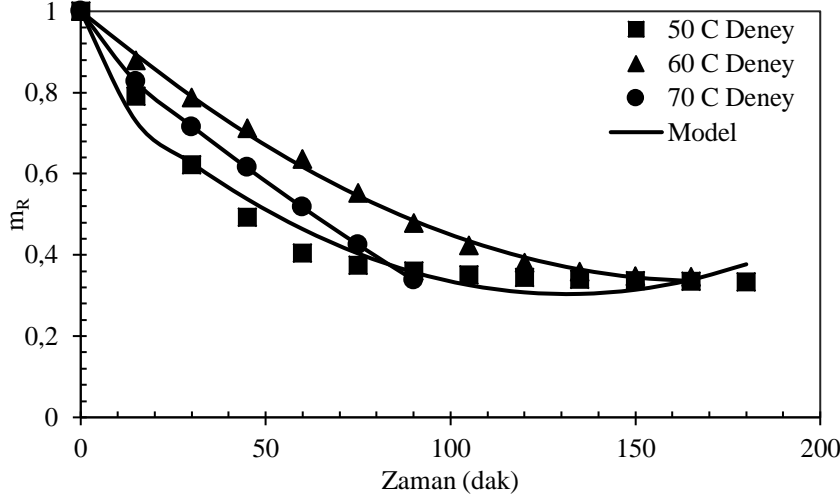
Şekil 4. 90 Dakika Su Banyosu – Bantlı Tip Kurutucuya ait Logarithmic Model Grafiği

4.2. Termal Analiz

Termal kamera yardımı ile görüntülenen numunelerde sıcaklık dağılımının düzenli olduğu gözlenmiştir. Bu durum, numunenin tünel boyunca sürekli olarak kurutma sıcaklığına maruz kalmasıyla açıklanabilir. Numunenin yüzeyi tamamen kurutma sıcaklığına maruz kaldığından ve bantın hareketiyle numune hareket halinde olduğundan sıcaklık eşit olarak dağılmıştır. Termal analizde sarı olarak gözlenen kısımlar ısınmaya devam eden kırmızı kısımlar ise aşırı ısınmış kısımlardır. Şekil 5-7 de sırasıyla hortuma 50 °C, 60 °C ve 70 °C sıcaklık uygulanarak bantlı tip kurutucuda kurutulması esnasındaki termal kamera görüntüleri yer almaktadır. 50 °C sıcaklıkta kurutma işlemi 180 dakika boyunca devam etmiş olup, hortum numunesinin ölçülen ilk sıcaklığı 15.dakikada 43,2 °C iken, son sıcaklığı ise 180.dakikada 56,2 °C olarak ölçülmüştür. 60 °C sıcaklıkta kurutma işlemi 165 dakika sürmüş ve bu süreçte hortum numunesinin 15.dakikada ölçülen ilk sıcaklığı 44,8 °C iken, 165.dakikada ölçülen son sıcaklığı 58,9 °C olarak görülmüştür. 70 °C sıcaklıkta kurutma işlemi 90 dakika boyunca devam etmiş olup, hortum numunesinin ölçülen ilk sıcaklığı 15.dakikada 65,0 °C iken, son sıcaklığı ise 90.dakikada 68,4 °C olarak ölçülmüştür. Genel olarak sıcaklık dağılımı ilk iki ölçümde üniform olmayan bir dağılım gösterse de yüzeyde hareket yönünde olan kenardan diğer kenara doğru sıcaklık dağılımı düzenli bir azalış göstermiştir.
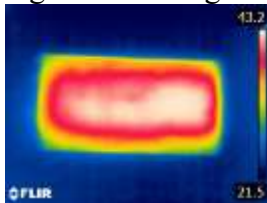
15 dakika (50 ^{0}C)   30 dakika (50 ^{0}C)   45 dakika (50 ^{0}C)   60 dakika (50 ^{0}C)
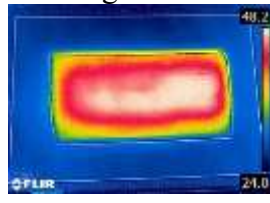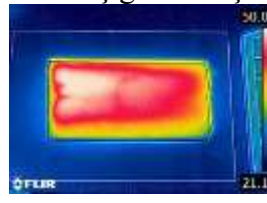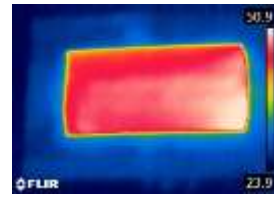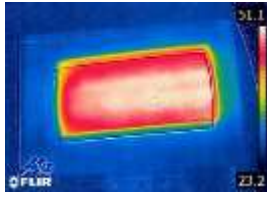
75 dakika (50 ^{0}C)   90 dakika (50 ^{0}C)   105 dakika (50 ^{0}C)   120 dakika (50 ^{0}C)
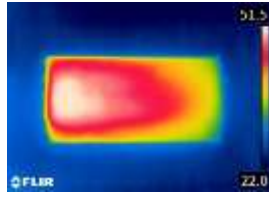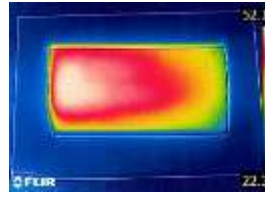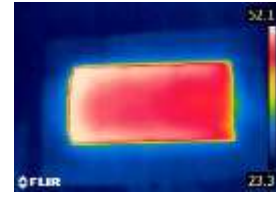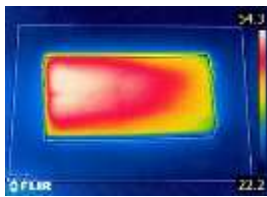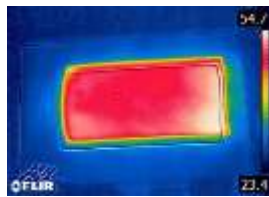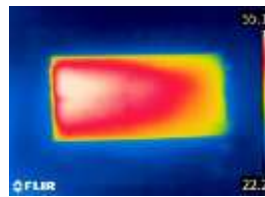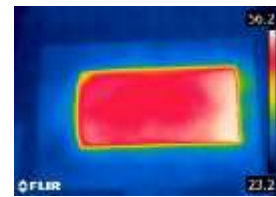
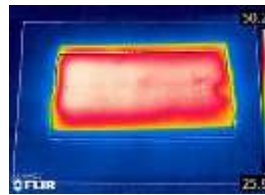135 dakika (50 ^{0}C)   150 dakika (50 ^{0}C)   165 dakika (50 ^{0}C)   180 dakika (50 ^{0}C)

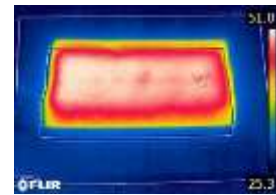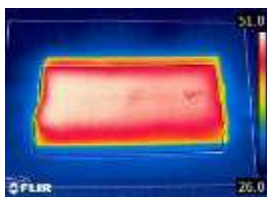**Şekil 5.** Bantlı Tip Tünel Kurutucu 50 ^{o}C - 90 Dakika Su Banyosu
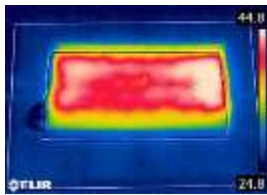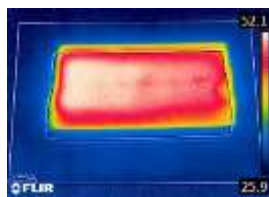

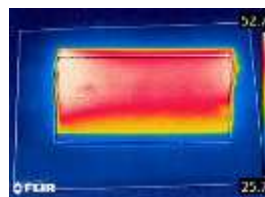15 dakika (60 ^{0}C)   30 dakika (60 ^{0}C)   45 dakika (60 ^{0}C)   60 dakika (60 ^{0}C)
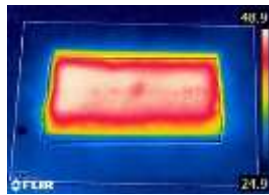
75 dakika (60 ^{0}C)   90 dakika (60 ^{0}C)   105 dakika (60 ^{0}C)   120 dakika (60 ^{0}C)
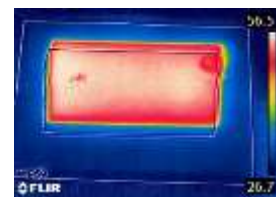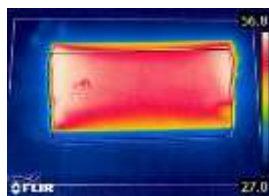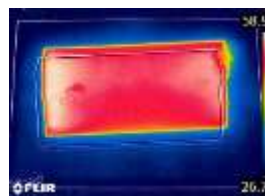
135 dakika (60 ^{0}C)   150 dakika (60 ^{0}C)   165 dakika (60 ^{0}C)

Şekil 6. Bantlı Tip Tünel Kurutucu 60 ^{o}C - 90 Dakika Su Banyosu

15 dakika (70 ^{0}C)

30 dakika (70 ^{0}C)

45 dakika (70 ^{0}C)

60 dakika (70 ^{0}C)

75 dakika (70 ^{0}C)

90 dakika (70 ^{0}C)
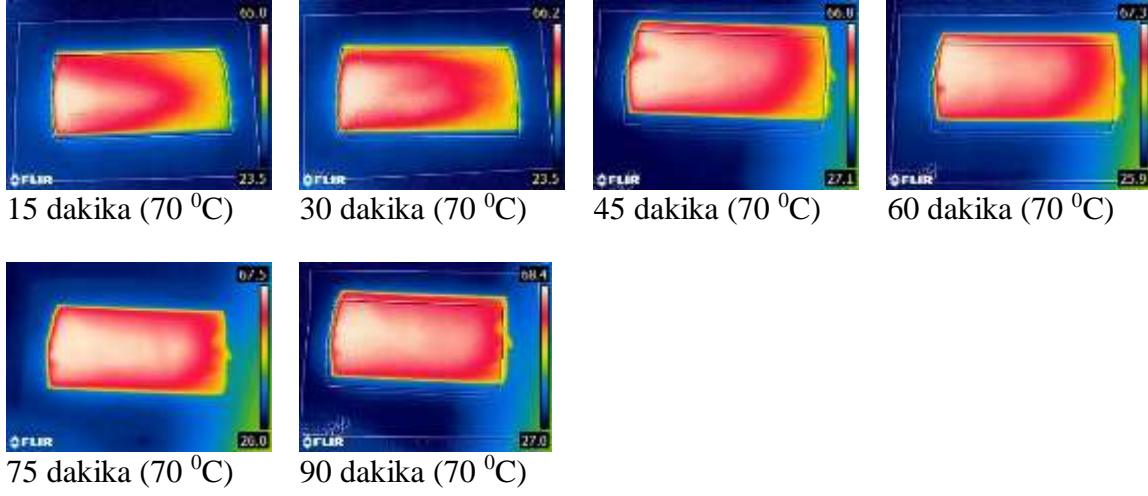
Şekil 7. Bantlı Tip Tünel Kurutucu 70 ºC - 90 Dakika Su Banyosu

5. SONUÇLAR

Bu çalışmada üç farklı sıcaklıkta kurutulan 20 cm boyutlarındaki hortumun genel sonuçları aşağıda belirtilmiştir.

90 dakika boyunca su emmesi sağlanmış olan hortum numunesinin en kısa kuruma süresi 70 oC sıcaklıkta 90 dakika olarak belirlenmiştir.

Dokuz kurutma modelinde uygunluğuna baktığımızda kurutulan numuneler için Logarithmic modelinin uygun olduğu gözlenmiştir. Tüm sonuçlar değerlendirildiğinde en uygun modelin Logarithmic olduğu tespit edilmiştir.

Kuruma süresince numune sıcaklığı arttıkça suyun buharlaşma hızı da artmış ve numunenin dış kısmında bulunan iplikli yapı ile iç kısmında bulunan gözenekli yapının da kısmen belirginleştiği anlaşılmıştır. Ancak genel durum değerlendirildiğinde herhangi bir işlem uygulanmanmış numune ile bantlı kurutucuda kurutulmuş numunelerin içyapısında, olumsuzluk oluşturacak oranda bir değişime rastlanmamıştır.

Genel olarak tüm sonuçlar dikkate alındığında yangına müdahale hortumun bantlı kurutucu ile kurutulması mevcut sisteme alternatif olarak önerebiliriz.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

SEASONAL VARIATION IN PHYSICAL AND CHEMICAL CHARACTERISTICS OF A TROPICAL RIVER

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Abstract

Good quality of aquatic ecosystem resource depends on its chemical and physical parameters in relation to its anthropogenic uses and the climatic regime. The importance of the physical and chemical properties of water cannot be over emphasized as they may indirectly or directly affect the distribution and abundance of aquatic animals. This research was carried out to investigate the physical and chemical properties of Forcados river from a seasonal perspective. The samples were collected monthly between April 2012 and March, 2014. Two study stations were selected by land use patterns, human impacts, solid waste disposal, and substrate structure. The main features of the stations. Water Temperature was determined using mercury bulb thermometer, pH and conductivity was measured insitu using pocket pH meter and conductivity Meter, respectively. Dissolved oxygen was determined in situ with Dissolved oxygen meter. Total Alkalinity and total hardness were analyzed by titrimetric methods. Values recorded for conductivity was higher during the wet season for both stations with values of 60.36 and 289.29 respectively. Other parameters with higher values during the wet season includes DO, BOD while parameters with higher values during the dry season includes Alkalinity and Phosphate. On the other hand, Nitrate Nitrogen recorded higher values of 0.95 during the dry season in station 1 and higher value of 0.83 during the wet season in station 2. In conclusion, the result of this research demonstrated that the physical and chemical properties of Forcados river was influenced by seasons, anthropogenic activities as well as its geological composition.

Keywords: Seasonal; Physical; chemical; Niger Delta

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

MICROBIAL POLYHYDROXYALKANOATES FOR BIOPLASTICS: AN ECO-FRIENDLY TECHNOLOGY FOR ENVIRONMENTAL SUSTAINABILITY

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Abstract

Despite the usefulness of plastics, its continual single-use and disposal in the last six decades has constituted a persistent nuisance in the environment, resulting in the death of millions of aquatic lives, birds and reduction in soil fertility. In response to this environmental crisis, there is an increasing awareness on the need for eco-friendly and biodegradable alternatives to conventional plastics. Microbial polyhydroxyalkanoates (PHAs) could be a suitable replacement for petroleum-based plastics as they are natural, bio-derived and biodegradable polymers with similar functionality as conventional plastics. Microbial PHAs are produced by a variety of bacteria including Alcaligenes, Pseudomonas, recombinant Escherichia coli via microbial fermentation process. While the wide usage of microbial PHAs for bioplastics is still limited due to production costs, their application is becoming a reality. This study elucidated the effects of plastic pollution as it relates to environmental protection and sustainability. The microbial production, application and biodegradation of PHA bioplastics as well as the use of cheap substrates for the biopolymer production are discussed. The development and wide use of bioplastics would play a significant role in environmental sustainability and reduction in the emission of greenhouse gases.

Key words: Bioplastics, Microbial Polyhdroxyalkanoates, Eco-friendly, Sustainable development

STUDY OF THE EFFECT OF FIN GEOMETRY ON THE PERFORMANCE OF A PLATE-FIN HEAT SINK

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Abstract

This study examines the effect of different fin geometries such as trapezoid and groove on the thermal performance of the plate-fin heat sink. Heat sinks have been designed in four different geometries, such as trapezoidal, trapezoidal-groove, groove, and groove-trapezoidal, and two different fin heights. They were tested in the thermal power of 5W and 10W. The heat dissipation performance of each heat sink was analyzed using the computational fluid dynamics software SolidWorks Flow Simulation. Heat sinks were compared in terms of temperature distribution, material weight, fin height, and surface area. When 5W and 10W heat power are applied to each heat sink, the trapezoidal geometry has been found to be the best geometry among heat sink designs. The trapezoidal-groove geometry also gave a similar result with a small difference in the negative direction. For 5W, the maximum temperature difference between high-fin models is 3 °C, while this difference is 6 °C for low-fin products For 10W, the maximum temperature difference between high-fin models is 4 °C, while this difference is 8 °C for low-fin products. When 5W was applied to high-fin products, the maximum temperature was 70 °C, while this value reached 107 °C for 10W. For 5W, the maximum temperature difference between high-fin models is 3 °C, while this difference is 6 °C for low-fin products. When 5W and 10W are applied to short models, the maximum temperature difference is 56 °C, while the maximum temperature difference is 37 °C when the same thermal powers are applied to high-fin models. The results showed that the maximum temperature is affected more by the fin height rather than the fin geometry, which greatly affects the life of the product to be cooled and its safer operating performance.

Keywords: Heat sink; simulation; fin geometry, thermal performance

BİR PLAKA KANATLI ISI EMİCİ PERFORMANSI ÜZERİNDE KANATÇIK GEOMETRİSİNİN ETKİSİNİN İNCELENMESİ

Özet

Bu çalışma, trapez ve oluk gibi farklı kanatçık geometrilerinin plaka-kanatçık ısı emicisinin termal performansı üzerindeki etkisini incelemektedir. Trapez kanatçık, trapez-oluk, oluk ve oluk-trapez olmak üzere dört farklı geometride ve iki farklı kanat yüksekliğinde dizayn edilmişlerdir. 5W ve 10W olmak üzere iki farklı ısıl güçte test edilmişlerdir. Her bir ısı emicisinin ısıyı dağıtma performansları hesaplamalı akışkanlar dinamiği yazılımı SolidWorks Flow Simulation kullanılarak analiz edilmiştir. Isı alıcıları sıcaklık dağılımı, malzeme ağırlığı, kanat yüksekliği ve yüzey alanı açısından karşılaştırılmıştır. Her bir ısı emicisine 5W ve 10W ısı gücü uygulandığında, soğutucu tasarımları arasından en iyi geometrinin trapez geometri olduğu tespit edilmiştir. Trapez-oluk geometrisi de eksi

yönde küçük bir fark ile benzer bir sonuç vermiştir. 5W için, yüksek-kanatlı modeller arasında maksimum sıcaklık farkı 3 °C olurken, bu fark alçak-kanatlı ürünlerde 6 °C'dir. 10W için, yüksek-kanatlı modeller arasında maksimum sıcaklık farkı 4 °C olurken, bu fark alçak-kanatlı üründe 8 °C'dir. Yüksek-kanatlı ürünlere 5W uygulandığında, maksimum sıcaklık 70 °C bulunurken 10W için bu değer 107 °C'ye ulaşmıştır. 10W için, düşük-kanatlı ve yüksek-kanatlı ürünler arasındaki maksimum fark ise 39 °C'dir. Alçak-kanatlı modellere 5W ve 10W uygulandığında, maksimum sıcaklık farkı 56 °C gerçekleşirken, yüksek-kanatlı modellere aynı ısıl güçler uygulandığında maksimum sıcaklık farkı 37 °C'dir. Sonuçlar, maksimum sıcaklığın kanat yapısından ziyade kanat yüksekliğinden daha fazla etkilendiğini göstermiştir ki bu da soğutulacak ürünün ömrünü ve daha güvenli performans göstermesini büyük ölçüde etkilemektedir.

Anahtar kelimeler: Isı emicisi; simülasyon, kanatçık geometrisi, termal performans

1. Introduction

Heat sinks are materials that remove heat quickly and efficiently and can also be used actively or passively so that electronic components are not exposed to high temperatures. These can be produced in different forms from products with high heat conduction coefficients. The fin geometries have an effect on heat sink performance. Generally, two different heat sink geometries are used, namely plate-fin heat sinks and pin-fin heat sinks, for cooling electronic equipment that generates heat. Both geometries can have different uses and may provide some advantages over each other [Sparrow and Vemuri, 1986; Bar-Cohen et al., 2003; Joo and Kim, 2015].

Jang et al. (2014) carried out an optimization to simultaneously minimize the thermal resistance and mass of a heat sink. While the plate-fin heat sink's mass was preserved, the cooling performance of the optimized design has been increased by 45%. El-Sheikh and Garimella (2000) stated that while the total fin efficiency of pinned heat sinks increased 2.4-9.2 times compared to the unpinned ones, the heat transfer rate from the naked heat source increased 7.5-72 times with the addition of heat sinks. The cooling of LED lamps under natural or forced convection conditions has been studied by many researchers [Christensen and Graham, 2009; Weng, 2009; Lee et al., 2013; Şevik et al., 2020). Abuşka et al. (2018) studied the impact of blowing direction on conical pin-fin heat sink performance by thermal imaging and found that pushing the configuration of the fan is more efficient for this design.

Modeling is the process of designing a product in three dimensions in a computer environment without producing it. In this way, various analyzes can be made on the product, and also, when undesirable situations occur in the product, the product can be intervened. Mahdi et al. (2019) experimentally and numerically analyzed the effect of the fin geometry on the temperature and natural flow currents inside the transformer of a 250kVA electrical distribution transformer using ANSYS fluent. Four different designs were examined and used modeling methodology to optimize the cooling system to minimize the hotspot temperature of the ventilation distribution transformer. They managed to reduce the hot spot temperature about 16 ° C by using the optimized geometry. They also found that the wing-channel rectangular design has a similar effect to the standard design, and the wide top parallelogram design has the best thermal performance. Raeisian et al. (2019) stated that the cooler performance of a 200kVA transformer is more affected by the fin height compared to the length of the fins and the distance between the fins. Weng (2009) stated that the thermal performance of LED lighting systems could be improved with a detailed CFD analysis. Zhu and Sun (2016) created a simplified numerical simulation model to estimate the heat dissipation of the LED heat sink in the global coordinate system, which will be useful for shape optimization design. While designing the heat sink, it is crucial to achieving optimum design, but some design concessions may have to be
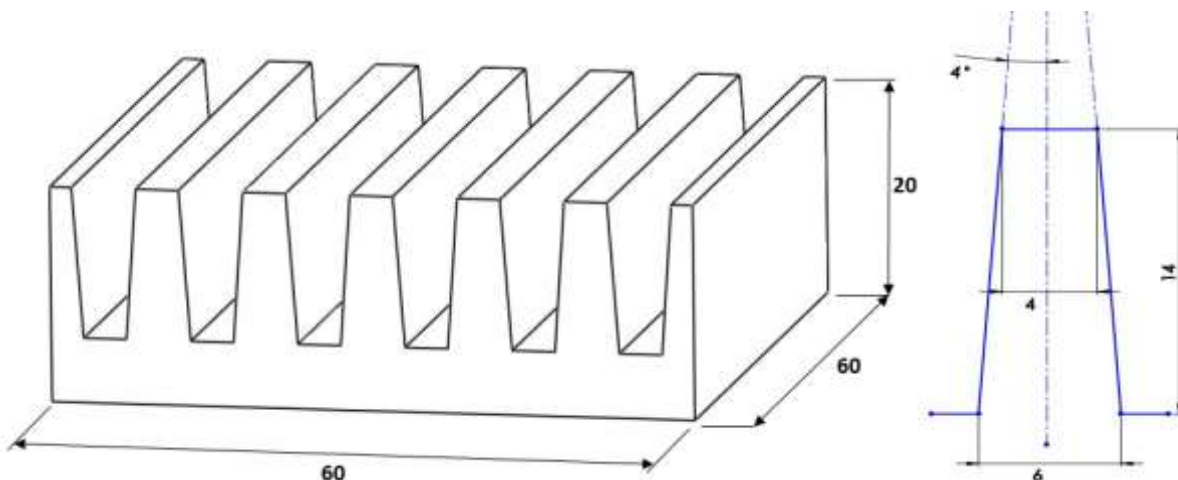
made. Indeed, numerical simulation and optimization of a radial heat sink were performed by Yu et al. (2011), and they stated that it is complicated to optimize both thermal performance and heat sink at the same time. Yamaç and Koca (2018) applied a heat flux of 1000 W/mm^2 to pin-fin, plate-fin, and plate-pin-fin heat sinks and compared their cooling performance using Fluent.

Joel et al. (2017) modeled the effect of fin geometry on the cooling process of computer microchips with MATLAB. Pin-fin consisting of aluminum, copper, silver, beryllium, and zinc materials, rectangular spine fin, triangular fin, and triangular spine (conical) wing geometries are used. Rectangular spine fin, triangular fin, and triangular spine (conical) fin geometries are used in the pin fin consisting of aluminum, copper, silver, beryllium, and zinc materials. Compared to the pin and rectangular spine fin geometry, the triangular spine fin geometry showed higher heat dissipation per unit volume and a higher maximum heat loss per number of fins. As expected, the copper material performed better due to its high thermal conductivity. Khan et al. (2006) analyzed the effect on thermal/fluid performance concerning different fin geometries, including rectangular plate fins as well as square, circular, and elliptical pin fins. Circular, rectangular, and elliptical geometries performed better according to various criteria, while square geometry performed worst in terms of heat transfer and drag force. Kim et al. (2010) carried out the thermal optimization of three different plate-fin heat sinks, such as rectangular, triangular, and reversed trapezoidal fins. The rectangular heat sink has achieved lower thermal resistance values compared to the reverse trapezoidal heat sink. Yang and Peng (2008) studied the numerical simulation of the heat sink with un-uniform fin height and stated that by increasing the height of the fins near the center of the heat sink, the junction temperature could be reduced better.

It can be seen from previous studies that the necessity to optimize the design of a heat sink and how essential it is to achieve heat dissipation. In this study, a numerical comparison of different geometries of heat sinks is made to decide the optimum fin structure.

2. Materials and Methods

Heat sinks have been designed in four different geometries as trapezoidal fins, trapezoidal-groove fins, groove fins, and groove-trapezoidal fins. The analyzed heat sink geometries are given in Fig. 1. Table 1 shows the physical properties of the designed heat sinks.

a) Groove type (low-fin)   b) Groove-trapezoidal type (low-fin)   c) Trapezoidal type (low-fin)   d) Trapezoidal-groove type (low-fin)

a) Groove type (high-fin)   b) Groove-trapezoidal type (high -fin)   c) Trapezoidal type (high -fin)   d) Trapezoidal-groove type (high -fin)
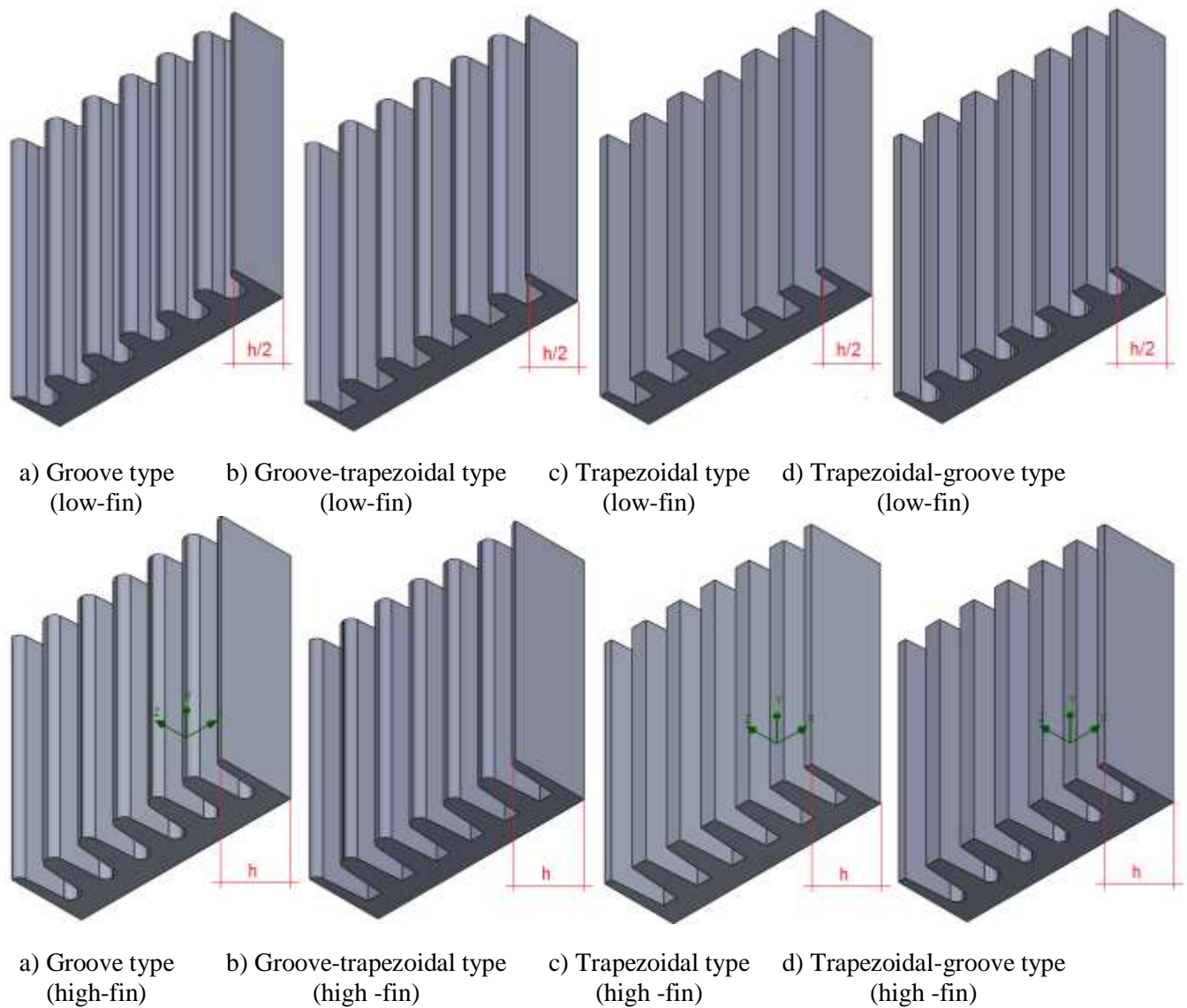
Fig 1. Heat sink geometries

Table 1. Physical properties of the designed heat sinks

	Groove-trapezoidal (low-fin)	Groove (low-fin)	Trapezoidal-groove (low-fin)	Trapezoidal (low-fin)	Groove-trapezoidal (high -fin)	Trapezoidal-groove (high -fin)	Groove (high-fin)	Trapezoidal (high -fin)
Mass (g)	88.06	89.76	91.32	89.61	125.6	128.45	127.2	127.04
Volume (mm^2)	32614.1	33246.2	33822.1	33190	4652.6	47572.4	47052	47050
Surface area (mm^3)	14003.2	13449.6	14014.3	14570.8	20025.9	20060.7	19520.96	20565.68

The numerical analysis allows making various analyzes and changes on the product without producing it. Thus, the costs incurred until reaching the ideal product with manufacturing almost zero. Numerical solutions can quickly decide on the product with the best performance. Similarly, this study was done in the SolidWorks Flow Simulation program to find optimum geometry. The working steps are given below;

• Heat sink geometries are drawn in the 'Geometry' section of the SolidWorks software, and necessary assignments have been made.
• The mesh structure required for the models has been created.
• Simulation boundary conditions were established by following the necessary steps in the relevant program.
• The simulation was run by positioning the heat source (5W and 10W) determined on the geometry in the Flow Simulation module.

Flow simulation uses Navier-Stokes equations with laws of conservation of mass, momentum, and energy, and solves management equations using a cubic Cartesian coordinate system.

Continuity equation:

$$\nabla(\rho \vec{V}) = 0 \tag{1}$$

Momentum equations:

$$\nabla(\rho u \vec{V}) = -\frac{\partial p}{\partial x} + \mu \nabla^2 u \tag{2}$$

$$\nabla(\rho v \vec{V}) = -\frac{\partial p}{\partial y} + \mu \nabla^2 v \tag{3}$$

$$\nabla(\rho w \vec{V}) = -\frac{\partial p}{\partial z} + \mu \nabla^2 u - \rho g \tag{4}$$

Energy equation:

$$\nabla(\rho \vec{V} T) = -\frac{k}{c_p} + \nabla^2 T + S \tag{5}$$

For solid bodies, Fourier's heat conduction law:

$$\nabla^2 T = 0 \tag{6}$$

Energy balance in a control volume in Cartesian coordinates;

$$\frac{\partial}{\partial x}\left(k\frac{\partial T}{\partial x}\right) + \frac{\partial}{\partial y}\left(k\frac{\partial T}{\partial y}\right) + \frac{\partial}{\partial z}\left(k\frac{\partial T}{\partial z}\right) + \dot{q} = \rho C_p \frac{\partial T}{\partial t} \tag{7}$$

Here, k is thermal conductivity (W/Km), $\dot{q}$ is internal heat generation (W/m³), ρ is material density (kg/m³), c_p is heat capacity of the material (kJ/kg K), T is temperature, and t is time. Fourier's law for dimensional flux:

$$q_x = -k \cdot A \cdot \frac{dT}{dx} \tag{8}$$

Here, qx denotes the heat flux in the x-direction (W) and the heat transfer area A (m²). It is derived from the Fourier equations and energy balance equations:

$$\frac{d^2 T}{dx^2} + \left(\frac{1}{A_c}\frac{dA_c}{dx}\right)\frac{dT}{dx} - \left(\frac{1}{A_c}\frac{h}{k}\frac{dA_s}{dx}\right)(T - T_\infty) = 0 \tag{9}$$

Here, h (W/Km²) is the convection coefficient.

3. Findings and Discussion

Material type and design shape are factors that affect performance in heat sinks. Adding fins to the heat sink and the geometric structure of the fins added on it have a critical effect on effective heat dissipation. However, sometimes changing it to a different geometry with a little touch can have a big

impact. In this study, using the computational fluid dynamics software SolidWorks Flow Simulation, a plate-fin heat sink, which is widely used for heat distribution, is analyzed in different geometries. Heat dissipation models of the heat sinks with 5W thermal power are shown in Fig. 2. Heat distribution towards the ambient surface occurs in natural convection. While the maximum temperature is obtained in the lower part, the heat sink temperature gradually decreases towards the fins. As can be seen from the figures, while lower temperatures occur at low power, higher temperatures are obtained at high powers. Besides, it is seen that the higher the fin height, the better the heat dissipation and lower temperatures are obtained.
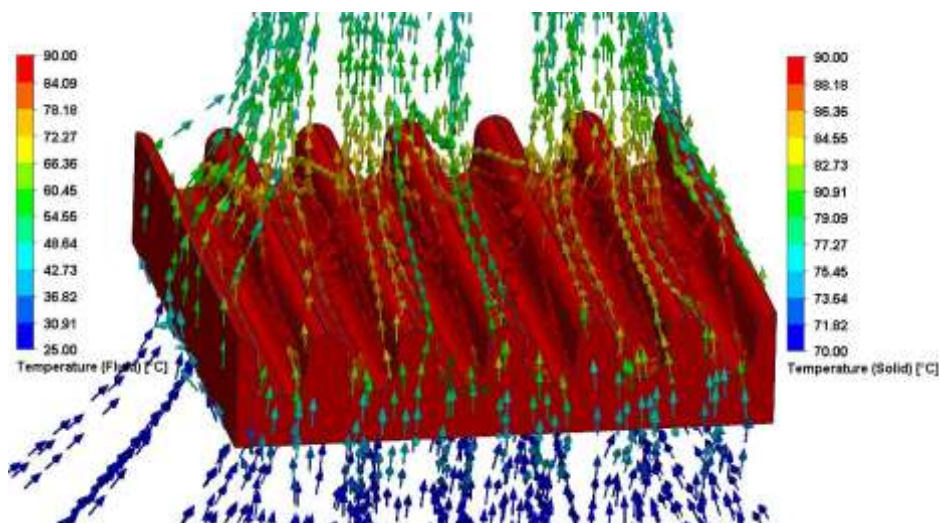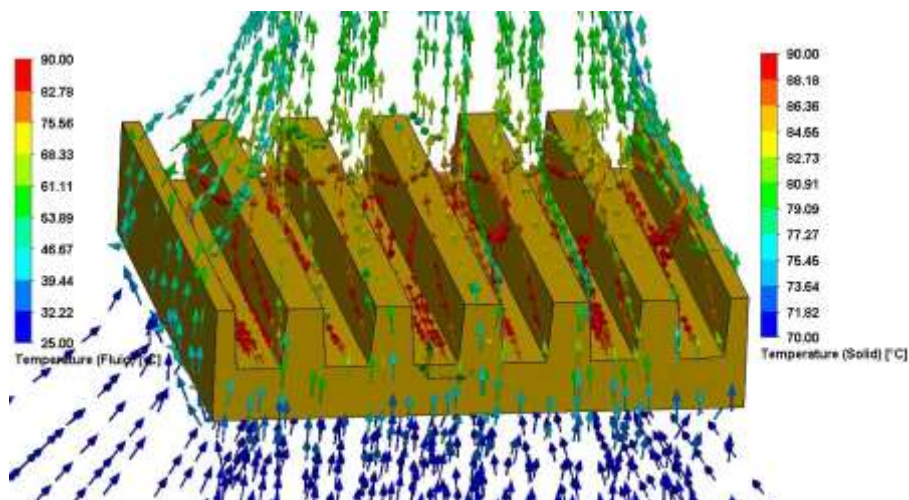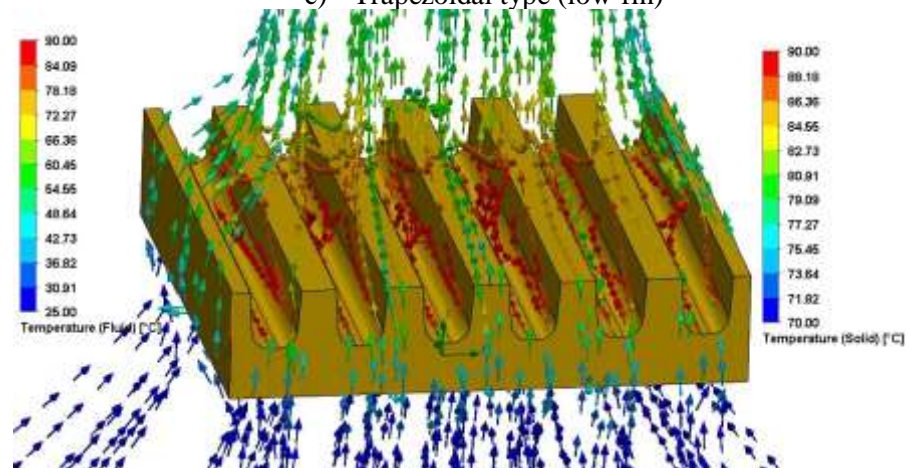
a) Groove type (low-fin)
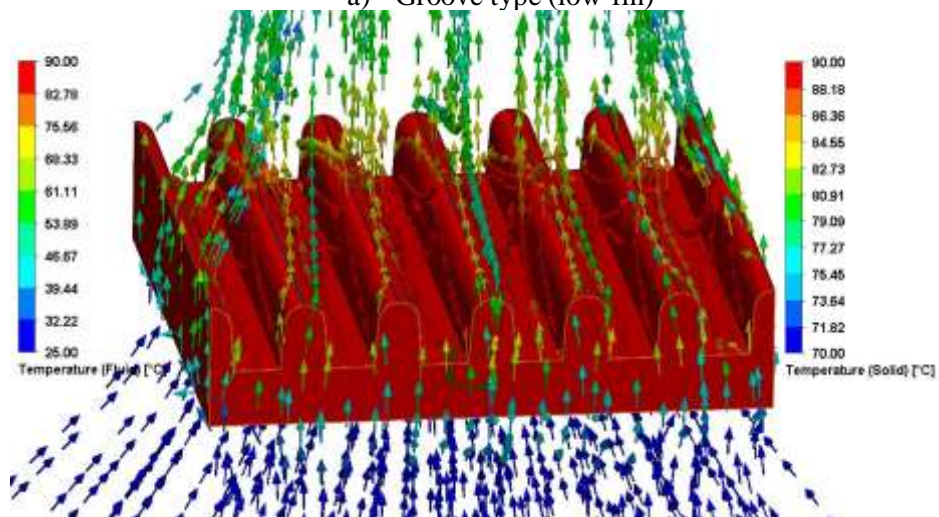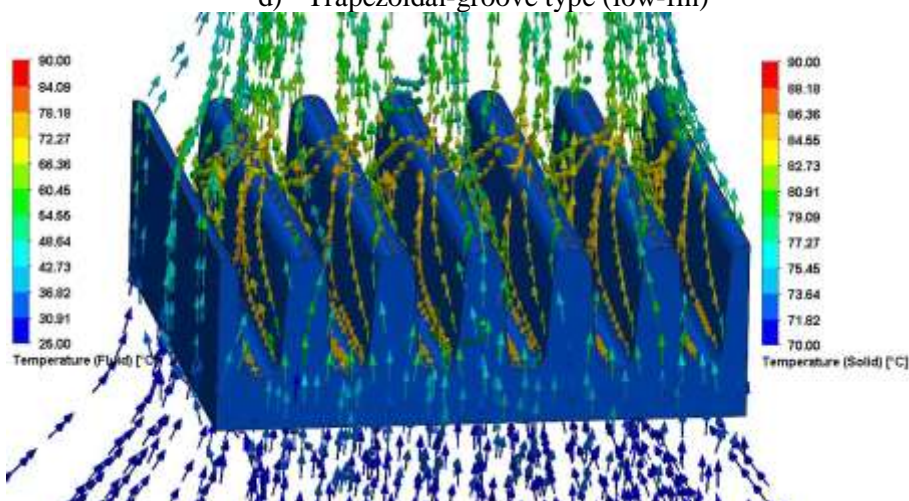
b) Groove-trapezoidal type (low-fin)

c) Trapezoidal type (low-fin)

d) Trapezoidal-groove type (low-fin)

e) Groove type (low-fin)
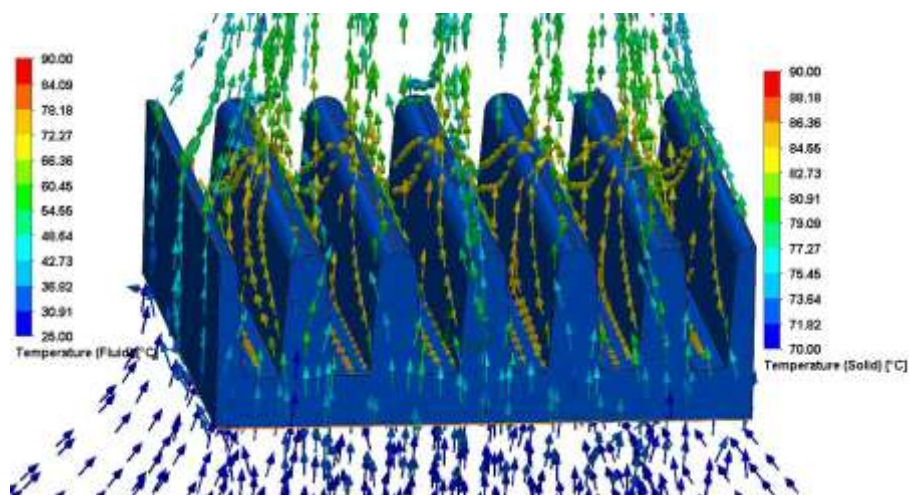
f)   Groove-trapezoidal type (low-fin)
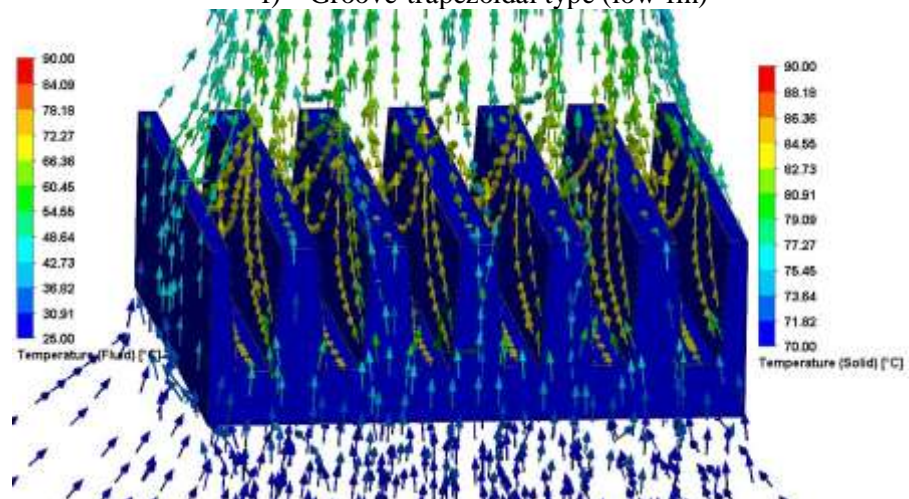
g)   Trapezoidal type (low-fin)
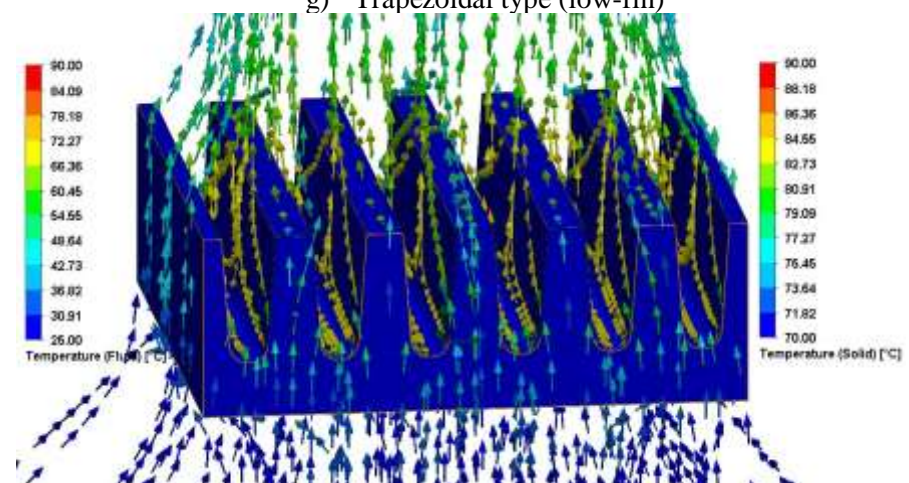
h)   Trapezoidal-groove type (low-fin)

Fig. 2. Heat dissipation models of heat sinks (5W)
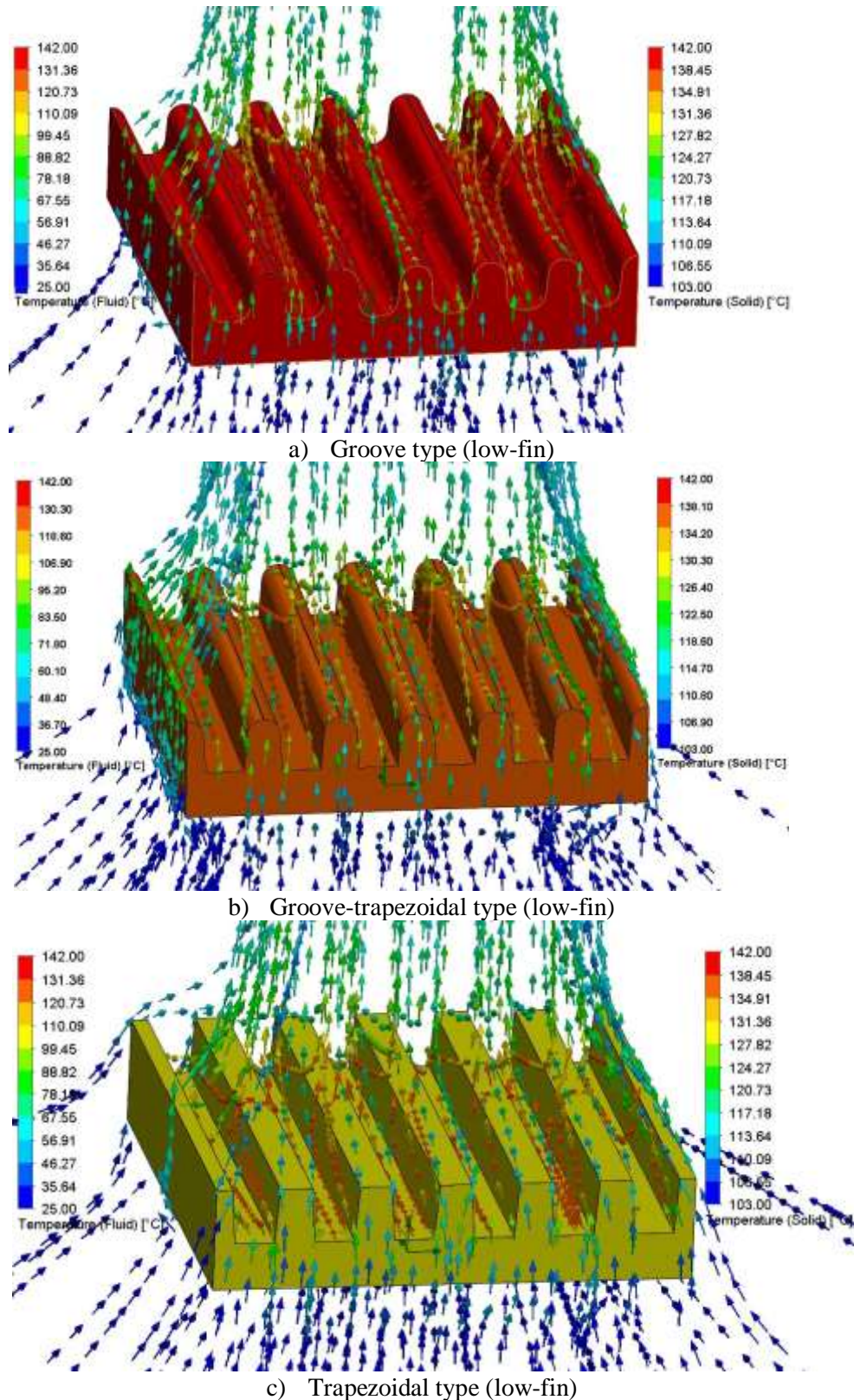
a) Groove type (low-fin)

b) Groove-trapezoidal type (low-fin)

c) Trapezoidal type (low-fin)
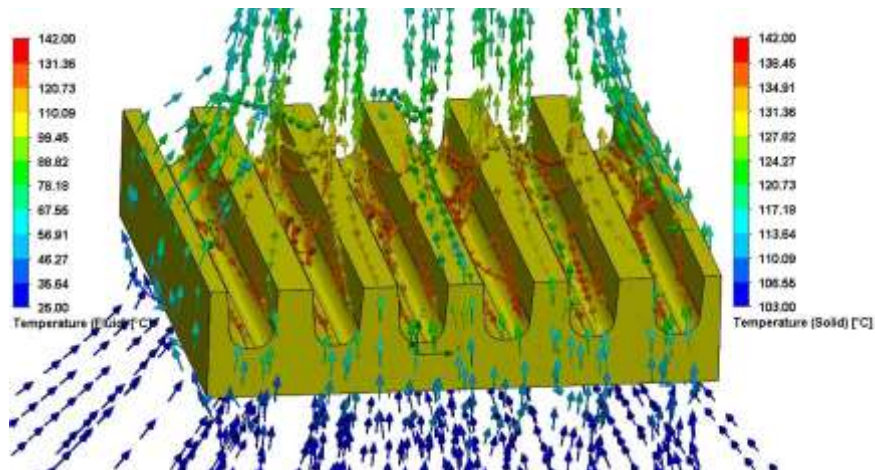
d) Trapezoidal-groove type (low-fin)
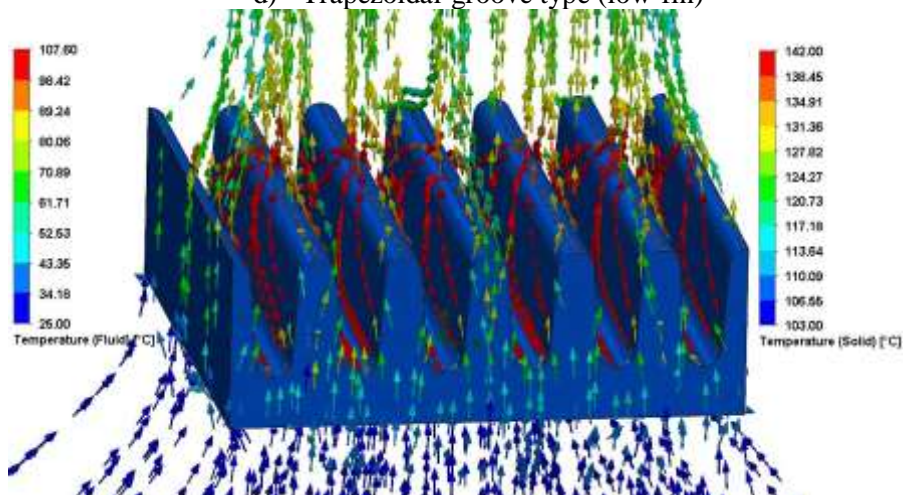
e) Groove type (high-fin)
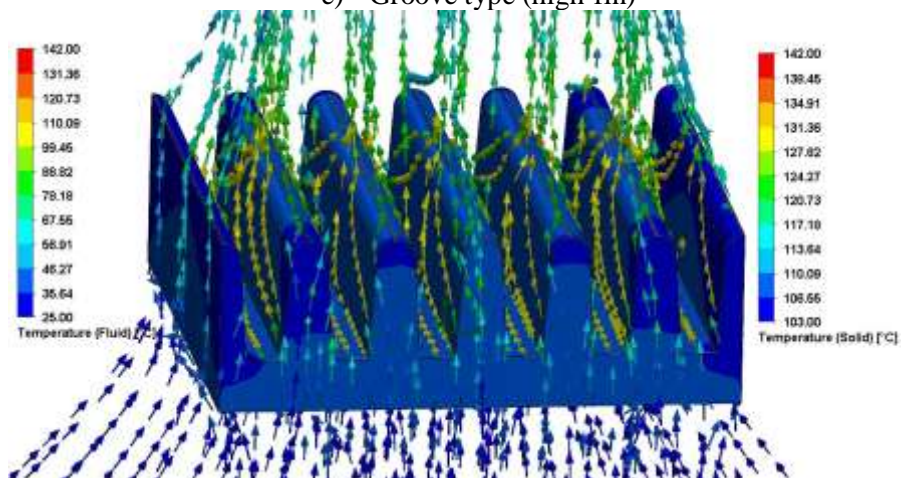
f) Groove-trapezoidal type (high -fin)
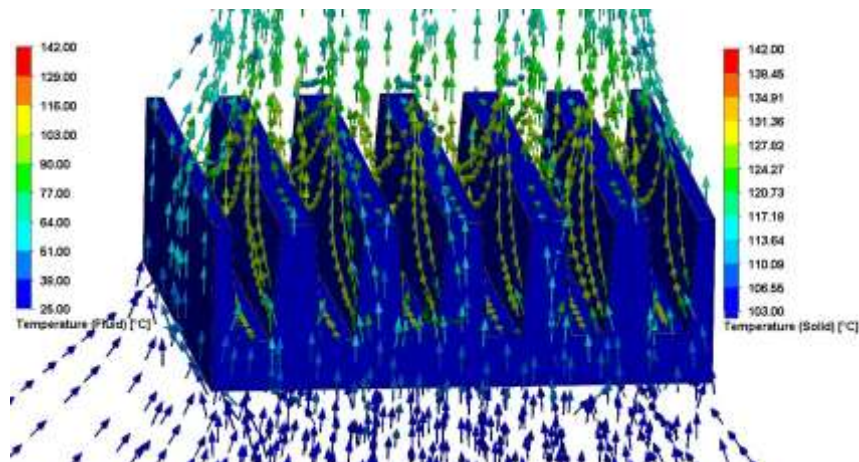
g) Trapezoidal type (high -fin)
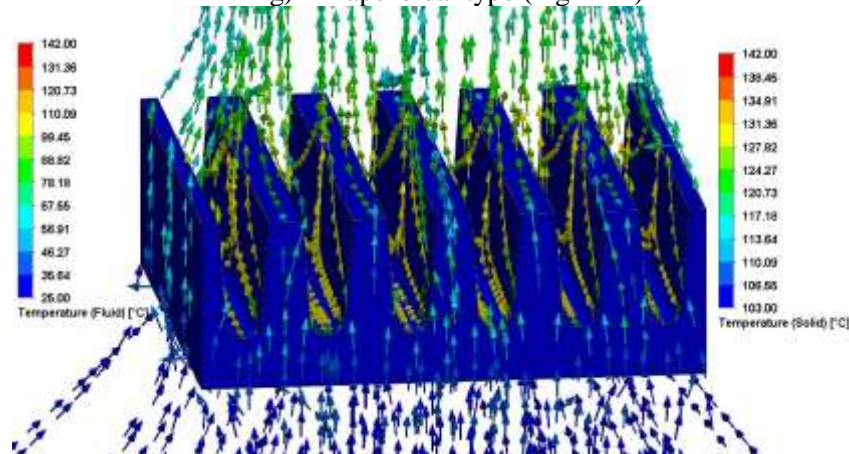
h) Trapezoidal-groove type (high -fin)

Fig. 3. Heat dissipation models of heat sinks (10W)

The temperature diagram based on iteration for 5W and 10W is given in Fig. 4. The trapezoidal heat sink has achieved the highest performance, although the height has changed, the result has not changed. As the fin height increases, the performance difference between the trapezoidal and trapezoidal-gutter heat sinks increases.
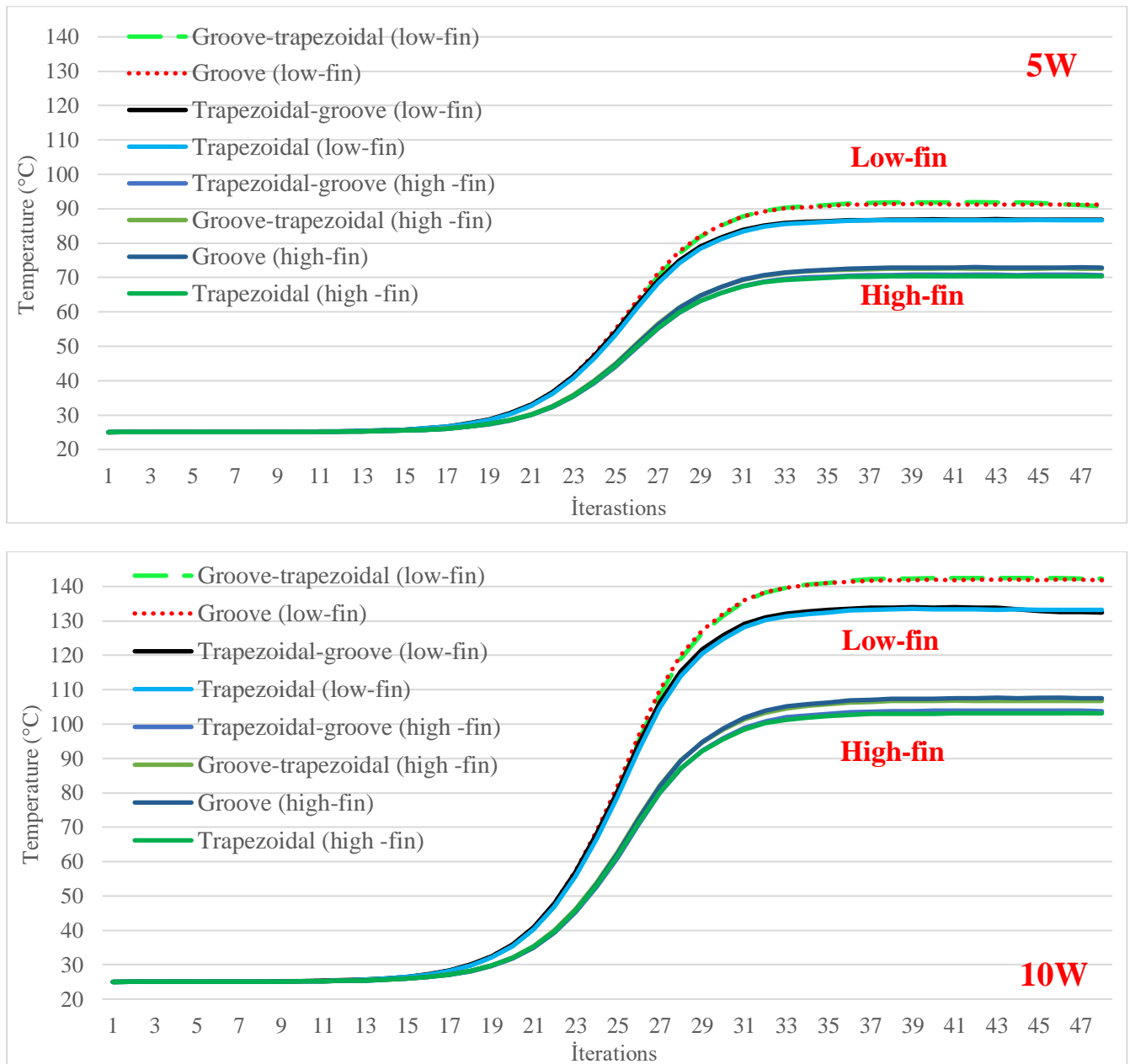
Fig. 4. Temperature diagram depending on the iteration

Fig. 5 shows the maximum temperatures achieved at the heat sinks for 5W and 10W thermal powers. When 5W thermal power is applied to the groove (low-fin) and groove-trapezoidal (low-fin) heat sinks, the maximum temperature reaches 92 °C, while the maximum temperature reached 87 °C in trapezoidal (low-fin) and trapezoidal-groove (low-fin) heat sinks in the same thermal power. When 5W was applied to high-fin products, the maximum temperature was 70 °C, while this value reached 107 °C for 10W. For 5W, the maximum temperature difference between high-fin models is 3 °C, while this difference is 6 °C for low-fin products. For 10W, the maximum temperature difference between high-fin models is 4 °C, while this difference is 8 °C for low-fin products. The maximum difference between low-fin and high-fin is 20 °C. When 10W thermal power is applied to the groove (low-fin) and groove-trapezoidal (low-fin) heat sinks, the maximum temperature reaches 142 °C,

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while the maximum temperature reached 134 °C in trapezoidal (low-fin) and trapezoidal-groove (low-fin) heat sinks in the same thermal power. For the same power, the maximum difference between low-fin and high-fin designs is 39 °C. When 5W and 10W are applied to low-fin models, the maximum temperature difference is 56 °C, while the maximum temperature difference is 37 °C when the same thermal powers are applied to high-fin models.

	Groove-trapezoidal (low-fin)	Groove (low-fin)	Trapezoidal-groove (low-fin)	Trapezoidal (low-fin)	Trapezoidal-groove (high-fin)	Groove-trapezoidal (high-fin)	Groove (high-fin)	Trapezoidal (high-fin)
10 W	142,485168	142,053453	134,00946	133,528875	103,910896	106,812211	107,647325	103,151182
5 W	91,9177674	91,3622764	86,9371126	86,728354	70,7834147	72,6501323	72,9686634	70,3710033
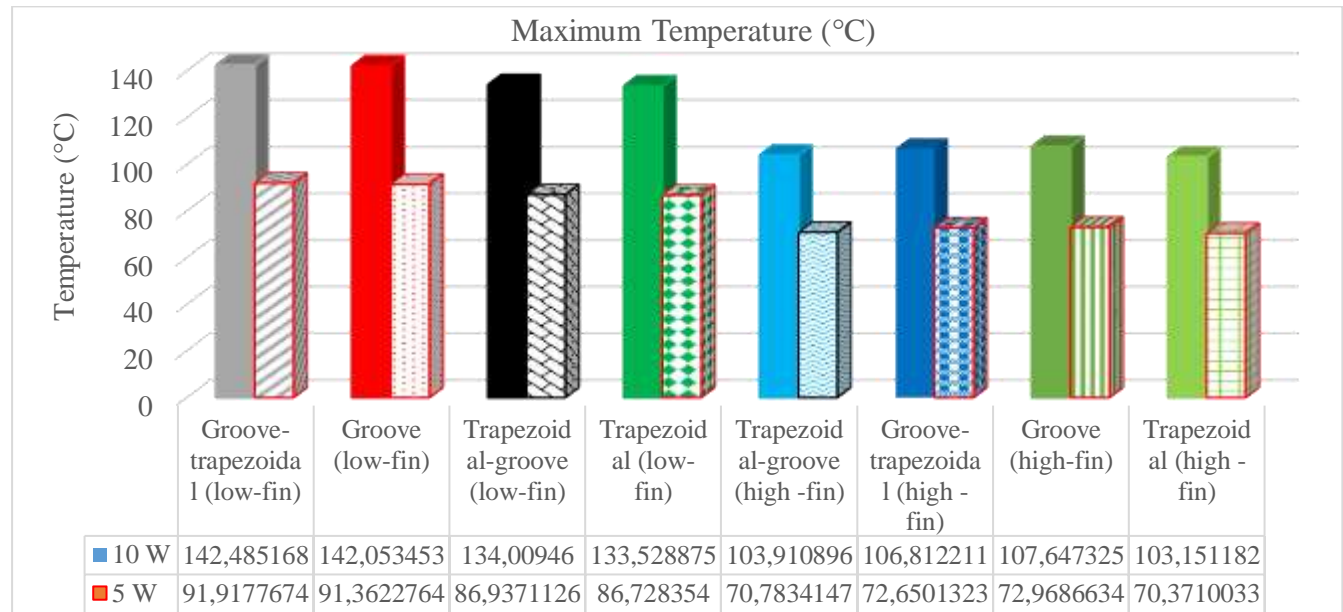
Fig. 5. Maximum temperatures obtained in heat sinks for 5W and 10W thermal power

4. Conclusion

When 5W and 10W heat power is applied to each heat sink, the trapezoidal-fin geometry has been determined as the best geometry to be used for cooler design. For 5W, the maximum temperature difference between high-fin models is 3 °C, while this difference is 6 °C for low-fin designs. For 10W, the maximum temperature difference between high-fin models is 4 °C, while this difference is 8 °C for low-fin models. The results showed that the maximum temperature is affected more by the fin height rather than the fin structure, which dramatically affects the life of the product to be cooled and its safer performance. The results obtained from this study will assist the heat sink designer in deciding the best fin geometry to be used in electronic component cooling applications for a given heat power.

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HUKUKİ AÇIDAN SALGIN HASTALIKLARDA AŞI YAPTIRMA ZORUNLULUĞU VAR MIDIR?

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Özet

Salgın hastalık olağanüstü bir durumdur. Hukuk her alanı düzenlediği gibi olağanüstü durumları da düzenlemelidir. Salgın hastalık durumunda, hukuki hak ve özgürlüklerle salgına karşı alınan önlemler kimi zaman çatışma halindedir. Zorunlu aşı uygulaması ve vücut dokunulmazlığı hakkı birbiriyle çatışmaktadır.

Zorunlu aşı uygulaması her ülkede farklılık göstermektedir. Kimi ülkelerde, zorunlu aşı uygulaması yerinde bulunup yasal bir düzenleme yapılmaktadır. Kimi ülkeler ise, zorunlu aşı uygulamasının bireysel hak ve özgürlüklerle bağdaşmayacağı gerekçesiyle hukuken uygun olamayacağını ve dolayısıyla hukuki bir düzenleme yapılamayacağını savunur.

Zorunlu aşı ile ilgili Türkiye'deki mevzuata baktığımızda ilk aklımıza 1930 tarihli Umumi Hıfzısıhha Kanunu gelir. 1930 tarihli Umumi Hıfzısıhha Kanunu, tarih olarak çok eski bir kanun olsa da birçok probleme çözüm getiren bir kanun olarak karşımıza çıkmaktadır. Söz konusu kanunda zorunlu aşı ile ilgili düzenlemeler vardır. 1930 tarihli Umumi Hıfzısıhha Kanunu güncellenmediği için bazı güncel salgınlar bu kanun kapsamında yer almamaktadır. Günümüzde insan hayatını tehdit eden Covid- 19 salgını, yeni bir salgın olması sebebiyle bu kanunla düzenlenmemiştir. Covid 19 hastalarına ya da herhangibir bir hastalık taşımayan bireye bu kanun kapsamında zorunlu aşı uygulamak mümkün görünmemektedir.

Türk Anayasa Mahkemesi önüne gelen bir bireysel başvuruda, Umumi Hıfzısıhha Kanunu 57. madde de sayılan bir hastalık söz konusu olmadığı takdirde zorunlu aşı uygulamanın mümkün olmadığını karara bağlamıştır. Bu tebliğ kapsamında, Türk Anayasa Mahkemesi'nin bireysel başvuruda verdiği söz konusu kararın eleştirisi yapılacaktır. Yine bu tebliğte zorunlu aşının Covid-19 hastalığı için de söz konusu olup olamayacağı irdelenecektir.

Evrensel hukukta, zorunlu aşıya bakış incelenecek ve Türk Hukuku ile kıyaslanacaktır. Zorunlu aşı uygulamasının gerekli olup olmadığı noktasında tartışmalar yapılacaktır.

Anahtar kelimeler: aşı, zorunlu aşı, özgürlük, salgın hastalık

IS THERE A LEGAL OBLIGATION OF VACCINATION IN CONSEQUENTIAL DISEASES?

Epidemic is an extraordinary situation. Law should regulate extraordinary situations as it regulates every field. In case of an epidemic, legal rights and freedoms and measures taken against the epidemic are sometimes in conflict. Mandatory vaccination and the right to body immunity conflict with each other.

Mandatory vaccination practice differs in each country. In some countries, mandatory vaccination is in place and a legal regulation is made. Some countries, on the other hand, argue that the mandatory vaccination application cannot be legally appropriate on the grounds that it is not compatible with individual rights and freedoms, and therefore a legal arrangement cannot be made.

When we look at the relevant legislation in Turkey with mandatory vaccine first comes to mind 1930, the General Hygiene Law. Although the General Hygiene Law of 1930 is a very old law in history, it appears as a law that provides solutions to many problems. The law in question contains regulations on compulsory vaccination. Since the General Hygiene Law of 1930 was not updated, some current outbreaks are not covered by this law. The Covid-19 epidemic, which threatens human life today, has not been regulated by this law due to the fact that it is a new epidemic. It does not seem possible to apply mandatory vaccination to Covid 19 patients or individuals who do not have any disease under this law.

In an individual application filed with the Turkish Constitutional Court, it has been decided that compulsory vaccination is not possible unless there is a disease listed in Article 57 of the General Hygiene Law. Within the scope of this communiqué, the aforementioned decision of the Turkish Constitutional Court in the individual application will be criticized. Again, in this communique, it will be discussed whether the mandatory vaccine can also be a matter for Covid-19 disease.

In universal law, view of compulsory vaccination will be examined and compared with Turkish Law. There will be discussions on whether mandatory vaccination is necessary or not.

Keywords: vaccine, mandatory vaccine, freedom, epidemic

Giriş

Sağlık hizmetinin temel amacı, bireylerin sağlıklarını korumaktır. Sağlık hizmetleri ile sağlık korunup, hastalıkların önüne geçmek amaçlanmıştır. Bulaşıcı hastalık söz konusu olduğunda, hastalığı önlemek amacıyla başvurulması gereken önlem olarak ilk akla aşı gelmektedir. Ülkemizde, çocukların aşılanması konusunda, çocuk aşı programları oldukça başarılı olarak uygulanmaktadır (Yüksel/ Topuzoğlu, 2019, s.34). Ülkemizde çocuk aşı programları oldukça başarılı uygulanıyor olsa bile bazı endişeler de söz konusudur.

Aşı ile ilgili en başta gelen sorun "aşı reddi" olmuştur. Aşı reddi ile ilgili Dünya Sağlık Örgütü'nün çalışmaları olmuştur. Aşı redlerinde, bireylerin ve ailelerin bilgisiz olması en önemli sebep olarak görünmektedir(Yüksel/Topuzoğlu, s.34).

Dünya Sağlık Örgütü'nün yaptığı araştırmalarda, aşı reddi ve aşı tereddüdü gibi kavramların birbirinden farklı kavramlar olduğu belirtilmiştir. Salgın hastalık döneminde aşı yapma zorunluluğu olup olmadığı hukuken tartışmalıdır.

I. Zorunlu Aşı Kavramı

Aşı, Beşeri Tıbbi Ürünler Ruhsatlandırma Yönetmeliği'ne göre "immünolojik ürün" olarak ifade edilmektedir**.** Aşı, zorunlu ve tavsiye edilen aşılar olarak ikiye ayrılmaktadır(Kasapoğlu,2019, s.4.). Konumuz bakımından önemli olan tavsiye edilen aşı değil, zorunlu aşılardır.

Zorunlu aşıların yapılmasını devlet üstlenmekte, ülkeden ülkeye aşı reddi durumunda uygulanacak yaptırımlar birbirinden farklılaşmaktadır.

Aşılama faaliyeti, kişiyi ve dolayısıyla toplumu hastalıklardan korumaya yönelik bir sağlık tedbiridir. Aşılama faaliyeti aynı zamanda bir tıbbi müdahaledir(Kasapoğlu, s.4.).

Aşı faaliyetlerin amacı, tek tek bireyleri korumak değil, toplumu korumak ve toplum bağışıklığını sağlamaktır. Toplum bağışıklığı sağlamak aynı zamanda toplumunda yararınadır.

 Aşı konusunda bazı ülkeler faydaları konusunda halkı eğiterek tercihi kişilere bırakırken, bazı ülkeler aşılamayı özendirici bir devlet politikası benimseyerek çocuklarını aşılatan ailelere mali teşvikte bulunmaktadır; diğer bir grup ülke ise aşılamayı zorunlu tutmaktadır(Walkınshaw, 2011, 1167).

II. Salgın Hastalık Olması Durumunda Aşı Yaptırmak Zorunlu Mudur?

Salgın hastalık durumunda aşı yaptırıp yaptırmama yükümlülüğü olup olmadığı tartışmalıdır. Özellikle, günümüzde Covid 19 pandemisinin söz konusu olduğu günümüzde aşı çalışmaların yürütüldüğünü görsel ve yazılı basından öğreniyoruz. Acaba bu çalışmaların sonunda bulunacak aşıyı hukuken herkes yaptırmakla yükümlü müdür?

Bu konuda, kişinin vücut bütünlüğünü koruma hakkı ile kamu yararının korunması hakkı çatışmaktadır.

Kanımızca, salgın hastalık olması durumunda, toplum sağlığını da korumak amacıyla devletler halklarını zorunlu aşı uygulamasına tâbi tutabilir. Elbette ki bu durum söz konusu ülkedeki siyasi iktidarın iradesine bağlıdır. Siyasi iktidar, ister zorunlu tutar isterse de serbest bırakır.

Aşı konusunda, ulusal düzenlemelere baktığımızda ilk olarak, Anayasa'nın sağlık hakkını düzenleyen 56'ncı maddesine göre "Herkes, sağlıklı ve dengeli bir çevrede yaşama hakkına sahiptir". Ayrıca, devlet herkesin hayatını, beden ve ruh sağlığı içinde sürdürmesini sağlamakla yükümlüdür" maddesi karşımıza çıkmaktadır.

Yine ulusal düzenlemelere baktığımızda, Anayasa madde 17 uyarınca ""tıbbi zorunluluklar ve kanunda yazılı haller dışında, kişinin vücut bütünlüğüne dokunulamaz; rızası olmadan bilimsel ve tıbbi deneylere tabi tutulamaz" maddesi söz konusudur.

Bu iki maddeye baktığımızda, aşının salgın döneminde veya salgın olmaksızın zorunlu olup olmadığı tartışılmalıdır.

Yine ulusal düzenlemelere baktığınızda, Türk Medeni Kanunu'nun 24'üncü maddesine göre "Hukuka aykırı olarak kişilik hakkına saldırılan kimse, hâkimden, saldırıda bulunanlara karşı korunmasını isteyebilir. Kişilik hakkı zedelenen kimsenin rızası, daha üstün nitelikte özel veya kamusal yarar ya da kanunun verdiği yetkinin kullanılması sebeplerinden biriyle haklı kılınmadıkça, kişilik haklarına yapılan her saldırı hukuka aykırıdır." Buna göre kişilik haklarının zedelenmesi "kişilik hakkı zedelenen kimsenin rızası", "daha üstün nitelikte özel veya kamusal yarar" ya da "kanunun verdiği yetkinin kullanılması" durumlarından birinin varlığı halinde hukuka uygun olmaktadır" düzenlemesi söz konusudur.

1593 Sayılı Umumi Hıfzıssıhha Kanunu'nda da idarenin toplumu bulaşıcı hastalıklardan koruma görevi düzenlenmektedir. Kanun'un 1'inci maddesine göre "Memleketin sıhhi şartlarını ıslah ve milletin sıhhatine zarar veren bütün hastalıklar veya sair muzır amillerle mücadele etmek ve müstakbel neslin sıhatli olarak yetişmesini temin ve halkı tıbbi ve içtimai muavenete mazhar eylemek umumi Devlet hizmetlerindendir" düzenlemesi söz konusudur.

Umumi Hıfzısıhha Kanununa göre zorunlu olan tek aşı, çiçek aşısıdır. Bulaşıcı hastalıklara karşı yapılan aşılama faaliyeti, tıbbi bir müdahale olsa da, klasik anlamda tedavi amaçlı yapılan tıbbi müdahaleden farklıdır(Çakmut Yenerer, 2013,s.54).

Sonuç

Aşılar, zorunlu ve tavsiye edilen aşılar olarak ikiye ayrılmaktadır. Tavsiye edilen aşılar açısından hukuken bir sorun söz konusu değilken, zorunlu aşıların mümkün olup olmadığı tartışmalıdır. Kanımızca, zorunlu aşı salgın hastalıklar söz konusu olduğunda mecbur olmalıdır.

Covid 19 pandemisi ile ilgili bulunacak aşı da bu kapsamda zorunlu olmalı ve gerekli düzenlemeler iç hukukta yapılmalıdır.

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EĞİTİM ERGONOMİSİ VE ÖĞRENMEYİ ÖĞRENME

Cengiz TOPDEMİR
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Özet

Bu çalışmada, bilgi ile öğrenme arasındaki ilişkiler anlatılmaktadır. Çalışmayı orijinal kılan en önemli unsur bilginin sisteme dönüştürülmesi ve güncel tutulması noktasında yeni bir bakış açısını ileri sürmesidir. Tüm canlılar yaşamları boyunca öğrenme sürecini devam ettirirler. Bizim belirlediğimiz alan özelde insan eğitimini ele alarak, bu sürecin daha kaliteli ve daha verimli olması yönünde eğitim ergonomisi ve öğrenmeyi öğrenme yöntemlerini kapsamaktadır. Eğitim; eğitim alan ve eğitim veren olmak üzere iki temel tarafın bir araya gelmesiyle gerçekleşen etkinlikler zinciridir. Bu iletişimin gerçekleştiği ortam, iklim, teknik donanım, materyal, aktarım kalitesi gibi etkenler ise işin ergonomi boyutunu meydana getirmektedir. Eğitim sistemi tüm bileşenleri koordine eden, günün koşullarına uygun yeniliklerin uygulanmasında düzenlemeler yapan ve müfredatını geleceğin tasarımı üzerine kuran temel faktördür. Bu anlamda tüm tarafların uyum ve koordineli çalışması sonucu bilgi ve becerilerin oluşumu, aktarımı noktasında istenen seviye yakalanmış olur. Biz geleneksel eğitim sistemlerinden çok, geleceğin eğitim anlayışına yönelik tespitler ve hızla gelişen teknolojiye adaptasyonda atılması gereken önemli adımları ele almaya çalıştık. Ayrıca özellikle matematik alanında verilen eğitimde başarısızlığın nedenleri ele alınarak, farklı bir aktarım yöntemi ile bu sorunun çözümüne katkı sunmaya çalıştık. Bu arada eğitim alan bireylerin eğitim sistemi içerisindeki konumunun tanımlanması da yapılmıştır. Eğitimde toplam kalitenin yakalanması, geleceğin inşasında sağlam bir temel atılması noktasında oldukça önemlidir. Özellikle yapay zekâ, uzay teknolojisi ve gelecekte teknolojiden maksimum seviyede yararlanacak insan profili göz önünde bulundurulursa, eğitimde hızlı ve köklü hamlelerin yapılması kaçınılmaz bir gerçektir. Soran, sorgulayan, araştıran ve elde ettiği bilgiyi kullanabilen bireyler yetiştirmek, eğitimde temel ilke olmalıdır. Bu ilke; bir nesli büyütmek ile yetiştirmek arasındaki önemli farkın altını kalın çizgilerle çizmektir. Sonuç olarak çalışmamız tüm bu detaylara dikkat çekmek ve yeni bir bakış açısı ortaya koymak amacıyla yapılmıştır.

Anahtar Sözcük: Bilgi, Öğrenme, Eğitim, Yöntem, Sistem

EDUCATION ERGONOMICS AND LEARNING

Abstract

In this study, the relationship between knowledge and learning is explained. The most important factor that makes the study original is that it proposes a new perspective on the transformation of information into the system and keeping it up to date. All living things continue the learning process throughout their lives. Our field of study covers educational ergonomics and learning to learn in order to make this process more quality and more productive by addressing human education in particular. Education; It is a chain of activities that takes place by bringing together the two main parties, the educator and the educator. The factors such as the environment in which this communication takes place, climate, technical equipment, material, and transmission quality constitute the ergonomics dimension of the work. The education system is the main factor that coordinates all components, makes arrangements for the implementation of innovations appropriate to the conditions of the day and builds its curriculum on the design of the future. In this sense, as a result of the harmony and coordinated work of all parties, the desired level is achieved in the formation and transfer of knowledge and skills. We have tried to address the important steps to be taken in determining the future education understanding and adapting to the rapidly developing technology rather than traditional education systems. In addition, we have tried to contribute to the solution of this problem with a different transfer method, especially by considering the reasons of failure in the education given in the field of mathematics. In the meantime, the position of the individuals in the education system was defined. Achieving total quality in education is very important for establishing a solid foundation in the construction of the future. Especially considering the artificial intelligence, space technology and the human profile that will benefit from the maximum level of technology in the future, it is an inevitable fact that fast and radical moves are made in education. Educating individuals who ask, question, investigate and use the knowledge they have obtained should be the basic principle in education. This principle; to underline the important difference between growing and educating a generation. As a result, our study was carried out in order to draw attention to all these details and to present a new perspective.

Keywords: Knowledge, Learning, Education, Method, System

1. GİRİŞ

Zaman, sonsuzluk denizine akan en güçlü nehirdir. Geçmişten geleceğe büyük bir ahenkle akan bu nehir, bütün birikimlerin geleceğe taşınması noktasında çok önemli bir görev üstlenmektedir. Tüm canlılar genetik bilgilenme sürecinin dışında, doğumundan ölümüne kadar olan yaşam sürecinde öğrenmeye açıktır. Öğrenmenin temel gıdası bilgidir. Ancak burada önemli bir detayın altı kalın çizgilerle çizilmelidir. Sorgulanmamış bilgi aynı zamanda cehaletin tohumu gibidir. Bilgi transferinin uygun ortam ve koşullarda sunulması eğitimin ergonomisini oluşturur. Tüm bu tanımlama ve kavramlar aslında öğrenmenin genel yapı taşlarıdır. Kaliteli bir eğitim, eğitimin tüm bileşenlerinin zamanın koşullarına uygun şartlarda

bir araya gelmesiyle mümkündür. Bir neslin tüm yaşamsal gereksinimlerini karşılamak, ilgi ve sevgiyle büyütmek ile o nesli zamanın koşullarına uygun, gelecekte kendi yol haritasını çizebilecek seviyede sağlam bir eğitim vererek yetiştirmek arasında çok ciddi bir fark vardır. Bu fark gelişmiş ülkelerle, gelişmekte olan ya da gelişmemiş ülkeler arasındaki en belirgin farktır.

2.EĞİTİMİNİN TARAFLARI

Eğitimin iki olmazsa olmaz tarafı vardır. Bunlar eğitimi veren kişi ve eğitimi alan kişidir. Ancak burada altını çizmemiz gereken önemli bir durum var. Genel anlamda eğitimi veren kişi eğitmen, öğretmen, öğretim görevlisi vb. isimlerden biri ile anılırken, eğitimi alan kişi öğrenci olarak adlandırılır. Bir bireyin anaokulundan doktora safhasına kadar olan tüm sürecini öğrenci şeklinde adlandırmak doğru mudur? Bu süreç yaklaşık olarak yirmi beş seneyi kapsamaktadır. Bir çocuğu okul yerine herhangi bir işe yönlendirseniz ve çeyrek asır gibi insan hayatında çok önemli bir süreyi çırak olarak devam ettirmesini isteseniz, büyük bir tepki ile karşılaşırsınız. Belki de eğitimin ilk düzeltilmesi gereken kısmı tarafların tanımının yeniden yapılması olacaktır. Kreş, anaokulu, ilköğretim ve ortaöğretim aşamasında öğrenme ve kişisel becerilerin belirlenmesi döneminde olan bireylere öğrenci tanımlaması anlaşılabilir bir durumdur. Ancak lise düzeyindeki bir bireye öğrenci yerine, bilim insanı adayı tanımlaması yapılırsa, bireyin kendine güveni ve okula yaklaşımı olumlu yönde olacaktır. Üniversite aşamasında artık araştırmacı, yüksek lisans programında akademik görüş ve tezlerini ortaya koyabilen bilim insanı tanımlaması eğitimin başarıya ulaşması ve tarafların eğitime bakış açısını olumlu yönde etkileyen faktörler olacaktır.

3.EĞİTİM ERGONOMİSİ

Eğitimin sunulduğu ortamın fiziksel ve teknik donanımlarının, eğitim alan ve eğitimi veren bireylerin her türlü sağlık, psikolojik ve ruhsal açıdan kendilerini iyi hissetmelerini sağlayacak şekilde olması gerekir. Aydınlatmadan, ısıya, oturma araç ve gereçlerinden havalandırmaya kadar pek çok etkenin standartlarının sıralanabileceği geniş bir alandan söz etmek mümkündür. Ancak bizim asıl değinmek istediğimiz ergonomi türü, eğitimde iletişimin sağlanmasıdır. Şunu asla unutmamak gerekir ki; bir canlının gönlünü fethetmeden, beynine asla hükmedemezsiniz. Yani sevgi ile yaklaşmak, empati kurabilmek, eğitim alan bireylerin tamamının anlayabileceği basit cümleler kurarak, aktarılan bilginin ya da becerinin genel anlamda tüm katılımcılar tarafından kavranmasını sağlamak en iyi yöntemdir. Bu özellikler hepimizin tüm eğitim hayatı boyunca, hiç ilgimiz olmadığı halde eğitimcinin gönlümüzdeki yeri nedeniyle büyük bir istekle verilen eğitime katıldığımız gerçeğini ortaya koymaktadır. Eğitim ciddi bir iletişim hattıdır ve çift taraflıdır. Yani öğreten ve öğrenen zaman zaman yer değiştirebilmektedir. Bu iletişim hattının kopması, eğitimde başarısızlığın temel sebeplerinden biridir.

4.ÖĞRENMEYİ ÖĞRENME

4.1.BİLGİ NEDİR?

Bilgi canlı bir organizmadır. Doğar, büyür, gelişir ve ölür. Yani dün doğru bildiğimiz şeyler, bugün tartışılabilir, yarın kısmen ya da tamamen hükmünü kaybedebilir. O halde dünkü bilgi ile yarına yolculuk yapmak çok doğru bir yöntem değildir. Bilgide ısrarcı olmak yerine sürekli güncelleme yapmak, bilgiyi günün koşullarına göre yeniden gözden geçirmek daha sağlıklı ve daha verimli sonuçlar doğuracaktır.

Ayrıca bilginin elastik yapısından yararlanarak farklı alanlarda kullanımını sağlamak, tek başına sahip olduğu değerinin katlanarak çoğalmasına olanak verecektir. Bu durum da eğitim alan bireylerin öğrendiklerini bilimsel ve günlük hayatta nerelerde, nasıl işe yaradığını bilgi alışverişi sırasında kavramalarını sağlayacaktır. Bu da bilginin değerini artıracaktır.

4.2.YÖNTEM

Edinilen bilgi tek başına çok büyük anlam ifade etmez. Ancak onu genel geçer, kolay anlaşılabilir ve uygulanabilir bir yönteme dönüştürmek, bilginin bilim kapısını açabilen anahtar özelliğine dönüşmesini sağlayacaktır. Bilgiyi dar alana sıkıştırmak yerine belirli yöntemlerle çapını büyüterek evrenselleştirmek mümkündür. Bu kartopunun yuvarlanarak çığ haline dönüşmesine benzetilebilir.

4.3.NEDEN-ÇÜNKÜ İLİŞKİSİ

Eğer bir bilgi size aktarılmış ve siz o bilgiyi aklınızda tutarak, size yöneltilen herhangi bir soruya o bilgiyi kullanarak cevap veriyorsanız, o bilginin taşıyıcısı olursunuz. O bilgi size ait değildir. Soran, sorgulayan, irdeleyen ve elde ettiği bulguları yorumlayabilen, uygulayabilen bireyler edindikleri bilginin gerçek sahipleridir. Elde ettikleri bilgiden ilham alarak yeni ufuklara sağlam ve kalıcı yolculuklar yaparak bilime ve insanlığa katkıda bulunabilirler.

Eğitimin her aşamasında ve her türünde "Neden, niçin, nasıl" sorularının önemi büyüktür. Neden, sorusuna karşılık kurulacak cümle "çünkü" ile başlar. İşte bu noktada kurulacak olan cümle aslında eğitimin kilometre taşıdır. Çünkü ile başlayan cümle, soruyu soran kimse tarafından kolay anlaşılabilir, kabul edilebilir ve kavranabilir bir cümle ise eğitim tam anlamıyla doyurucu bir şekilde verilmiş olur. Aksi takdirde sadece bilgi transferi sağlanır. Bu durum bir süre sonra unutulmaya yüz tutar ve beyin bilgi çöplüğüne dönüşür. Öğrenmeyi öğrenmenin temelinde "neden-çünkü" ilişkisi yatar. Bu ilişkiyi güçlendirmek ve canlı tutmak öğrenmeyi de güçlendirir ve canlı tutar.

4.4.SORU ÇÖZMEK Mİ, SORUYU ÇÖZMEK Mİ?

Geleneksel eğitimin belki de en önemli kısır döngüsü, eğitim alan bireyleri konuyla ilgili çok sayıda soru çözmeye yöneltmektir. Bu durum belki beyin egzersizi açısından verimli olabilir. Ancak çok sayıda soru çözmek verilen eğitimi yeterince kavramak anlamına gelmiyor. Bunun

yerine sayıca az da olsa soruyu çözmek, anlama ve kavrama noktasında uzmanlaşmayı, beraberinde başarıyı daha da kolaylaştıracaktır.

4.5.MATEMATİKTE BAŞARISIZLIĞIN İRDELENMESİ

Geleneksel eğitime verilebilecek en iyi örnek matematik alanında verilen eğitimdir. Dededen toruna yüzyıllarca değişmeyen bir anlatım söz konusudur. Buna rağmen dede de, torunu da matematik alanında başarıyı gerçek anlamda yakalayamamıştır. Öyleyse bu eğitimin kendinde ya da sunumunda bir sorun vardır. Konuyla ilgili olarak uzmanların sayısız çalışmaları mevcuttur. Dünya genelinde yüzyıllarca sorulan en yaygın soru: "Matematik günlük hayatta ne işime yarar?" sorusudur. Biz bu çalışmada yüzyıllarca sorulan aynı sorunun yanıtını aramak yerine, eğitim alan bireyleri bu soruya iten nedenlerden birkaçını sunmaya çalışacağız.

Matematik, kimya ve fizik birer bilim dalıdır. Teknolojinin temelini oluşturan bu bilim dalları bir arada, birbiriyle uyumlu çalıştıklarında ortaya çıkan ürün, bilim ve insanlık adına yeni teknolojilerin doğmasına ya da gelişmesine imkân verir. Ancak bu bilim dallarının birbiriyle çelişmesi veya çelişki içeren sunum yöntemi ile bireylerin bu bilim dallarından soğumasına neden olur. Çarpıcı bir örnek vermek gerekirse: Bir sınıfta sırasıyla matematik, kimya ve fizik eğitimi verildiğini düşünelim.

Matematik öğretmeni yutan elemen konusunu anlatırken; "Herhangi bir sayı sıfır ile çarpıldığında sonuç daima sıfır olur. Çünkü sıfır yutan elemandır" şeklinde bir ifade kullansın. Bir sonraki derste kimya öğretmenin kimyanın temel kanunlarını anlatırken; "Kimyanın bir numaralı kanunu, madde yoktan var edilemez, var olan bir madde yok edilemez. Çünkü madde hal değiştirir" ifadesini kullansın. Son olarak fizik öğretmeni sürtünme dersini anlatırken; "Fizikte sıfır sürtünmeden söz edilemez" ifadesi ile üç bilim dalı arasında ciddi bir çelişki durumunu eğitim alan bireylere sunmuş olsunlar. Burada matematiğin diğer iki bilim dalıyla çelişmesi belki de ilk kopmalardan birini sağlamış olacaktır.

Oysa sıfırın sayı doğrusunda başlangıç noktası olduğunu, çarpma işlemini anlatırken:

3x1 = 3 ; 1 + 1 + 1 = 3

3x2 = 6 ; 2 + 2 + 2 = 6

3x0 = 0; 0 + 0 + 0 = 0

Şeklinde bir sunum yapsa, sıfırın yutan eleman olmadığını, yokluğun katının yine yokluk olduğunu vurgulamış olsa, söz konusu üç bilim dalı birbirini destekler ve eğitim alan bireyin çelişkiler yumağına düşmesini önleyecektir. Matematik eğitiminin temeli, matematiksel düşünceyi oluşturmak üzerine kurulmalıdır. O zaman, matematiğin hayatın içinde ve alacağımız bütün kararların muhakemesinde varlığını koruduğunu görmek mümkündür. Özellikle geleceğin teknoloji ile bütünleşmiş bir yaşam modelini uygulayacak olan insanoğlunun bu alanda en çok ihtiyacı olan bilim dalı matematiğin kendisi olacaktır. Belki

de, matematik konusundaki en yaygın soru kendiliğinden cevabını bulmuş olacak, gelecek nesillerin matematiğe ilgi ve becerisi bugünle kıyaslanamayacak kadar artacaktır.

5.DEĞERLENDİRME VE SINAV

Tüm eğitim dallarında bilgi aktarımı ve sonrasında ölçme, değerlendirme ve sınav bölümü vardır. Geribildirim için kullanılan yöntemler, eğitimin belki de en önemli kısmını oluşturmaktadır. Bu noktada eğitim alan bireylere aktarılan bilgiler, çeşitli ölçme-değerlendirme yöntemleriyle kontrol edilir. Aktarılan bilgiyi bir şekliyle aklında tutarak kendisine yöneltilen sorulara yanıt veren bireylerin başarı sıralamasını yapmak belki geleneksel eğitimin vazgeçilmez bir yoludur. Ancak burada dikkat çekmek istediğimiz husus; aktarılan bilgiler ışığında, eğitim alan bireylerin konu hakkında en anlamlı soruyu yöneltebilen bireylerin daha başarılı sayılmasıdır. Çünkü sorulan sorulara yanıt verebilmek en makul yaklaşımla konuyu iyi çalışmayı gerektirir. Ancak konu hakkında soru sorabilme yeteneği, konuyu tamamıyla kavradığının bir göstergesidir. O halde en iyi notu en iyi soruyu yönelten hak etmiş olmalıdır.

6.SONUÇ

Eğitimin temel amacı, bilgi ve beceri transferinin maksimum seviyede aktarılması sonucu, alanında uzmanlaşmış bireyler yetiştirmektir. Bunun için kendini sürekli güncelleyen bir süreç söz konusudur. Ancak özellikle Türkiye gibi gelişmekte olan ülkelerde eğitimin bilgi yönünden çok, müfredat ve eğitim sistemi sürekli yenilenme ve güncellenme sürecini yaşamaktadır. Bu durum belirsizlik doğurduğundan eğitimde başarı sağlamak zorlaşmış, kendi dilinde aldığı eğitimi dahi yeterince başaramayan bireyler okullardan diploma adı altında sadece kâğıt niteliğinde belgeler almaya başlamışlardır. Gardner, öğrenmenin, ölçülebilenlerin ötesinde de gerçekleşebileceğini ortaya koyanlardan biridir. Okullarda, çocukların zihinsel kapasitelerini geliştirecek bir program geliştirilmeli ve öğretim yöntemleri uygulanmalıdır. Bireyin öğrenmesi ve düşünmesi, fiziksel ve sosyal içerikte yer aldığına göre, öğrenciler özgün bir ortamda kendi anlamalarını inşa eden aktif öğrenenler olarak dikkate alınmalıdır. Eğitimciler, ezberleme dışında öğretmenin farklı yolları olduğunu fark etmek zorundadırlar. Anlamak için öğretmek, karar vermeyi öğretmek, problem çözmeyi öğretmek, bir parçayı bütüne bağlamayı öğretmek, kavramdan kavramı öğretmek, kısaca öğrenmeyi öğretmek dikkate alınmalıdır. Bu süreçlerin hepsinde kritik düşünme gereklidir. Bu süreçlerin hepsini öğrenci geliştirebilir, iyileştirebilir.[1]

Referans

[1]   B. Ilgın BAŞARAN, Ege Eğitim Dergisi 2004 (5): 7-15, Etkili Öğrenme Ve Çoklu Zekâ Kuramı: Bir İnceleme

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

COVID-19 SÜRECİNDE İSTİSMAR MAĞDURU ÇOCUKLAR

Cengiz TOPDEMİR
Awarded Mathematician
Canan TOPDEMİR
Expert Sociologist

Özet

Dünya Sağlık Örgütü (WHO 2006)' nün vurgu yaptığı çocuk istismarı yapılan kötü muamelenin dört özel biçimini anlatmak için dünya çapında kullanılan bir terimdir. Çocuğa kötü muamelenin fiziksel, cinsel, duygusal istismar ve ihmal olmak üzere dört farklı boyutuna tanım getirmiştir. Çocuğun gelişiminde olumsuz etki yaratabilecek her türlü kasti ya da bilinçsiz tutum ve davranış istismar kavramı çerçevesinde ele alınabilir. İstismar türleri incelendiğinde cinsel istismar olgularında gerek çocuk ve gerekse aile açısından büyük travmalar ve belki de kapanmayacak derin izler bırakabildiği için acil müdahale gerektiren durumlardır. Birleşmiş Milletler Çocuk Hakları Sözleşmesinin 34.maddesinde ve "Çocukların Cinsel Sömürü ve Cinsel İstismara Karşı Korunmasına İlişkin Avrupa Konseyi Sözleşmesi" diğer adı "Lanzorete Sözleşmesi" nde çocukların cinsel istismardan korunması için her düzeyde alınması gereken önlemler yer almaktadır. Lanzorete Komitesi Başkanı George Nikolaidis ve Başkan Yardımcısı Christel De Craimda Covid-19 salgını döneminde çocukları cinsel sömürüye ve cinsel istismara karşı korunmalarına yönelik tedbirlerin güçlendirilmesine ilişkin bir bildiri yayınlamıştır. Bu bildiride, COVID-19 salgınıyla mücadele ederken, çocuklara yönelik şiddetin, milyonlarca mağdur yaratan başka bir salgın olduğunu unutmaması gerektiğine ve ikisiyle de birlikte mücadele edilmesinin gerekliliğine dikkat çekmiştir. Ülkemizde de bu anlamda çocuk ihmal ve istismarı olguları farklı disiplin ve meslek uzmanlarını ilgilendirmektedir. Bu araştırma COVID-19 pandemi sürecinde çocuğa karşı şiddetin, istismar olgularının ve ensestin artabileceği hususunda çocuk istismarı alanında çalışan meslek elemanlarının görüşleri ele alınmıştır. Bu çalışmada pandemi sürecinde ve sonrasında çocukların istismar olgularının artabileceğinin önemine ve çocukların tepkilerinin nasıl karşılanması gerektiğine yer verilmiştir. Belirttiğimiz konular doğrultusunda eğitimin yüz yüze verilmeye başlanması ile birlikte çocukların öğretmenlerine ve ailelere tavsiyeler verilmiştir.

Çocuk açısından cinsel sömürü ve istismar da dahil artan şiddet karşısında savunmasızlıkla sonuçlanabileceğine vurgu yapılmış ve taraf devletler sözleşme yükümlülüklerine uymaya davet edilmiştir.

Anahtar Sözcük: Çocuk İstismarı, Çocuk Şiddeti, COVID-19

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

ABUSE VICTIMED CHILDREN IN THE COVID-19 PROCESS

Abstract

Child abuse, emphasized by the World Health Organization (WHO 2006), is a term used worldwide to describe four specific forms of maltreatment. It has defined four different dimensions of child maltreatment: physical, sexual, emotional abuse and neglect. Any deliberate or unconscious attitude and behavior that may have a negative impact on the development of the child can be considered within the framework of the concept of abuse. When the types of abuse are examined, sexual abuse cases require urgent intervention because they can leave great traumas for both the child and the family, and perhaps deep traces that will not be covered. The 34th article of the United Nations Convention on the Rights of the Child and the "Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse", also known as the "Criminal Convention", contain measures to be taken at all levels to protect children from sexual abuse. President of the Lanzorete Committee George Nikolaidis and Vice President Christel De Craimda issued a statement on strengthening measures to protect children against sexual exploitation and sexual abuse during the Covid-19 outbreak. In this statement, while tackling the COVID-19 pandemic, we should not forget that violence against children is another pandemic that has created millions of victims and that both should be tackled together. In our country, in this sense, cases of child neglect and abuse concern experts from different disciplines and professions. In this study, the opinions of professionals working in the field of child abuse were discussed regarding the increase in violence against children, cases of abuse and incest during the COVID-19 pandemic process. In this study, the importance of child abuse cases during and after the pandemic process and how the reactions of children should be met were discussed. With the introduction of face-to-face training in line with the issues we mentioned, advice was given to the children's teachers and families.

Emphasis was placed on the child being vulnerable to increased violence, including sexual exploitation and abuse, and states parties were invited to comply with their contractual obligations.

Key Word: Child Abuse, COVID-19

2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Molecular, Biochemical and Functional Analysis of Kinesin LmxM.29.350 in *Leishmania mexicana*

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Abstract

Leishmaniasis is a vector-borne disease that is caused by several species of the obligate intra-cellular protozoan parasite *Leishmania*. The flagellated protist *Leishmania* is one of the model organisms to study flagellar assembly. Here, we used *L. mexicana* as a model to investigate flagellar kinesin motor proteins. Kinesins are a large superfamily (KIFs). More than 15 kinesin families were classified by phylogenetic analysis Kinesins are motor proteins, have been identified in a wide diversity of eukaryotes, from protists to mammals. The kinetoplastids' genome sequences have also shown the presence of a large number of kinesins. The current study presents characterise a novel *L.mexicana* kinesin LmxM29.3.050, thought to be associated with flagellum formation. It was found express in both the amastigote and promastigote life stages. In this study we assigned this protein as a kinesin homologue to the unknown or orphan kinesins superfamily. The biochemical analysis showed the MAP kinase homologue LmxMPK3 can phosphorylate full length of LmxKin29 at serine 554. Localisation studies using GFP-tagged LmxKin29 revealed that it is predominantly found in between the nucleus and the flagellar pocket, while in dividing cells LmxKin29 was found at the anterior and posterior ends of the cells. Hence, LmxKin29 might play a role in cytokinesis. Double allele deletion was successfully generated. Morphological analysis of promastigotes with LmxKin29 tagged with GFP displayed no obvious phenotypic differences comparing the mutants with wild type cells.

Keyword: Kinesin, kinetoplast Kinesin, kinetoplast MAP kinase, phosphoprotein, Kinesin function, intercellular transport. Motor protein

1. Introduction

Kinesins constitute a superfamily of molecular motor proteins that convert the energy from ATP hydrolysis into mechanical work to transport a wide variety of cargo along microtubules which essential for diver cellular processes(1, 2). For instance, intracellular transport vesicles, organelles, chromosomes, and cell division (3, 4) . Intracellular transport is essential and highly regulated for morphogenesis and functioning of the cell (5). Biological functions in kinesins also play an important role in cell division by regulating the mitotic spindle filament formation polymerising and depolymerising spindle microtubules, attachment and movement chromosomes, antiparallel spindle movements during mitosis and meiosis (6, 7). Disruption of the normal function of these proteins leads to a group of different diseases dyskinesia diseases PCD which distinct as a group of different diseases like chronic upper and lower

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respiratory tract disease and left-right asymmetry defects (8, 9). Kinesin have a significance role as therapeutic targets regarding to the molecular basis of their function(10). The kinesins are considered as the largest group of conserved motors compared with other motor proteins (dyneins and myosins), because they are found in all eukaryotes (1, 11). Several studies confirmed that KIFs possess a highly conserved globular motor domain of ~340 amino acids, which involves an ATP-binding sequence and a microtubule-binding sequence (3, 12, 13). Essentially, a kinesin can be classified based on the position of the motor domain within the molecule. N-kinesins have a motor domain in the NH2-terminal region, M-kinesins have one in the middle region, and C-kinesins have it in the COOH-terminal region of the protein(7). Unlike the motor domain, the tail domains of most kinesins are highly divergent (2, 13, 14). In 2004, Lawrence with other researchers. published a standardised kinesin nomenclature, defining 14 families (kinesin-1–14), as well as some 'orphan' kinesins that could not be put in any of the 14 families (15). The kinesin superfamily of motor proteins is now subdivided into 17 families, some of the ungrouped kinesins. The specific existence of some families in a subset of species capable to form cilia and flagella indicates shared biological functions in relation to these structures (1). The kinetoplastids' genome sequences have also shown the presence of a large number of kinesin motor proteins (41 kinesin proteins *in T. brucei.* (16). Several studies have suggested that kinesin function is regulated by mitogen-activated protein (MAP) kinases which can be involved in several steps including the selection of motors, loading of cargo, control of directionality or movement towards correct locations, velocity and finally, unloading and release of the cargo at its destination(2, 4, 17-19). Very little is known about the kinesin of *L. mexicana* the causative agent of cutaneous leishmaniasis. According to the transcriptomes study of *L. mexicana* promastigotes reported by (20) that LmxM.29.0350 has been found in all *L. mexicana* life stages, however amastigotes in vitro infected macrophages showed the highest level of transcriptomic mRNA LmxKin29 compared with other stages (20)

The current study we report the first attempt to characterise LmxM.29.0350 (LmxKin29). In vivo phosphoproteome analysis has been used on *L. mexicana* promastigotes and amastigotes revealed that potential phosphorylation sites occurred on serine 548, serine 551 and serine 554 in the LmxKin29 peptide (21). A peptide derived from the kinesin LmxKin29 was shown to be phosphorylated by activated LmxMPK3 (22). The *Leishmania* MAP kinase LmxMPK3, which has been shown to be important for flagellum length regulation (23). This prompted us to clone the gene for full length LmxKin29 defining the starting point of this project. The full length sequence of LmxKin29 was identified with a tblastn identity search of TriTrypDB (kinetoplast genomic resources web site).

2. Material and Methods

2.2 Expression and purification LmxKin29 recombinant protein

LmxKin29 was expressed as a glutathione S-transferase (GST) fusion protein. The protein was expressed from a pGEX vector producing a recombinant fusion protein with the GST-tag (26 kDa) located at the N-terminus followed by LmxKin29. The use of GST as a fusion tag is an appropriate method because in many cases the fusion protein can be purified as a soluble protein rather than from inclusion bodies. We have used a modified pGEX-KGSP (24) which lacks a serine followed by proline close to the fusion site. The only other S/TP motif in the GST-tag is located N-terminally to the thrombin cleavage site and thus could be removed together with thrombin if required.

2.3 Kinase assay

Kinase assay was subjected in 1.5mL tubes by adding the following materials; the substrate protein LmxKin29 protein was left on the beads centrifuged for 2 minutes, $750 \times g$ at 4°C and the supernatant discarded (the volume of the beads was not taken into account); 2-5 µL purified protein kinase LmxMPK3 (approximately 2-5 µg/), 5 µL 10 × kinase buffer; 2.5 µL of 500 cpm/pmol [γ-32P] ATP and ddH2O were added to a total (volume of 50 µL). All reaction tubes were placed in an end-over end rotator and incubated at 27°C for one hour. 12.5 µL of 5 × SSB (+ 50 mM DTT) were added, the sample heated in a heat block at 95°C for 10 minutes and afterward resolved on SDS-PAGE. The gel was Coomassie stained, dried and exposed to X-ray films.

2.4 Culturing of *L. mexicana* promastigotes

Promastigotes were grown in complete SDM medium (25) and at 27°C. Antibiotics were added, if required, at the following concentrations: Blasticidin S deaminase (BSD). (5 µg/mL), phleomycin binding protein or belocin (Phleo) (5 µg/mL), hygromycin B (20 µg/mL). A fresh culture was inoculated every 4-6 days diluting the old culture 1:1,000 into 10 mL fresh medium.

2.5 LmxKin29 deletion constructs

Two independent LmxKin29 null mutants were obtained by replacing both alleles of LmxKin29 with different resistance marker genes conferring resistance to Blasticidin (*Bla*) and phleomycin (*Phleo*). In order to generate the deletion construct of *Lmxkin29*. Initially, the *LmxKin29* upstream region (679 bp) and downstream region (627 bp) were amplified by using PCR technique using genomic DNA from *L.mexicana*. Upstream sequence which functions as a targeting sequence located in front of the start codon of the LmxKin29 gene forward. While the downstream region is the sequence just after the stop codon of LmxKin29 were designed with the restriction sites as shown in below.

LmxKin29upstream Forward:-
**5`**GATATCCGCGCACCCATAGCCACATGTGTGCATCTCTCC-3`
LmxKin29upstream Reverse:-
5`TTGTCGTCTCACTTCATCGCCATGGCCTAGGAGATCTCGAG-3`.
LmxKin29dsownstream Forward:-
5`CCTAGGGCTAGCTTGTTCGGACACTGCGATATGCCGGACC-3`
LmxKin29dsownstream Revers; -
5`CCATGACCATCTGCGAGTCACGTTGTGGTGATATCTCGAG-3

The two PCR fragments ware separated on a 0.8% agarose gel and cloned into pGEM®-T Easy (Promega) plasmid resulting in the two constructs pGEMKin29upi and pGEMKin29dsi.They were cleaved with AvrII and NdeI resulting in two fragments, 706 bp and 2990 bp for pGEMKin29up and 43 bp and 3601 bp for pGEMKin29dsi. To generate pGEMupkin29ds the 706 bp and dephosphorylated 3601 bp fragments were isolated, ligated and transformed into *E. coli* DH5α. The derived plasmid was confirmed by cleavage with NcoI, NheI and AvrII. The derived plasmid was confirmed by sequence. pGEMupkin29ds was cleaved with EcoRV to remove the pGEMT easy plasmid. The purified 1279 bp fragment contained the upstream and downstream regions of LmxKin29. This fragment was inserted into pBSKII(+) which had been cut before with the same restriction enzyme to produce pBupKin29ds. Resistance marker genes were introduced into pBupKin29ds, two antibiotic resistance genes were chosen coding for: Phleo, and BSD.

The resistance marker gene for *phleo* was isolated from a plasmid pCR2.1phleo containing the gene conferring phleomycin resistance by cleaving it with NcoI and AvrII (AvrII overhangs are compatible to those generated by NheI which was used to cut the vector). The phleomycin fragment was ligated with pBupKin29ds to produce pBKin29upPhleods. The Blasticidin S gene was isolated from pEX-A2-BLA-ALA (Unpublished Wiese). The construct was cleaved with NcoI and NheI, then ligated with r-pBupKin29ds. Finally, the two new constructs pBKin29upBlads and pBKin29upPhleods were confirmed.

2.6 Fluorescence microscopy with live cell imaging Cooling slide preparation

50-500 μL of a log-phase *Leishmania* culture were centrifuged at 5,600 × g for 2 min, cells were washed with 1 mL ice-cold 1 × PBS and subsequently resuspended in 200 μL ice-cold 1 × PBS. The tube was placed on ice for one hour. 4 µL of the live parasite suspension was examined using fluorescence microscopy. GFP fluorescence was observed with the FITC filter (λ=540 nm) and pictures were typically taken with an exposure time of 100 – 200 ms, depending on the intensity of the protein.

2.7 Microscopy techniques and flagellar length determination

Light microscopic examination is a simple technique to determine flagellar length. 50 μL – 100 μL of log- phase *Leishmania* promastigote culture were centrifuged at 5,600 × g for 2 min, the supernatant was removed and the pellet resuspended in 50 μL fixation solution. 4 μL of the suspension was used on a slide and it covered with a cover slip without trapping air bubbles. Cells were examined under light microscope with magnification (40×1000), 5-15

fields view were captured by GXCAM camera, and GXCapture Software was used. Flagellar lengths were measured for 200 cells of each clone, from the cell surface to the flagellar tip exactly tracing the flagellum by using the freehand tool of the Image J software Version 1.51p.

2.8 Expression constructs for complementation of LmxKin29

Here, LmxKin29 fused to GFP was expressed in null mutant promastigotes. Two strategies were used to generate the add-back clones. Initially, episomal complementation the null mutants were transfected with a plasmid containing LmxKin29 fused with GFP. Plasmids can independently replicate in *Leishmania* and replication occurs even in the absence of any leishmanial sequence (26). pTH6nGFPc and pTH6cGFPn (27) were used to tag LmxKin29 with GFP either at the N-terminus or C-terminus of the protein. The protein was expressed in the two null mutant clones by introducing pTHGFPLmxKin29 where GFP is fused to the N-terminus of LmxKin29 and pTHLmxKin29GFP with a C-terminal fusion. Both transfections were successful and two clones were selected from each transfection and grown in culture with hygromycin B (20 μg/mL). Secondly, complementation of LmxKin29 by reintegration into its genomic DNA locus, a DNA cassette had to be constructed which contained the puromycin N-acetyltransferase gene (*PAC*) for selection of recombinant clones besides the two flanking regions and the ORF of LmxKin29. The fragment cloned into the BupKin29ds knockout construct to produce pBupGFPKin29ds and pBupKin29GFPds. To prepare the fragments for electroporation the plasmids pBupGFPKin29 and pBupKin29GFP were cleaved with EcoRV to isolate the 5885 bp and 5880 bp, respectively, under sterile conditions.

2.9 Transfection of *L. mexicana* by Electroporation (Amaxa)

Transfections were performed using a human T-cell Amaxa nucleofector kit following manufacturer's instructions. A dense cell culture of 4×10^7 cells was used. Promastigotes were harvested by centrifugation for 15 min at 2,500 × g at 4°C. The supernatant was removed by careful pipetting and the pellet resuspended in 100 μL supplemented electroporation buffer containing 1–5 μg of DNA fragment or plasmid. The cell suspension was transferred to a pre-cooled electroporation cuvette. The solution was then electroporated, using the programme V-033 on an Amaxa Nucleofector, followed by incubation on ice for 10 min. The solution was then transferred into 10 mL SDM medium and incubated for 24h at 27°C. Following the overnight culture, two dilutions were prepared. (1:2) and (1:40). The relevant antibiotics were added (5 μg/mL phleomycin, 20 μg/mL hygromycin, blasticidin 5 μg/mL, and 40 μM puromycin) and the solution was distributed across a 96-well plate, using 200 μL per well. The plates were sealed with parafilm and incubated at 27°C for 10-14 days. Wells where significant growth occurred were identified using an inverted microscope and the content of these wells was transferred into 2 mL SDM and expanded to 10 mL upon successful growth.

2.11 Determination of IgG1 and IgG2a in mouse sera

Serum IgG1 and IgG2a antibody end point titers against soluble *L. mexicana* promastigote antigenwere determined by ELISA. 20 mL of stationary phase promastigote Leishmania culture was sedimented by centrifugation at 3,000 × g for 10 min at 4°C, washed in PBS and the cell pellet resuspended in 10 mL PBS followed by freezing in liquid nitrogen for 3 minutes. The frozen cell suspension was defrosted in a sonication water bath for 3 minutes at 60°C before being passed 15 times through a 23g needle. The freeze/thaw/shear process was repeated six times followed by five repeats of the freeze/thaw process. The lysate was centrifuged at 2,000 × g for 10 min at 4°C and the protein concentration determined in the supernatant. Briefly, a 96 well ELISA plate was coated with 200 μL L. mexicana soluble antigen solution (1 μg/mL in PBS pH 9.0) overnight at 4°C. The plates were washed three times with PBST, blocked with blocking buffer (2.5% (w/v) skimmed milk powder, 0.05% (v/v) Tween 20 in 1× PBS) for 1 hour at 37°C and washed three times with PBST followed by incubation with seven serial dilutions (1:500 – 1:x) of 100 μL of serum samples for 1 hour. After four washes with PBST the plate was incubated with 100 μL/well of anti-IgG1 (1:5,000) or anti-IgG2a (1:25,000) in PBS for 1 hour. Following another four washes 100 μL/well of substrate (TMB) were added and the reaction stopped after 20-30 minutes by adding 50 μL/well of 10% aqueous sulphuric acid. The absorbance was measured at 450 nm using a plate reader (Softmax Molecular Device. California USA) and the mean endpoint ± standard error (SE) were determined.

3. Results and discussion

Very little is known about the putative kinesin LmxM.29.0350 of *L. mexicana*. mRNA of LmxM.29.0350 has been found in all *L. mexicana* life stages, however amastigotes in in vitro infected macrophages showed the highest level compared promastigotes and axenic amastigotes (20). The current study is the first attempt to characterise LmxKin29, functional analysis, to confirm that MAP kinase LmMAPK3 that phosphorylates LmxKin29, and to identify the phosphorylation site used by this kinase. LmxKin29 was thought to be a flagellar kinesin because LmxMPK3 a MAP kinase involved in flagellum length regulation can phosphorylate a peptide derived from LmxKin29 (22).

3.1 Characterisation the kinesin LmxKin29 (LmxM.29.0350)

The full-length sequence of LmxKin29 was identified with a tblastn identity search of TriTrypDB. Using the sequence of the phosphorylated peptide to search the database resulted in 100% identity with a putative kinesin located on chromosome 29 in *L. mexicana* MHOM/GT/2001/U1103, which was therefore designated LmxKin29 (Fig.1A). LmxM.29.0350 open reading frame (ORF) comprises 1,830 bp encoding a protein of 610 amino acids with a molecular mass of 68.3 kDa (Fig.1E) and an isoelectric point of 8.17 (28). The primary structure contains the typical kinesin three domains. N-terminus, coiled-coil sequence (neck) and the C-terminus (tail) (The Universal Protein Resource UniProt data base) (Fig.1B). Determination of potential C-terminal phosphorylation sites of LmxKin29. The full length sequence of LmxKin29 shows that the kinesin contains four serine residues

followed by a proline and one threonine residue followed by a proline constituting potential MAP kinase phosphorylation sites (Fig. 1A). Serine 333 is part of the motor domain. LmxKin29 is a homologue to the putative kinesin (Tb927.6.1770) which has been identified by (29) as an orphan kinesin. According to TriTrypDB the predicted function of Lmj.30.0350 and Tb927.6.1770 is a motor-driven movement along microtubules via polymerisation or depolymerisation of microtubules raising the possibility that LmxKin29 may have a similar cellular function.

3.2 LmxKin29 superfamily

Kinesin superfamily is the first step to study a new kinesin by using BLAST database search (15). Depend on the a phylogenetic tree have been generated to organise 486 kinesin-like sequences from 19 eukaryotes (1), we assigned LmxM.29.0350 as a kinesin homologue of LmjF.30.0350 which belongs to the unknown or orphan family of kinesins as displayed in (Fig.1C). Sequence alignment of LmxKin29 homologues in *Leishmania* shows that the phosphorylation sites S551 and S554 are conserved in all of them (Fig1D). Also, LmxKin29 shows high levels of amino acid identity with LmxKin29 homologues in other *Leishmania* species such as, 86% with the LTRL590_300009000 *L. tropica* kinesin, 87% with the LdBPK_30.0350 *L. donovani* kinesin, 87% with the LinJ.30.0350 *L. infantum* kinesin, with LtaP30.0410 *L. tarentolae* 78% and LbrM.30.0390 *L. braziliensis* 87 % with conserved of serines 551 and 554 (Fig1.D). The closest human kinesins showed low similarities to LmxKin29, e.g. KIF11 shows 36% amino acid sequence identity. KIF3A shows 38% identity (152/397) and 53% positives (211/397). Contrary to expectations, LmxKin29 did not show significant sequence identity with the two types of flagellar kinesins-2, the flagellar heterotrimeric Kinesin-II and the homodimeric OSM3 kinesin in different organisms. However, LmxKin29 might be a kinesin specific for *L. mexicana* and hence functional analysis was pursued in this project. The low percentage of identical amino acids seen in most protein kinesins of unicellular parasites observed in phylogenetic studies suggests that these proteins are potential targets for specific inhibitors, which can developed into new drugs against the pathogen.

3.3 Purification of recombinant LmxKin29 *Leishmania* proteins

In order determine the potential phosphorylation sites, full- length GST-fusion protein of wild type LmxKin29 and four LmxKin29 mutants constructs had been generated by cloning and site-specific mutagenesis into pGEX-KGSP,by replacing the serine by either alanine or aspartate (aspartate residue, thus mimicking a phosphorylation). pGEX.KGSPKin29, pGEX-KGSPKin29A & pGEX-KGSPKin29SD (SD) replacing the 551 serine by either alanine or aspartatep GEX-KGSPKin29A2(S551A/S554A) replaced by alanine, pGEX-KGSPKin29A4 (four phosphorylation sites replaced by alanine; threonine 440 and serine 548, 551, 554) (Fig.3A). In addition, the activated MAP kinase LmxMPK3, was expresed. The hypothesis to be tested was, that only LmxKin29WT and not any of the mutants in the phosphorylation site will be phosphorylated by activated LmxMPK3 in an in vitro kinase assay using purified recombinant proteins.The recombinant LmxKin29 proteins (GST-LmxKin29WT, GST-LmxKin29SA, GST-LmxKin29SD, GST-LmxKin29A2, and GST-LmxKin29A4) were successfully expressed and their predicted sizes are 95.7 kDa (68.7 kDa LmxKin29 + 27.4

kDa GST) which matches to the size of the band on the gel (Fig. 2C). Additionally, there was a very faint double band probably corresponding to the GST-tag (27.4 kDa). The predicted size of His-LmxMPK3 is 49.7 kDa (43.7+ 6 kDa), and this agrees with the position of the band in line 4 of the Coomassie-stained gel (Fig.2C). The purified proteins were used in protein kinase assays in order to determine the ability of LmxMPK3 to phosphorylate LmxKin29 proteins. The four kinesins were subjected to kinase assays with activated LmxMPK3, the reactions was stopped by boiling in SDS sample buffer, proteins were separated on a 14% SDS-PAGE and stained by Coomassie (Fig.2 Da). His-LmxMPK3 with WT,GST-LmxKin29SA, SD A2,A4 in lanes 1, 2,3.4 and 5, respectively. (Fig.Db) displays an autoradiograph after 72 hours of five kinase assays. GST-LmxKin29 showed a strong phosphorylation signal with LmxMPK3. Surprisingly, the activated His-LmxMPK3 still phosphorylated the mutant proteins LmxKin29SA and LmxKin29SD. However the two mutants LmxKin29A2 and LmxKin29A4. GST-LmxKin29SA and GST-LmxKin29SD only lack serine 551 and can still be phosphorylated indicating the serine 551 is not the site used by His-LmxMPK3. GST-LmxKin29A2 carries two mutations in serine 551 and serine 554. The absence of a phosphorylation signal indicates that serine 554 is the phosphorylation site for LmxMPK3.

Fig. 1. Amino acid sequence of LmxKin29 and protein expresion.**A**, Sequence amino acids of LmxKin29 and putative MAP kinase phosphorylation sites are highlighted in red serine 548, serine 551 and serine 554 (previously found to be phosphorylated in promastigotes and axenic amastigotes in vivo)**,** motor domain of LmxKin29 is shown in blue.**B,** Graphical view shows the motor domain (14-355; blue box), coiled-coil (387-534; dark blue) and the tail

domain 534-610) (from UniPro data base). **C,** Phylogenetic tree of kinesin motor domains for about 400 non-redundant sequences from 19 different species including *L. major.* Orphan kinesins are enlarged in the right panel and the protein from *L. major* strain Friedlin LmjF.30.0360 corresponding to LmxM.29.0350 is highlighted (yellow box) (Wickstead et al., 2006). **D**, Partial amino acid sequence alignment of LmxKin29 from *L. mexicana* with the amino acid sequences of various kinesins. Ldon, LdBPK_300350.1.1 *Leishmania donovani* BPK282A1, kinesin, putative, length=610 aa; Linf, LinJ.30.0350 *Leishmania* infantum JPCM5, kinesin, putative, length=610 aa; Ltr, LTRL590_300009000.1 *Leishmania tropica* L590, kinesin, putative, length=610 aa; Lmj, LmjF.30.0350 *Leishmania major* strain Friedlin, kinesin, putative, length=607 aa; Lmex, LmxM.29.0350.1 *Leishmania mexicana* MHOM/GT/2001/U1103, kinesin, putative, length=610 aa; Ltar, LtaP30.0410 *Leishmania tarentolae* Parrot-TarII, kinesin, putative, length=615 aa; Cfa, CFAC1_260021700.1 Crithidia fasciculata strain Cf-Cl, kinesin, putative, length=620 aa; Lbr; LbrM.30.0390 *Leishmania braziliensis* MHOM/BR/75/M2904, kinesin, putative, length=607 aa. The asterisk (*) indicates a conserved amino acid in all homologues (Alignment was achieved by Clustal Omega). (https://www.ebi.ac.uk/Tools/msa/clustalo/). **E,** Purified recombinant GST-LmxKin29 on Coomassie-stained 14% SDS-PAGE. Lane 1, elution 1; lane 2, elution 2; lane 3, beads; M, marker in kDa

3.4 Final step to assign phosphorylation site

pGEXKSPS554A was successfully generated as a recombinanat LmxKi29 protein construct to produce the final version of mutant protein. Fig2 Ea. shows a compartive of the foure purified bands of four recombinant proteins of the GST-LmxKin29 (WT, SA, A2, S554A) on a Coomassie-stained 14% SDS-PAGE. Kinase assays(Fig. 2Eb) showed phosphorylation of LmxKin29WT and the mutant LmxKin29SA. No phosphorylation was found in LmxKin29A2 and LmxKin29S554A. According to the previous kinase assays, This result proves that serine554 is the phosphorylation site used by activated His-LmxMPK3. The *in vivo* phosphoproteome analysis on *L. mexicana* promastigotes and amastigotes which revealed that the potential phosphorylation sites are serine 551 and serine 554 in the LmxKin29 peptide (21). The mutant LmxKin29A2 (serine 551 and serine 554 replaced by alanine) was also not phosphorylated by LmxMPK3 excluding threonine 440 and serine 548 as phosphorylation sites used by LmxMPK3. This observations support the idea, that serine 440 and 548 are not the target phosphorylation sites leaving serine 554 as the probable phosphorylation site used by His-LmxMPK3. Hence, pGEX-KGSPKin29S554A was generated and tested. Indeed, LmxMPK3 did not phosphorylate GST-LmxKin29S554A confirming that serine 554 is the phosphorylation site used by activated LmxMPK3.

Overall, LmxMPK3 can phosphorylate LmxKin29 invitro and therefore most likely regulates its activity. However, the phosphoproteome (21) reveald that potential phosphorylation sites occurred on serine 551 and serine 554 in the LmxKin29 peptide invivo. It is possible that His-LmxMPK3 phosphorylates serine 554 first followed by phosphorylation of serine 551. Alternatively, serine 551 is phosphorylated by another kinase. Additionally, amino acid sequence alignments of LmxKin29 with its homologues in other species (**Error! Reference**

source not found.) revealed that serines 551 and 554 are conserved amino acids. They are likely major sites for LmxKin29 regulation by phosphorylation.
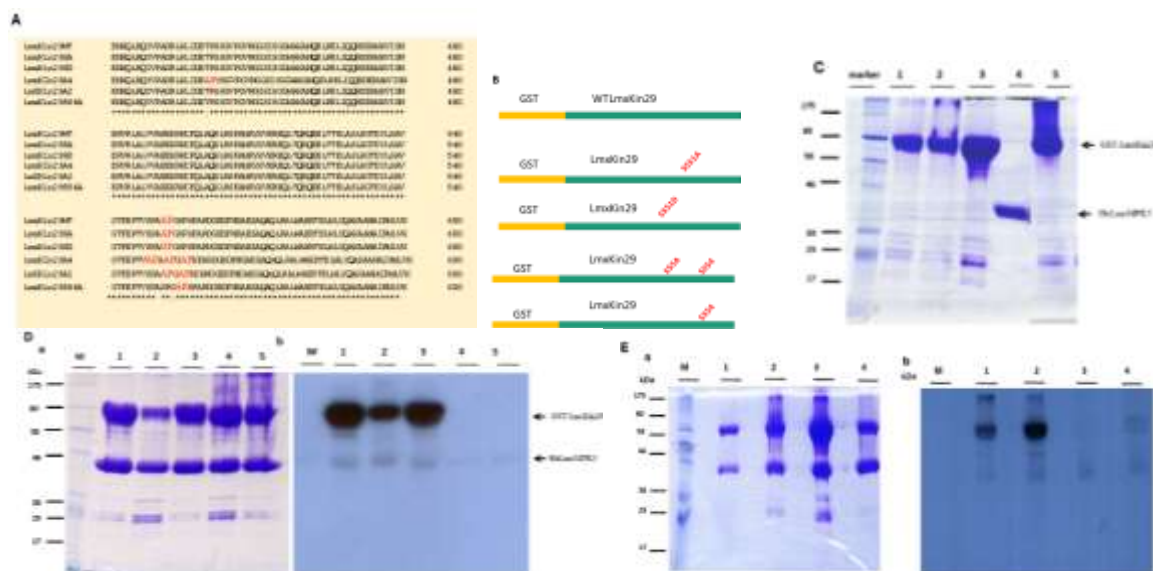

Fig. 2. Partial alignment of LmxKin29WT and mutants (SA, SD, A2, A4, 554A). A, LmxKin29SA, replacement of serine 551 with alanine (highlighted in red); LmxKin29SD, replacement of serine 551 with aspartic acid (highlighted in pink); LmxKin29A4, replacement of four residues serine 548, 551, 554, and threonine 440 with alanine (highlighted in blue); LmxKin29A2, replacement of two serine residues, serine 551 and 554 with alanine (highlighted in brown); LmxKin29S554A, replacement of serine 554 with alanine (highlighted in green). The alignment was achieved by https://www.ebi.ac.uk/Tools/msa/clustalo/. **B**, Graphical, view shows mutational replacement of five LmxKin29 mutants. **C**, Purified recombinant proteins of GST-LmxKin29 on Coomassie-stained 14%. SDS-PAGE. Lane 1, GST-LmxKin29 WT; lane 2, GST-LmxKin29SD; lane 3, GST-LmxKin29A4; lane 4, 25 µL of eluted His-LmxMPK3; lane 5, LmxKin29SA; M, marker in kDa. GST protein samples were prepared by using 70 µL suspension of protein with beads(7: 93 v/v) resuspended with 30 µL SDS loading dye and loaded 25 µL for each). **D**, Radiometric kinase assay of His-LmxMPK3 with GST-LmxKin29, a, Coomassie-stained 14% SDS-PAGE. B, Autoradiograph after 4 hours exposure. Lane 1, His-LmxMPK3 + GST-LmxKin29WT; lane 2, His-LmxMPK3 + GST-LmxKin29SA; lane 3, His-LmxMPK3 + GST-LmxKin29SD; lane 4, His-LmxMPK3 + GST-LmxKin29A4; 5, His-LmxMPK3 + GST-LmxKin29A2; M, marker in kDa. **E**. Radiometric kinase assay of His-LmxMPK3 with different GST-LmxKin29 proteins, **a.** Coomassie-stained 14% SDS-PA gel**, b,** autoradiograph after 24 hours of exposure. Lane 1, His-LmxMPK3 + GST-LmxKin29WT; lane 2, His-LmxMPK3 + GST-LmxKin29SA; lane 3, His-LmxMPK3 + GST-LmxKin29A2; lane 4, His-LmxMPK3 + GST-LmxKin29S554A; M, marker in kDa.

3.5 Generation of LmxKin29 single and double knockout clones (ΔLmxKin29-/+) (ΔLmxKin29-/-) and PCR confirmation.

The knockout cassettes were introduced into wild type *L. mexicana* promastigotes. 3×10^7 late log phase cells were transfected by two consecutive rounds of electroporation. First generate a single allele deletion mutant, ΔLmxKin29+/-, and secondly for a double allele deletion mutant, ΔLmxKin29-/-. Subsequently both electroporation cultures were left to grow for 15-20 days and positive clones were selected selectively by the two antibiotics Phleo and BSD.

To confirm the correct gene replacement in the double allele knockout (Fig. 3A) shows fifteen PCR reactions of the null mutant ΔLmxKin29-/-*Phleo*/*Bla*. A single band is visible for phleomycin (766 bp) in lane 9, single knockout, also in lanes 12 and 15 for two double knockout clones, A3 and D11, indicating correct integration of the *Phleo* gene. While the PCR in lane 5 shows, correct integration of the *Bla* gene with 937 bp in the single knockout ΔLmxKin29+/-, and lanes 11 and 14 show one band for the two double knockout clones A3 and D11. Lanes 1, 4, and 7 show an 860 bp DNA fragment derived from *LmxKin29* that is only present in the wild type and single allele knockout clones. Significantly, null mutants was generated. Several strategies have been successfully applied to investigate the function of LmxKn29 in more detail. Initially by morphological analysis of the LmxKin29 mutant clones comparing them with *L. mexicana* wild type. Secondly, pathogenesis analysis effect with LmxKin29 absence in *L.mexicana*.

3.6 Phenotype Analysis of the LmxKin29 null mutant

Surprisingly, the first microscopic examination of the promastigote culture revealed that no obvious changes could be detected in *ΔLmxKin29*-/- clones compared to wild type cell size and flagellum length and it was difficult to tell whether the large proportion of normal cells actually reflects cells lacking an abnormal phenotype. The morphological changes were analysed for *LmxKin29* mutants versus *L. mexicana* wild type promastigotes in logarithmic growth (Table1). The data were analysed using a two-tailed, non-paired student's t-test. The phenotype measurements showed a wide variety of results in body length and flagellum length. Therefore, a correlation test (Pearson correlation coefficient) analysis is used to test the variables between groups. The correlation coefficient, r, ranges from r <1 (Perfect negative or inverse correlation) to r>1 (Perfect correlation).

The (Fig.3D, E and F) displays measurements and statistical analyses of, cell body body width and flagellar length respectively of LmxKin29 mutants. As presented in (Fig. 3D) the body length analysis exhibited a significant increase in body length (p<0.001, t=3.484) compared between ΔLmxKin29+/-*Bla* and the wild type and the correlation test showed a significant r-value (r>0; r=0.1446, p=0.05). Compared to the wild type the single allele mutant Δ*LmxKin29*+/-Phleo D1 and the null mutant A3 displayed a significant decrease in body length (p<0.001, t=5.054) and (p<0.001, t=5.065), respectively. However, both analyses have a low correlation value of less than zero. Interestingly, the null mutant D11 showed no significant changes in body length compared to the body length of the wild type. These results are in line with the previous study by (30) which suggested that there is a wide range

of changes or a significant variation in body length in a wild type cell culture due to the various cell cycle stages present

Although the comparative analysis of the body width revealed a significant increase for all LmxKin29 mutants ($p<0.001$) versus the wild type, these results displayed no correlation ($r<0$) (Fig. 3E). That could be related to the timing of the measurements with regard to cell density, with regard to cell density, which had a different density(Table 1).

Flagellum length revealed a significant decrease for Δ*LmxKin29*+/-*Phleo* D1 compared to the wild type but no correlation between them ($r<0$) (Fig. 3F). The single allele Δ*LmxKin29*+/-*Bla* H5 and the null mutant A3 showed no significant difference in flagellum length (Fig. 3F). The double knockout D11 showed a significant increase in flagellum length ($p<0.05$, $t=2.209$) compared to the wild type, but the clones showed no correlation ($r<0$). It was observed that the growth of the flagella extends over multiple cell cycles, growing progressively longer with each cycle, until a certain length when it began to disassemble at the tip. The second possibility to obtain these results can be due to the different cell densities between the mutant clones and the wild type promastigotes (30). A study conducted by (16) found that a knockout of *TbKif13-2* where both copies of the gene were deleted resulted in no significant elongation of the flagellum and overexpression only slightly decreased flagellar length and the rate of growth of a new flagellum during cell division.

In summary, no morphological changes between cell lines in general. The variations in the three parameters determined in the morphological analysis is likely due to the slightly different culture densities and might represent cells in various stages of the cell cycle.

In conclusion, the morphological analysis for the knockout clones could not prove that LmxKin29 is involved in flagellar formation in promastigotes, which probably means that it has another function. Localisation of the protein in the cells could possibly help to inform about the role of LmxKin29 in the parasite. With no apparent function in the promastigote stage LmxKin29 might play a role in the mammalian amastigote stage justifying an *in vivo* investigation. Why did the loss of LmxKin29 not cause defects in flagellum length in spite of the biochemical analysis which proved that the kinase LmxMPK3 can phosphorylate LmxKin29 LmxKin29 might have another function or there might be other molecules present that may allow through functional redundancy that the morphology of the parasite is not changed in LmxKin29 null mutants (31). It is also possible that LmxMPK3 has additional functions to its role in flagellum length regulation.

Table 2. Cell density for wild type and LmxKin29 mutants at the time of measurements

Clone type	Density in cells ml⁻
Wild type	5.4×10^{7}
ΔBla+/- H5	3.5×10^{7}
ΔPhleo+/- D1	5.1×10^{7}
ΔLmxKin29-/- A3	3.6×10^{7}
ΔLmxKin29-/- D11	4.5×10^{7}
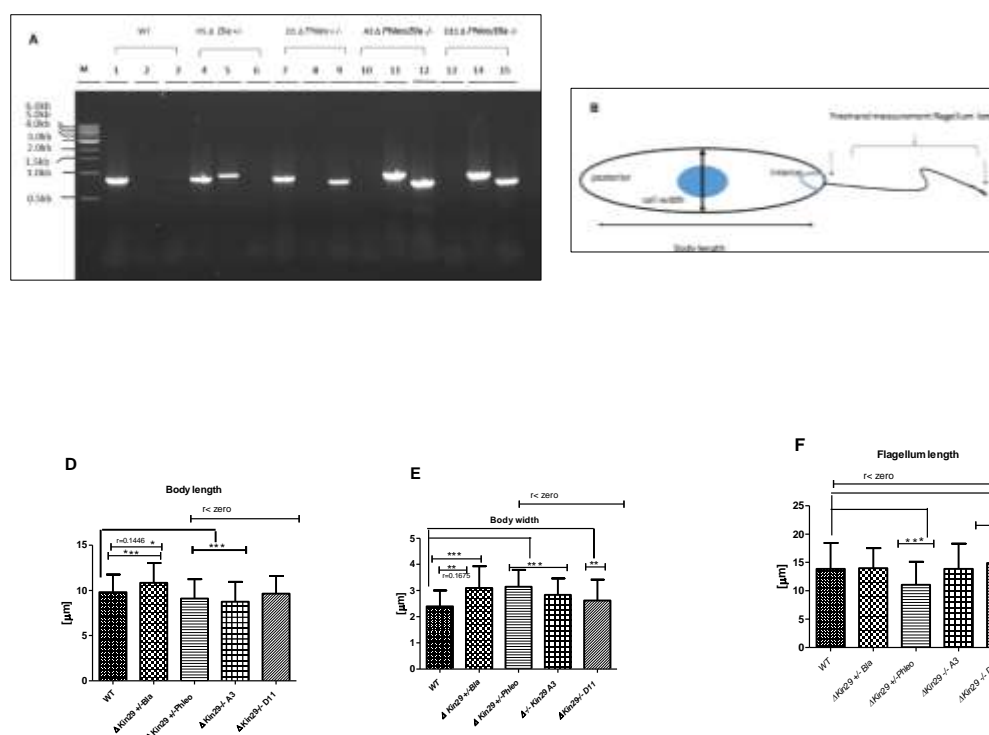
Fig. 3. Confirmation of LmxKin29 null mutants and basic *morphology analysis of transgenic L. mexicana*ΔLmxKin29-/-Phleo/Bla. **A**, Agarose gel of PCR and lanes 1, 4, and 7, 860 bp DNA fragment derived from *LmxKin29*; lanes 5, 11 and 14, 937 bp DNA fragment indicating correct integration of *Bla*; lanes 9, 12, and 15, 766 bp DNA fragment indicating correct integration of *phleo*. **B,** Cartoon showing the properties of each cell measured for

analysis; cell body length *flagellum l*ength and body width. **C,** Table 1 Cell density for wild type and LmxKin29 mutants at the time of measurements**. D,** Morphological analysis of deletion mutants of LmxKin29 (single and double allele) compared with *L. mexicana* wild type promastigotes. Means with standard errors of the means are displayed. **D,** cell body; **E,** cell body width. **F,** flagellum length. Stars indicate significant differences (p*< 0.05, p**< 0.01, p***<0.001) (Student's t-test and correlation test). Measurements of 200 random cells were taken using Image J.

3.7 Localisation of LmxKin29 null mutant

LmxKin29 fused to GFP was expressed in null mutant promastigotes. The protein was expressed in the two null mutant clones by introducing pTHGFPLmxKin29 where GFP is fused to the N-terminus of LmxKin29 and pTHLmxKin29GFP with a C-terminal fusion. Both transfections were successful and two clones were selected from each transfection and grown in culture with hygromycin B (20 μg/mL). Fluorescence microscopy of live or fixed transgenic *L. mexicana* promastigotes (addback LmxKin29GFP and GFPLmxKin29 clones exhibited a localisation of LmxKin29 throughout the cytosol with an accumulation next to the flagellar pocket (Fig. 4 A). Although, localisation was similar in most cells, some dividing cells exhibited an accumulation for LmxKin29 at the anterior and posterior ends. Interestingly, a fluorescent spot could be seen in the area where dividing cells were still attached in both LmxKin29GFP and GFPLmxKin29 (Fig. 4 Ba,b).

3.8 Verification of GFP-tagged LmxKin29 expression by immunoblotting

The expression of GFP-tagged LmxKin29 in transfectants was validated by immunoblot analysis with an anti-GFP antibody to confirm integrity of the fusion protein (Fig.4C). The cell lysate of four add-back clones, two clones carrying pTHGFPKin29 (A3C10 and D11C2) and two clones with pTHKin29GFP (A3C12 and D11A1) were used. In addition, a cell lysate of *L mexicana* expressing GFP only was used as a positive control and the wild type as a negative control. The blot in figure 4C displayed correct band sizes for LmxKin29 fused to GFP at 95.1 kDa (68.3 kDa for LmxKin29 + 26.8 kDa for GFP) for all clones. Free GFP is shown in lane 4 of figure 5C for cells expressing GFP only. No free GFP was detectable in any of the clones expressing GFP-tagged LmxKin29. This confirms that the fluorescence seen in the promastigotes is indeed from the tagged protein and not GFP alone. Fluorescence microscopy localised LmxKin29 fused with GFP next to the flagellar pocket for both N- and C-terminally tagged kinesin. These results are consistent with the phenotype investigations of null mutants for *LmxKin29*, which proved that LmxKin29 deficiency had no effect on the flagellum length, body width and body length of promastigotes. The proximal flagellar localisation has been shown to be an important regulatory site for different proteins in eukaryotic cells (32) like for instance a NIMA-related kinase, FA2, which is consistent with its role in deflagellation (33). We anticipated that LmxKin29 cellular similarity in localisation with another kinesin could give a clue about its function. Kinesin-13 (32), and Tb927.6.1770 (29) have a similar localisation as LmxKin29 in dividing cells. Hence, this localisation provides evidence that LmxKin29 might be responsible for certain fundamental cellular functions such as microtubule organisation or may mediate cell division. This should be addressed in further work
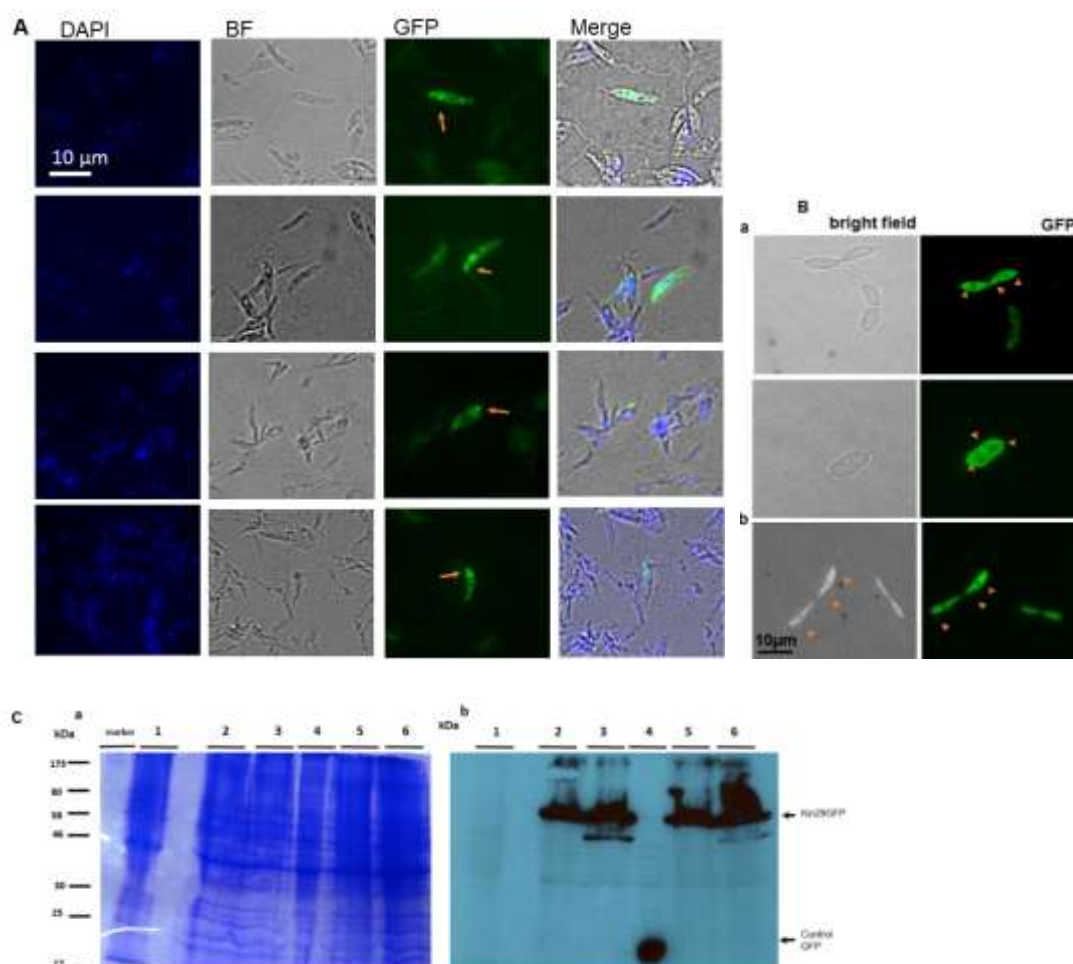
Fig.4. Localisation LmxKin29. A, Fluorescence microscopy of methanol-fixed *L. mexicana* promastigotes carrying pTHGFPKin29 (N-terminal), D11C2. Transgenic LmxKin29 variants were visualised with appropriate wavelengths for the indicated fluorophores, using a blue DAPI filter for DAPI, green FITC filter for GFP and white light for bright field (BF) microscopy; merge is a combination of three images using Image J software. Images were taken at 300 ms exposure time for fluorescence and 10 ms exposures for bright field. The arrows point to Kin29 localisation, Bar, 10 μm. **B,** Fluorescence microscopy of live transgenic *L. mexicana* promastigotes divided cells carrying pTHKin29GFP, a A3C12 (C-terminus GFP).b, carrying pTHGFPKin29, D11C2 (N-terminus GFP). The arrows point to GFPKin29 and Kin29GFP localisation. Bar, 10 μm. **C,** Identification of expression GFP-tagged LmxKin29 in *L. mexicana* by Immunoblot by using monoclonal anti-GFP (D5.1) XP® Rabbit (concentrated culture supernatants of promastigotes 1×10^8, a, 14% Coomassie-stained SDS-PAGE, b, immunoblot with blotted to nitrocellulose membrane. Lane 1, wild type *L. mexicana* (negative control); lanes 2 and 3, pTHGFPLmxKin29 A3C10 and D11C2, respectively (N-terminal GFP); lane 4, GFP

expressed in *L. mexicana* (positive control); lanes 5 and 6, pTHKin29GFP A3C12 and D11A1, respectively (C-terminal GFP), marker in kDa.

Conclusion

In summary, LmxKin29 is a typical kinesin motor molecule protein containing the three main parts, motor domain, coiled-coil and the tail domain.LmxKin29 can be bioinformatically classified as members belong to unspcified (anorphan) kinetoplast kinesin superfamily. LmxKin29 from *L. mexicana* is a putative kinesin with a high sequence similarity to the *L. major* kinesin LmjF.30.0350 that belongs to the "orphan" kinesins, introduced by (1). LmxKin29 also has a homologue in *T. brucei* (Tb927.5.1870) which was mentioned recently as an orphan kinesin . One of the unanticipated findings was that the LmxKin29 null mutant clones did not show any significant difference compared with the phenotype of the *L. mexicana* wild type. This result proved that LmxKin29 is not involved in the *L. mexicana* flagellum assembly. LmxKin29 plays a significant role in *L. mexicana* pathogenicity in vivo. The most important clinically relevant finding showed that LmxKin29 null mutants are unable to cause lesions in infected Balb/c mice and that no parasites could be detected at the injection site ten weeks post infection. LmxKin29 is not the only kinesin that is essential for parasite survival in an infected host. LmxKin29 and TbKif13-1 have a similar localisation in dividing cells and they both affect the parasite's pathogenicity. LmxKin29 is essential for survival of the amastigote parasite offering that it would be an ideal drug target.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

Analysis on the current situation of economic and trade activity in Azerbaijan

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Abstract
The article initially includes general information about Azerbaijan. Macroeconomic indicators of Azerbaijan have been analyzed and oil has been determined as a priority for the country. Subsequently, the trade sector of the country has thoroughly been analyzed. Thus, the volume of imports and exports of the country for 2008-2018, the largest volume of imported and exported products, the top countries in which the country traded during 2008-2018 have been investigated. Specific results have been obtained on the basis of the analysis of key macroeconomic indicators, its trade and economic status.

Keywords: import, export, economic relations, international trade, macroeconomic indicators

I.   Introduction

At the end of the twentieth century, the modern Republic of Azerbaijan, which is one of the sovereign states of the world, began the process of forming international relations, both politically and economically. The favorable environment created by the new socio-political system established by the independence of the Republic of Azerbaijan, as in all spheres of life, has created a solid and secure basis for its economic progress.

After 70 years of Soviet rule, the Republic of Azerbaijan finally regained its independence in 1991 and began to exercise its sovereign rights and pursue an independent policy in the economic sphere. The main directions of this policy were the economic system created on the basis of various forms of ownership, the transition to a market economy and integration into the world economy.

After gaining independence, the country's economic and political indicators have improved significantly over the years. Thus, the analysis of the country's socio-economic situation in 2018 shows that the strong economic potential created as a result of ongoing reforms has increased the resilience of the economy and ensured macroeconomic stability in the country.

In 2016, the implementation of measures identified within the framework of strategic roadmaps, concepts and other state programs for the national economy and 11 key sectors of the economy approved by the relevant Decree of the President of the Republic of Azerbaijan was successfully continued [7].

II.   Main macroeconomic indicators of the country

According to the State Statistics Committee of the Republic of Azerbaijan, in 2018, the gross domestic product (GDP) produced by the country's residents increased by 1.4 percent compared to the previous year and reached 79797.3 million manat. GDP per capita amounted to 8126.2 manat or 4780.1 US dollars [5, 9].

In 2018, the non-oil sector of GDP in real terms is 1.8%, including non-oil industry 8.5%, information and communication 9.3%, tourist accommodation and catering 7.6%, trade 3.0%, agriculture 4.6 %, transport and warehousing increased by 7.8%.

In the oil and gas sector in 2018 compared to 2017, an increase of 0.6% was recorded. The share of this sector in GDP was 41.5%.

Looking at the structure of GDP in 2018, we see that 44.2% of GDP is industry, 9.6% trade and repair of vehicles, 8% construction. As can be seen, the largest part of GDP is accounted for by industry.

The oil industry amounted to 37,611.6 million manat, which in turn increased by 0.4% compared to last year.

The non-oil industry amounted to 10,047.9 million manat and increased by 9.1% compared to last year.

In 2018, significant measures were done to increase the macroeconomic stability in the country, inflation stabilized at single digits, economic growth continued, the exchange rate of the national currency was stable, the country's strategic foreign exchange reserves continued to grow.

In 2018, the impact of external conditions on the development of the national economy was ambiguous. The high price of oil on world markets compared to 2017 (35%) supported economic growth and ensured the balance of payments [6, 9, 10].

Although global economic growth remains high, the International Monetary Fund has adjusted its global economic growth forecast for 2018 and 2019 to a downward trend (0.2%).

Rising geopolitical tensions, uncertainties in foreign trade policies, volatility in oil prices observed in the last months of 2018, and the impact of these processes on the economies of neighboring countries, major trading partners in the region, pose significant risks to macroeconomic stability. In 2018, the significant depreciation of national currencies (Russian ruble, Turkish lira, Iranian real) against the US dollar in some of these countries created a psychological expectation effect, but as a result of the measures taken, these effects were neutralized. Despite forecasts and expectations, the growth dynamics of imports from these countries to Azerbaijan was lower than the overall growth dynamics of imports.

The balance of payments surplus has created conditions for the growth of the country's strategic foreign exchange reserves. By the end of 2018, strategic reserves increased by 7% ($ 2.9 billion) compared to the beginning of the year and amounted to $ 44.8 billion USD. Strategic reserves are enough for 31 months of imports of goods and services and exceed foreign debt by 3 times [6].

According to the State Statistics Committee, in 2018, the value added in the field of tourist accommodation and catering increased by 7.6 percent compared to the same period last year and reached 1790.7 million manat and its share in non-oil GDP was 3.8 percent.

According to the State Border Service, in 2018, 2849.6 thousand foreigners and stateless persons came to Azerbaijan from 196 countries, or 5.7 percent more than the previous year. 30.9% of visitors came from the Russian Federation, 21.4% from Georgia, 10.2% from Turkey, 8.5% from Iran, 3.3% from the United Arab Emirates, 2.6% from Saudi Arabia, 2.4% from Iraq, 2.0% from Iraq. percent were citizens of Ukraine, 1.4 percent were citizens of Israel, 17.2 percent were citizens of other countries, and 0.1 percent were stateless persons.

III. Analysis of trading sector of the country

Due to the sharp rise in oil prices on the world market in Azerbaijan in 2008, the volume of exports reached a record high (Table 1). Therefore, the positive balance is 40.6 billion US dollar. However, as a result of the global financial crisis, oil prices fell sharply, and exports fell sharply in the following years. Also, in February and December of 2015, the volume of trade decreased due to the devaluation and the amount expressed in dollars. If in 2008 the positive balance was 40.6 billion US dollar, in 2018, this figure fell 4.6 times to $ 8.9 billion US dollar [2, 5, 8].

Years	Value of export (with million US dollar)	Value of import (with million US dollar)	Value of trade (with million US dollar)	Balance (with million US dollar)
2008	47756	7170	54926	40586
2009	14701	6123	20824	8578
2010	26560	6600	33160	19959
2011	34406	9756	44162	24650
2012	34161	9653	43814	24508
2013	32841	10713	43554	22129
2014	21828	9188	39408	12641
2015	16592	9216	25809	7375
2016	13107	8489	21596	4618
2017	15480	8783	24264	6697
2018	20290	11465	31755	8825

Table 1. General trade indicator of the Republic of Azerbaijan for 2008-2018
Source: Compiled by the author on the basis of data from the State Statistics Committee.

The volume of the most exported and imported products in the country in 2018 is shown in Table 2. As can be seen, the exported products include mineral products, including oil and oil products, plant products, low-precious metals and products made from them. 92% of exported products are mineral products, including oil and oil products. That is, oil and oil products are the basis of exports. The most imported products in 2018 are machines, mechanisms, electrical equipment, apparatus, low-precious metals and their products, chemical products. 22.6% of the total imported products are machines, mechanisms, electrical equipment, apparatus, and 12.3% are low-precious metals and their products.

№	The most exported products	Value (with million US dollars)	The most imported products	Value (with million US dollars)
1	Mineral products, including oil and oil products	17920	Machines, mechanisms, electro technical equipment, apparatus	2.6
2	Of plant origin products	585	Low-precious metals and products made of them	1.4
3	Low- precious metals and made of them products	252	Chemical industry products	0.976
4	Textile materials and products	135	Pearls, precious or non-precious stones, products made of precious metals and jewelry, jewelry, coins	0.838
5	Plastic masses , rubber , rubber, products made from them	119	Dry vehicles, floating vehicles	0.819
6	Ready-made food products, alcoholic and non-alcoholic beverages, vinegar, tobacco	90.7	Mineral products	0.766
7	Chemical industry products	78	Ready food products , alcohol and soft drinks, vinegar, tobacco	0.723
8	Machines, mechanisms , electro technical equipment , apparatus	64.6	Of plant origin products	0.56
9	animal and vegetable fats and oils	16.8	Plastics , rubber , rubber , products made of them	0.482
10	Raw hides, tanned leather, natural fur, from them manufactured products	13.3	Textile materials and products	0.43

Table 2. Volume of 10 most exported and imported products of the Republic of Azerbaijan in 2018

Source: Compiled by the author on the basis of data from the State Statistics Committee.

The most exported and imported countries of the Republic of Azerbaijan in 2018 are shown in Table 3. As can be seen from the table, Italy, Turkey and Israel account for 78.6% of the volume of exported transactions. Russia, Turkey and China account for 40.6% of imports. The top ten countries in terms of imports and exports are mainly large economies and closer to Azerbaijan.

№	Exporting countries	Weight in value of transactions (with %)	Importing countries	Weight in value of transactions (with %)
1	Italy	51.28	Russia	16.43
2	Turkey	15.93	Turkey	13.75
3	Israel	11.43	China	10.44
4	Czech Republic	8.18	Germany	5.74
5	India	7.15	USA	4.60
6	Germany	6.81	Switzerland	4.43
7	Russia	5.81	Ukraine	4.10
8	Canada	5.24	Iran	3.62
9	Indonesia	5.21	Japan	3.35
10	Portugal	4.61	Italy	2.92

Table 3. 10 most exported and imported countries of the Republic of Azerbaijan in 2018

Source: Compiled by the author on the basis of data from the State Statistics Committee.

IV.   Conclusion

By analyzing Azerbaijan's current geographical position in the world, its key macroeconomic indicators, its trade and economic status, we conclude the following:

1. In 2016, 11 strategic roadmaps were adopted to develop all spheres of national economy;

2. The share of the oil and gas sector in GDP was 41.5% in 2018.
3. In 2018, 44.2% of GDP was industry, 9.6% trade and repair of vehicles, 8% construction;

4. By the end of 2018, strategic reserves amonted 44.8 billion US dollar;

5. If in 2008 the positive balance was 40.6 billion US dollar, in 2018, this figure fell 4.6 times to $ 8.9 billion US dollar;

6. 92% of exported products are mineral products, including oil and oil products in 2018.

7. The most imported products in 2018 are machines, mechanisms, electrical equipment, apparatus, low-precious metals and their products, chemical products;

8. Italy, Turkey and Israel account for 78.6% of the volume of exported transactions.

9. Russia, Turkey and China account for 40.6% of imports.

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2. INTERNATIONAL AFRICAN CONFERENCE ON CURRENT STUDIES

THE DEVELOPMENT OF SENTENCE STRUCTURE IN XIII-XVI CENTURIES TURKIC LANGUAGES

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Abstract

The development of the Turkic languages' syntactic features have always been the research objective of diachronic studies. Sentence types used in scientific works in the middle ages are the research objectives of this article.

Generally, the process of compositing the sentence structure in Turkic languages has always been the subject of discussion and argumentation. And this is a matter due to the confrontation the internal development tendencies of the language with the foreign elements, historically, in the process of polishing a composite sentence, as well as the change of the development tendencies by changing the approach to the process within a certain period of time.Lexical elements, intonation, pause, word order, word repetition play a main role in making up composite sentences without conjunctions. Composite sentences without conjunctions and their subsequent development rate, the formation of composite and compound sentences took place parallelly in Turkic languages. The types of compound and complex sentences formed as a result of the development of a simple sentence in two directions within itself are different evolutionary manifestations of the same structure. Expanding on the basis of verbal constructions with a compound sentence which formed as a result of the expansion of a simple sentence with homogenous parts, forming from the simple sentence, the complex sentences are different ways of expressing a complex idea in speech. However, both types of sentences are distinguished by the fact that the possibilities of expressing reality of simple sentence expanding according to the point, and expressing comprehensively.

Keywords: sentence, Turkic languages, scientific style, structure of sentence, simple sentence, compound sentence